THE HIDDEN GRAMMAR

Hidden Sanskrit Grammar

Stories, Sūtras and the Missing Links

गुप्त व्याकरणम्

108 SANSKRIT STORIES · GUPTA VYĀKARAṆA



Dr.P.R.K.Varma

M.D., D.M.

Cardiologist and concept creator of Techno-Mythological Systems

VEDA · UPANIṢAD · ITIHĀSA · PURĀṆA · ŚĀSTRA

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Hidden Sanskrit Grammar: Stories, Sūtras and the Missing Links
The Hidden Grammar: 108 Sanskrit Stories (Gupta Vyākaraṇa)

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Sanskrit passages are given in Devanagari and in IAST transliteration, with the author's English renderings. Sūtra numbers follow the standard numbering of Pāṇini's Aṣṭādhyāyī.

The "AI Lesson" sections are modern analogies offered for teaching. They make no claim about the intentions of the ancient authors.

A companion series of 108 videos accompanies this book, one for each chapter.

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Preface

Sanskrit tradition did not keep its grammar only in grammar books. It kept it in stories. A god's name records the deed that earned it; a seer's riddle encodes the parts of speech; a quarrel between a teacher and a pupil explains the name of a Vedic branch. Again and again, a story and a rule of grammar turn out to be two descriptions of the same thing.

This book collects one hundred and eight such stories. Each one is told from its source, and each is paired with the rule, usually a sūtra of Pāṇini's *Aṣṭādhyāyī*, that the story carries. The aim throughout has been to keep only what the texts themselves support: where a source gives a verse, the verse is quoted; where a tradition is late or popular, it is introduced as such.

The number is deliberate. One hundred and eight is a number of completeness in Indian tradition, and it gives the book its shape: five parts, moving from the Vedas through the Upaniṣads, the epics and the Purāṇas, to the śāstras, where the grammarians tell stories about themselves.

Each chapter also offers a short lesson for artificial intelligence. These lessons are analogies, clearly marked, not claims about the ancient authors. They are included because the problems Pāṇini solved, compressing a language into rules, separating form from meaning, handling exceptions and ambiguity, are the problems that language technology faces today.

Dr.P.R.K.Varma
Bhimavaram

How to Read This Book

Every chapter follows the same order, so that the reader always knows where the grammar will appear.

The opening

A short paragraph in italics states the question the chapter answers.

The story

The narrative is told from its source, which is named under each heading.

The text

Key passages are set in a shaded box: Devanagari first, then IAST transliteration, then an English rendering and the reference.

The grammar

A derivation table shows how the word or form is built, step by step, with the rule that governs the decisive step. Where a single sūtra is central, it is set in its own box with its number, its text in Devanagari and transliteration, and a gloss.

Story and Grammar

A two-column table sets each element of the story beside the element of grammar it corresponds to. This is the "missing link" of the subtitle.

The AI Lesson

A second table draws a modern parallel with language technology. It is always marked as an analogy.

In brief

Each chapter closes with three points to remember.

Transliteration

Sanskrit is written in IAST. Long vowels carry a macron (ā, ī, ū); dots below mark retroflex consonants (ṭ, ḍ, ṇ, ṣ) and the vocalic ṛ; ś is the palatal sibilant; ṃ is anusvāra and ḥ is visarga. Sūtra numbers such as 6.1.87 give book, quarter and sūtra of the *Aṣṭādhyāyī*.

Introduction: Grammar Hidden in Stories

Pāṇini's *Aṣṭādhyāyī*, composed in about four thousand sūtras, describes the Sanskrit language with a precision that has impressed every later age. Its rules are compressed to the limit: markers that are never pronounced, abbreviations built from a list of fourteen sound-lines, and a principle, stated by Patañjali, that not one sound in the sūtras is idle.

The same tradition that produced this grammar also produced the Vedas, the Upaniṣads, the two epics and the Purāṇas. It would be surprising if the two had nothing to say to each other. In fact they speak constantly. Names in the stories are formed by exactly the rules Pāṇini states, and sometimes Pāṇini names the heroes in his rules. Riddles in the Veda are read by the grammarians as descriptions of language. And the grammarians, in turn, told stories about themselves: Pāṇini taught by Śiva, Vararuci who learned at one hearing, Patañjali who fell from the sky as a serpent.

A worked example

In the *Bhāgavata Purāṇa* (2.9.6), Brahmā, seated on the lotus and unable to see how to create, hears a word of two syllables. The text does not say the word. It says: the sixteenth and the twenty-first among the stops. Count the twenty-five stop consonants in their traditional order, five rows of five from the throat to the lips. The sixteenth is *ta*, the first dental; the twenty-first is *pa*, the first labial. The word is *tapa*, austerity. A story of creation has been written in the coordinates of phonetics, and only a reader who knows the grid can read it. That is the kind of link this book looks for.

Kinds of evidence

The links are of three kinds. Some are **stated**: the text itself explains a name or cites a rule, as when the Mahābhārata explains Śakuntalā's name, or Patañjali tells of the charioteer who corrected a grammarian. Some are **structural**: the form of a word in the story can only be produced by a particular sūtra, as with the long vowel of Aṣṭāvakra or the retroflex ṣ of Yudhiṣṭhira. And some are **interpretive**: a tra-

dition reads a story as being about language, as Patañjali reads the four-horned bull of the Ṛgveda. Each chapter makes clear which kind it presents.

The five parts

Part I, Vedic, follows speech, names and accent in the Saṃhitās and Brāhmaṇas. **Part II**, the Upaniṣads, treats phonetics as contemplation. **Part III**, Itihāsa and Kāvya, shows how the epics and Kālidāsa build their names and forms. **Part IV**, the Purāṇas and story literature, tells how grammar itself came down to us. **Part V**, the Śāstra tales, gathers the stories the grammarians, etymologists and exegetes told inside their own works.

Part I

Vedic

Speech, names and accent

Chapters 1–27

CHAPTER 1

Indra Divides Speech

Vyākṛtā Vāk

व्याकृता वाक्

Each part takes one story from the Vedas, the Upaniṣads, the epics, the Purāṇas or the grammarians themselves, and opens the grammar inside it. We begin where the tradition itself begins: with the god Indra, and the day speech was divided.

Speech Before Division

Taittirīya Saṃhitā 6.4.7

The story is told in the Taittirīya Saṃhitā of the Black Yajurveda, in its sixth book. In the beginning, it says, speech spoke turned away, undivided. One unbroken stream of sound, with no parts in it. The gods could hear this speech, but they could not take hold of it. There were no words to hold, no joints to separate. Sound that cannot be divided cannot be repeated exactly, taught, or checked. So the gods went to Indra, and said: divide this speech for us. Indra entered into the middle of speech, and divided it.

The Text

> वाग्वै पराच्यव्याकृतावदत्
> तामिन्द्रो मध्यतोऽवक्रम्य व्याकरोत्
>
> *vāg vai parācy avyākṛtāvadat*
> *tām indro madhyato 'vakramya vyākarot*
>
> Speech spoke turned away, undivided. Indra, entering into its middle, divided it.
>
> TAITTIRĪYA SAṂHITĀ 6.4.7.3

Speech spoke turned away, undivided. Indra, entering into its middle, divided it. And the text adds: therefore this speech is spoken divided. *tasmād iyaṃ vyākṛtā vāg* udyate.

Indra's Share

the aindravāyava cup

Watch what division does. The stream falls into ordered sounds: vowels, then consonants, each in its place. From sounds come syllables, from syllables come words, and words can now be counted, taught and checked. For this work, Indra asked the gods for a reward. He asked that one Soma cup be drawn for him and for Vāyu, the wind god, together. That is why, the text says, the *aindravāyava* cup is drawn for both of them at once. The pairing is apt. Vāyu is the breath that carries the sound. Indra is the one who makes the cuts in it.

The Grammar in the Word

vi + ā + √kṛ

vi	apart
ā	fully
√kṛ	to make, to do
vyākṛta	divided, analysed
vyākaraṇa	the means of dividing

The name of the science is the verb of the story

Now look at the verb the text uses: *vyākarot*, he divided. It is built from two prefixes, vi, apart, and *ā*, fully, joined to the root *kṛ*, to make or to do. To make apart, completely. That is division, carried through to the end. With the past participle suffix, the same root gives *vyākṛta*: divided, analysed. Speech after Indra is *vyākṛtā vāk*. And with the suffix ana, which can name the instrument of an action, it gives *vyākaraṇa*: the means of dividing. That is the Sanskrit word for grammar. So the name of the science is hidden in the verb of the story. Grammar is, by its very name, the work Indra did.

Where Division Stops

> **1.4.14**
> सुप्तिङन्तं पदम्
>
> *suptiṅantaṃ padam*
>
> What ends in a nominal ending or a verbal ending is a word.
>
> AṢṬĀDHYĀYĪ 1.4.14

Division needs a stopping point. Cut too little and nothing is clear. Cut too much and only noise is left. Pāṇini fixes the unit in one short rule: *suptiṅantaṃ* padam. What ends in a nominal ending, a sup, or in a verbal ending, a *tiṅ*, is a word, a pada. Inside the word, grammar divides further: root, suffix, ending. Between words, it marks where one ends and the next begins. Indra's division and Pāṇini's definition answer the same question: where are the joints of speech?

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Speech, one unbroken stream	Continuous sound: *saṃhitā*
Indra enters the middle	Analysis into parts
vyākarot, he divided	*vyākaraṇa*, grammar
Speech spoken divided	Words: *suptiṅantaṃ* padam

The unbroken stream is continuous speech, which the tradition calls *saṃhitā*, sound joined together. Indra entering the middle is analysis: finding the points where the stream can be separated. His verb, *vyākarot*, becomes the name of the whole discipline, *vyākaraṇa*. And speech spoken divided is speech made of words, as Pāṇini defines them.

The AI Lesson

segmentation before meaning

VEDIC SPEECH	LANGUAGE MODELS
Undivided speech	Raw audio and raw text
Indra's cuts	Segmentation into tokens
The right unit: pada	Units that follow word structure
Breath and cut together	Signal and structure together

A modern analogy, not a claim about the ancient text.

The story has a modern echo. A machine that learns language also begins with an unbroken stream: raw sound waves, or raw strings of characters. Before any meaning can be learned, the stream must be cut into units, which engineers call tokens. Where the cuts fall matters. Cuts that ignore the joints of a language make learning harder. Cuts that follow roots, suffixes and endings, as Pāṇini's grammar does, give units that carry meaning. Breath carries the sound; the cut makes it learnable. Wind and Indra, in one cup.

IN BRIEF

- Grammar begins as division
- *vyākaraṇa*: the means of making apart
- Speech becomes words, and words can be taught

Grammar begins as division. That is the first hidden lesson, and the tradition placed it in the oldest layer of its texts. vyākaraṇa is the means of making apart, named after what Indra did. Speech that is divided becomes words, and words can be taught, remembered and checked.

CHAPTER 2

The Word List That Never Ends

Pratipadapāṭha

प्रतिपदपाठः

But once speech is divided, a new problem appears. How many words are there, and how is anyone to learn them all? The tradition answers with a story about a teacher, a student, and a thousand years.

A Thousand Divine Years

Mahābhāṣya, Paspaśā

The story is told by Patañjali, at the very opening of his Great Commentary on Pāṇini, the Mahābhāṣya. Bṛhaspati, the teacher of the gods, set out to teach Indra the words of the language. Indra was the most powerful of students, and Bṛhaspati the most learned of teachers. The method was simple: each word was recited and taught on its own, one after another. This is called *pratipadapāṭha*, word by word. They went on for a thousand divine years. And still they did not reach the end.

The Text

> बृहस्पतिरिन्द्राय दिव्यं वर्षसहस्रं
> प्रतिपदोक्तानां शब्दानां शब्दपारायणं प्रोवाच
> नान्तं जगाम
>
> *bṛhaspatir indrāya divyaṃ varṣasahasraṃ*
> *pratipadoktānāṃ śabdānāṃ śabdapārāyaṇaṃ provāca*
> *nāntaṃ jagāma*
>
> For a thousand divine years Bṛhaspati recited to Indra the words, each stated on its own, and did not reach the end.
>
> MAHĀBHĀṢYA · PASPAŚĀ

For a thousand divine years, Bṛhaspati recited to Indra the words, each stated on its own, and he did not reach the end.

The Question It Leaves

a hundred years today

Patañjali then draws the lesson himself. Bṛhaspati was the teacher, Indra the student, and the time a thousand divine years. Even so, the end was not reached. What, then, of today, he asks, when a person who lives long lives a hundred years? Listing words one by one cannot be the way. No lifetime is long enough, and every new word would need a new lesson. His answer is the program of all Sanskrit grammar. A description must be given that has the general and the particular in it, *sāmānya* and *viśeṣa*. With little effort, he says, people should then grasp great floods of words.

The General Rule

> **3.2.1**
> **कर्मण्यण्**
>
> *karmaṇy aṇ*
>
> When the object is named before the root, add the suffix *aṆ*: the one who does that action.
>
> UTSARGA

Patañjali gives an example straight from Pāṇini. First, the general rule, the utsarga. When a verbal root comes after the word for its object, the suffix *aṇ* is added, and the compound names the one who does the action.

The Rule at Work

kumbhakāra

kumbha	pot (object)
√*kṛ*	to make
aṆ	general suffix
kumbhakāraḥ	potter

One rule covers every maker of every object

Take the word for a pot, kumbha, and the root *kṛ*, to make. The general rule adds *aṇ*. The root vowel is strengthened, and the compound is complete. *kumbhakāraḥ*: the one who makes pots, the potter. The same single rule gives every maker of every thing, without listing a single one of them. That is what Bṛhaspati's list could never do.

The Exception

3.2.3
आतोऽनुपसर्गे कः

āto 'nupasarge kaḥ

After a root ending in *ā*, with no prefix, the suffix Ka instead: *godaḥ*, the giver of cows.

APAVĀDA

Then comes the particular, the exception, the *apavāda*. After a root ending in long *ā*, with no prefix, the suffix is ka instead. So from go, cow, and *dā*, to give, we get *godaḥ*: the giver of cows. The exception names only what differs. Everything else falls back to the general rule.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Bṛhaspati lists word by word	*pratipadapāṭha*: lists
A thousand years, no end	Lists never close
A hundred years of life	The need for economy: *lāghava*
The general and the particular	utsarga and *apavāda*

Bṛhaspati's method is the list, and a list of words never closes. New words are always being made. A human life is short, and that is why grammar prizes economy, *lāghava*, the saving of effort. And the way out is the pair Patañjali names: general rules, utsarga, and exceptions, *apavāda*. Pāṇini's nearly four thousand *sūtras* are built on this pair.

The AI Lesson

memory or rule

THE STORY	MACHINE LEARNING
Learning each word alone	Memorising training examples
No end to the list	Unseen words keep coming
General rule	Generalisation
Exception	Handling the rare case

A modern analogy, not a claim about the ancient text.

The story speaks to machine learning. A system that only memorises its examples is Bṛhaspati with an endless list. However large the list, new words arrive that were never in it. What a learner must find is the general pattern, which engineers call generalisation. And it must still get the rare cases right. A good grammar shows how: state the general rule once, and let each exception override it only where it applies.

IN BRIEF

- Lists never end; rules do
- General rule and exception: utsarga and *apavāda*
- Little effort, great floods of words

Lists never end. Rules can be finished, and they reach words no list has ever met. That is the hidden lesson of Bṛhaspati and Indra: the general rule and the exception, utsarga and apavāda. With little effort, great floods of words.

CHAPTER 3

One Accent, Two Meanings

Indraśatru

इन्द्रशत्रुः

Now a story shows what happens when a rule is broken, by just one feature of one word. A father wants a son to kill Indra. He chooses the right word, and places its accent wrong.

Tvaṣṭṛ's Sacrifice

Taittirīya Saṃhitā 2.4.12 · Śatapatha 1.6.3

The story is told in the Taittirīya Saṃhitā and in the Śatapatha Brāhmaṇa. Tvaṣṭṛ, the divine craftsman, had a son, Viśvarūpa, and Indra killed him. In grief and anger, Tvaṣṭṛ prepared a Soma sacrifice and kept Indra out of it. But Indra came uninvited and drank the Soma by force. What was left, Tvaṣṭṛ poured into the fire, to bring forth an avenger. As he poured it, he said: *indraśatrur* vardhasva. Grow, slayer of Indra.

The Wrong Accent

the word turns against its speaker

From the fire rose Vṛtra, the great serpent, and he grew. But Tvaṣṭṛ had spoken the compound with the wrong accent. He meant: the slayer of Indra. He placed the high tone on the first part of the word, on Indra. With that accent, the same sounds mean something else: one whose slayer is Indra. And so it happened. Indra killed Vṛtra. The father's own word had decided his son's fate.

Why Study Grammar

> दुष्टः शब्दः स्वरतो वर्णतो वा मिथ्याप्रयुक्तो न तमर्थमाह
> स वाग्वज्रो यजमानं हिनस्ति
> यथेन्द्रशत्रुः स्वरतोऽपराधात्
>
> *duṣṭaḥ śabdaḥ svarato varṇato vā mithyāprayukto na tam artham āha*
> *sa vāgvajro yajamānaṃ hinasti*
> *yathendraśatruḥ svarato 'parādhāt*
>
> A word spoken wrongly, in accent or in sound, does not convey the meaning meant. It becomes a thunderbolt of speech and harms the sacrificer, as indraśatru did through a fault of accent.
>
> MAHĀBHĀṢYA · PASPAŚĀ

Patañjali cites this story as one of the reasons to study grammar, in a verse he quotes. A word spoken wrongly, in its accent or its sounds, does not say what was meant. It becomes a thunderbolt of speech and harms the one who offers it, as *indraśatru* did, through a fault of accent.

Two Compounds, One Spelling

indra + śatru

indrasya śatruḥ	slayer of Indra
indraśatrú	high tone at the end
'Indra's slayer'	*tatpuruṣa*
indraḥ śatrur yasya	whose slayer is Indra
índraśatru	high tone on Indra
'slain by Indra'	*bahuvrīhi*

Same letters; the accent shows which compound it is

The grammar is exact. The compound *indraśatru* can be analysed in two ways. As indrasya *śatruḥ*, the slayer of Indra, it is a dependent compound, a *tatpuruṣa*, and its high tone falls at the end. That is what Tvaṣṭṛ meant: a son who would destroy Indra. As *indraḥ śatrur* yasya, he whose slayer is Indra, it is a possessive compound, a *bahuvrīhi*. In that kind of compound, the first word keeps its own accent, and Indra is accented on its first syllable. That is what Tvaṣṭṛ said: a son for Indra to destroy. Not one letter differs between the two. Only the accent tells the listener which compound has been spoken.

Accent at the End

> **6.1.223**
> समासस्य
>
> *samāsasya*
>
> A compound takes the high tone on its final syllable.
> AṢṬĀDHYĀYĪ 6.1.223

Pāṇini states the default in one word. *samāsasya*, *sūtra* 6.1.2 two three. A compound takes its high tone at the end. This is the accent Tvaṣṭṛ should have used.

The First Word Keeps Its Accent

> **6.2.1**
> बहुव्रीहौ प्रकृत्या पूर्वपदम्
>
> *bahuvrīhau prakṛtyā pūrvapadam*
>
> In a *bahuvrīhi*, the first member keeps its own natural accent.
> AṢṬĀDHYĀYĪ 6.2.1

Then the exception for possessive compounds: *bahuvrīhau prakṛtyā pūrvapadam*, *sūtra* 6.2.1. In a *bahuvrīhi*, the first member keeps its own accent. Here the general rule and the exception of Chapter 2 decide a life and a death.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Tvaṣṭṛ means: Indra's slayer	*tatpuruṣa*, final accent
He accents Indra	*bahuvrīhi*, first accent
Vṛtra is slain by Indra	Meaning follows the accent
The word turns on its speaker	*mithyāprayukta*: misused

What Tvaṣṭṛ meant is a *tatpuruṣa*, with the accent at the end. What he said is a *bahuvrīhi*, with the accent on Indra. The outcome follows what was said, not what was meant. That is why the verse calls such a word a thunderbolt of speech. Grammar, for Patañjali, is how a speaker keeps meaning and saying the same.

The AI Lesson

one feature, opposite meaning

THE STORY	AI SYSTEMS
Same sounds, different accent	Same tokens, different structure
Accent decides the compound	Prosody and stress carry meaning
Meant one thing, said another	Instruction misread by the model
Grammar makes it checkable	Explicit structure makes it checkable

A modern analogy, not a claim about the ancient text.

The story has a modern echo. Two inputs can share every letter and still mean opposite things. In speech, stress and tone carry that difference. Systems that turn speech into plain text can lose it, and with it the meaning. In instructions to an AI, a small slip in structure can reverse what is asked, just as Tvaṣṭṛ's accent reversed his wish. The remedy Patañjali offers is the same one engineers reach for: make the structure explicit, so that what is meant can be checked against what is said.

IN BRIEF

- One accent, two compounds
- What is said decides, not what is meant
- Grammar keeps meaning and saying the same

One accent, two compounds, and two opposite fates. The story teaches that the word as spoken decides, not the wish behind it. Grammar is the discipline that keeps meaning and saying the same.

CHAPTER 4

The Asuras Lose Speech

He ’lavo

हेऽलवो हेऽलवः

Now a whole army loses a battle over the way it speaks. The gods and the demons, the Asuras, compete for speech itself. One side wins it, and the other is left crying a broken word.

The Contest for Speech

Śatapatha Brāhmaṇa 3.2.1

The story is told in the Śatapatha Brāhmaṇa, in its third book, among the rites of consecration. The gods and the Asuras, both children of Prajāpati, were contending. And speech, Vāc, went over to the side of the gods. The gods won her through the sacrifice, and with her they won the power to speak rightly. The Asuras were left deprived of speech. Crying he 'lavo, he *'lavaḥ*, they were defeated. What they meant to cry was he *'rayaḥ*: ho, enemies! But the sound came out wrong.

The Text

> तेऽसुरा आत्तवचसो
> हेऽलवो हेऽलव इति वदन्तः पराबभूवुः
>
> *te 'surā āttavacaso*
> *he 'lavo he 'lava iti vadantaḥ parābabhūvuḥ*
>
> The Asuras, their speech taken away, were defeated, crying he ’lavo, he ’lavaḥ.
>
> ŚATAPATHA BRĀHMAṆA 3.2.1.23

The Asuras, their speech taken from them, were defeated, crying he ’lavo, he *’lavaḥ*. And the text draws its rule: therefore a *brāhmaṇa* should not speak barbarously, for such speech is the speech of the Asuras.

One Sound Slips

r becomes l

he arayaḥ	ho, enemies!
r → l	one sound changed
he 'lavaḥ	a broken cry

One substituted sound, and the word is no longer a word

Look at what went wrong. The intended cry is he *arayaḥ*, with the word ari, enemy. In the Asuras' mouths the r became an l. The result, he *'lavaḥ*, is not the word for enemies at all. It is no word. A single substituted sound turned a battle cry into noise. This is the fault the verse in Chapter 3 called *varṇataḥ*: an error of sound.

Patañjali's Reason

तस्माद्ब्राह्मणेन न म्लेच्छितवै नापभाषितवै
म्लेच्छो ह वा एष यदपशब्दः
म्लेच्छा मा भूमेत्यध्येयं व्याकरणम्

tasmād brāhmaṇena na mlecchitavai nāpabhāṣitavai
mleccho ha vā eṣa yad apaśabdaḥ
mlecchā mā bhūmety adhyeyaṃ vyākaraṇam

Therefore one should not speak barbarously or wrongly; a wrong word is barbarous. 'Let us not become barbarians': for this, grammar must be studied.

MAHĀBHĀṢYA · PASPAŚĀ

Patañjali retells this story when he lists the purposes of studying grammar, in his own form of the cry, he 'layo. Therefore one should not speak barbarously or wrongly. A wrong word, an *apaśabda*, is barbarous. So that we do not become barbarians, grammar is to be studied.

Where r and l Are Kin

1.1.9 vt.
ऋऌवर्णयोर्मिथः सावर्ण्यं वाच्यम्

ṛḷvarṇayor mithaḥ sāvarṇyaṃ vācyam

ṛ and *ḷ* are to be treated as homogeneous with each other.

VĀRTTIKA ON 1.1.9

Grammar does not pretend that r and l are strangers. They are close in the mouth, and the tradition knows it. A *vārttika* on Pāṇini's rule of homogeneous sounds says: *ṛḷvarṇayor mithaḥ sāvarṇyaṃ vācyam*. The vowels *ṛ* and *ḷ* are to be treated as one class. Where grammar allows the two to meet, it says so in a rule. The Asuras' change was not licensed by any rule. That is the difference between a variant and an error.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Speech goes to the gods	Correct speech: *sādhu śabda*
Asuras cry he 'lavo	*apaśabda*: a wrong form
r slips into l	A substitution no rule allows
Defeat follows	*mlecchā mā bhūma*: study grammar

The gods keep correct speech, *sādhu* words. The Asuras are left with a wrong form, an *apaśabda*. Their fault is a substitution that no rule permits. Grammar is exactly the list of which changes are allowed, and where. Patañjali turns the old defeat into a reason for every student to learn grammar: so that we do not speak like the Asuras.

The AI Lesson

valid variant or error

THE STORY	AI SYSTEMS
One sound substituted	One character or token corrupted
No word results	Output outside the vocabulary
Rules say which changes are allowed	Validation against a grammar
Variant versus error	Normalisation versus rejection

A modern analogy, not a claim about the ancient text.

The modern echo is the line between a valid variant and an error. Speech recognisers and language models meet both every day: accents and spelling variants that should be accepted, and corruptions that change the meaning or make no word at all. A system that knows the rules of the language can tell them apart. It can normalise what the grammar allows, and flag what it does not. That is the Asuras' lesson in engineering terms: know which substitutions are permitted, and check every output against them.

IN BRIEF

- One sound slipped: r into l
- A variant follows a rule; an error does not
- *mlecchā mā bhūma*: so we study grammar

One sound slipped, and an army lost its speech. A variant follows a rule. An error does not. Grammar is the record of which is which. mlecchā mā bhūma: let us not become barbarians. That is why grammar is studied.

CHAPTER 5

The Four-Horned Bull

Catvāri Śṛṅgā

चत्वारि शृङ्गा

Now speech itself appears, as a strange animal in a riddle of the Ṛgveda. A bull with four horns, three feet, two heads and seven hands. Patañjali saw grammar in every part of it.

The Riddle

> चत्वारि शृङ्गा त्रयो अस्य पादा
> द्वे शीर्षे सप्त हस्तासो अस्य
> त्रिधा बद्धो वृषभो रोरवीति
> महो देवो मर्त्यां आ विवेश
>
> *catvāri śṛṅgā trayo asya pādā*
> *dve śīrṣe sapta hastāso asya*
> *tridhā baddho vṛṣabho roravīti*
> *maho devo martyāṃ ā viveśa*
>
> Four horns, three feet, two heads, seven hands has he. Bound in three places, the bull roars. The great god has entered mortals.
>
> ṚGVEDA 4.58.3

The verse comes from the fourth book of the Ṛgveda, from a hymn in praise of the sacred ghee. Four horns, three feet, two heads, seven hands. Bound in three places, the bull roars. The great god has entered into mortals. Many readers took this bull to be fire, or the sacrifice. But the grammarians read it another way.

Patañjali Reads the Bull

Mahābhāṣya, Paspaśā

Patañjali quotes this verse at the opening of the Mahābhāṣya, and explains it as a picture of speech. The four horns are the four kinds of words: nouns, verbs, prefixes, and particles. *nāma*, *ākhyāta*, upasarga, *nipāta*. The three feet are the three times: past, present and future. The two heads are the word as eternal, and the

word as produced in speech. The seven hands are the seven case series of the noun. Bound in three places means the sound is formed in the chest, the throat and the head. The bull, *vṛṣabha*, showers its gifts, and roars, which is to say it sounds. And the great god who has entered mortals is speech itself. The purpose of grammar, Patañjali says, is to become one with that great god.

The Four Horns

four kinds of words

nāma	noun: *devaḥ*
ākhyāta	verb: gacchati
upasarga	prefix: *ā-gacchati*
nipāta	particle: ca, *vā*, iti

Every Sanskrit sentence is built from these four

Take the horns one at a time. A *nāma*, a noun, names a thing, like *devaḥ*, the god. An *ākhyāta*, a verb, names an action, like gacchati, he goes. An upasarga, a prefix, bends the action: *āgacchati*, he comes. And a *nipāta*, a particle, joins and colours: ca, and; *vā*, or; iti, thus. Every sentence of the language is built from these four kinds. The horns are the parts of speech.

The Seven Hands

> **1.4.104**
> **विभक्तिश्च**
>
> *vibhaktiś ca*
>
> Each set of three endings is called a vibhakti: seven sets for the noun.
>
> AṢṬĀDHYĀYĪ 1.4.104

The seven hands point straight into Pāṇini's system. The noun endings come in triplets, singular, dual and plural. Sūtra 1.4.104, *vibhaktiś* ca, names each set a vibhakti. There are seven such sets for the noun: the seven cases, from the nominative to the locative. Seven hands, each holding a share of meaning.

The Bull and the Grammar

Patañjali's reading

THE BULL	THE GRAMMAR
Four horns	Noun, verb, prefix, particle
Three feet	Past, present, future
Two heads	Eternal word and spoken word
Seven hands	Seven vibhaktis
Bound in three places	Chest, throat, head

Horns for the kinds of words. Feet for the times. Heads for the two natures of the word. Hands for the cases. Three bonds for the three places where sound is shaped. This is Patañjali's interpretation, offered by a grammarian centuries after the hymn. It does not tell us what the Vedic poet intended. It tells us how deeply the grammarians saw their science in the oldest text they had.

The AI Lesson

a schema for language

THE BULL	LANGUAGE TECHNOLOGY
Four kinds of words	Part-of-speech tags
Three times	Tense features
Seven case series	Case and number features
One animal, many parts	One schema, many layers

A modern analogy, not a claim about the ancient text.

In modern language technology, a sentence is often annotated in layers: parts of speech, tense, case, number. The bull is such a schema in a single image: word classes as horns, tense as feet, case series as hands. Annotated data built on clear categories like these is what teaches a model to analyse a language, not merely to imitate it. A good schema is memorable, complete, and small. Patañjali's bull is all three.

IN BRIEF

- Speech pictured as a bull
- Horns, feet, heads, hands: the parts of grammar
- Grammar: to become one with the great god, speech

Speech, pictured as a roaring bull that has entered every mortal. Its horns, feet, heads and hands are the parts of grammar, in Patañjali's reading. To study grammar, he says, is to come close to that great god, speech.

CHAPTER 6

The Four Divisions of Speech

Catvāri Padāni

चत्वारि पदानि

Now another riddle from the Ṛgveda divides speech into four quarters, and says that three of them are hidden. Only one quarter, it says, is spoken by human beings. Where are the other three?

The Riddle

> चत्वारि वाक्परिमिता पदानि
> तानि विदुर्ब्राह्मणा ये मनीषिणः
> गुहा त्रीणि निहिता नेङ्गयन्ति
> तुरीयं वाचो मनुष्या वदन्ति
>
> *catvāri vāk parimitā padāni*
> *tāni vidur brāhmaṇā ye manīṣiṇaḥ*
> *guhā trīṇi nihitā neṅgayanti*
> *turīyaṃ vāco manuṣyā vadanti*
>
> Speech is measured in four quarters. The wise who know them know them all. Three, set in secret, do not stir. The fourth quarter of speech is what humans speak.
>
> ṚGVEDA 1.164.45

The verse belongs to the great riddle hymn of Dīrghatamas, in the first book of the Ṛgveda. Speech is measured out in four quarters. The wise who have insight know them. Three are set in secret and do not stir. The fourth quarter of speech is what human beings speak.

Many Readers, One Riddle

Nirukta 13.9 · Mahābhāṣya

The tradition argued about this verse for centuries, and Yāska in his Nirukta already gathers several readings of it. Some took the four quarters to be the syllable Oṃ and the three great utterances, *bhūḥ*, *bhuvaḥ*, *svaḥ*. The grammarians took

them as the four kinds of words: noun, verb, prefix and particle. Patañjali quotes the verse at the start of his commentary, beside the four-horned bull. But that reading leaves a puzzle. All four kinds of words are spoken by people. What, then, is hidden? Later, the grammarian-philosopher Bhartṛhari described speech in levels, from an undivided seeing in the mind, through an inner sequence, to the sound that is uttered.

From Self to Sound

Pāṇinīya Śikṣā 6–7

ātmā + buddhi	the self grasps meaning
manas	the mind, wishing to speak
kāyāgni	the body's fire
māruta	the breath
svara	the sound in the chest

Three hidden stages, then the one we hear

The phonetic tradition gives the hidden quarters a concrete form. The Pāṇinīya Śikṣā describes how a word is born. The self, with the intellect, gathers the meanings. *ātmā buddhyā sametyārthān*. It joins the mind with the wish to speak. mano *yuṅkte vivakṣayā*. The mind strikes the fire of the body, and the fire sets the breath in motion. The breath, moving in the chest, produces a low sound. From there it rises to the throat and head, and the letters are formed. Meaning, intention and energy come before any sound at all. Only the last stage reaches the ear. Three quarters hidden; one spoken. The riddle and the phonetics tell the same story.

Story and Grammar

the missing link

IN THE RIDDLE	IN THE SCIENCE OF SPEECH
Four measured quarters	Speech has structure and stages
Three hidden, unmoving	Meaning, intention, articulation plan
One quarter spoken	Audible sound: what grammar records
Known to the wise	Analysis reveals the hidden parts

Speech is measured: it has parts and stages, and the measuring is the grammarian's work. Most of it is hidden. What we hear is the last quarter, the sound. Grammar works backwards from that sound to the meaning and intention behind it. That is

why the verse says only the wise know all four. Analysis is the way to the hidden quarters.

The AI Lesson

hidden layers

THE RIDDLE	NEURAL NETWORKS
Three quarters hidden	Hidden layers
One quarter spoken	The visible output text
Meaning before sound	Internal representations
Known only to the wise	Interpretability research

A modern analogy, not a claim about the ancient text.

A language model also speaks only its fourth quarter. We see the words it outputs. Before them lie many hidden layers of computation, where something like meaning and intention is represented, but never shown. The research field called interpretability tries to read those hidden layers: to know the three quarters behind the one we hear. The riddle's advice holds: do not judge speech by its sound alone. Study the structure that produced it.

IN BRIEF

- Speech has four quarters
- Three hidden, one spoken
- Grammar works back from sound to meaning

Speech has four quarters, measured and known to the wise. Three are hidden within, and one is spoken. That spoken quarter is where grammar begins its work. It works back from sound to intention to meaning.

CHAPTER 7

Speech Speaks for Herself

Vāk Sūkta

वाक्सूक्तम्

Now speech herself steps forward and speaks, in the first person, in a hymn of the Ṛgveda. And hidden in her very name is one of the most common rules of Sanskrit sound.

I Move with the Gods

> अहं रुद्रेभिर्वसुभिश्चराम्य्
> अहमादित्यैरुत विश्वदेवैः
>
> *ahaṃ rudrebhir vasubhiś carāmy*
> *aham ādityair uta viśvadevaiḥ*
>
> I move with the Rudras and the Vasus, I with the Ādityas and all the gods.
>
> ṚGVEDA 10.125.1

The hymn is the one hundred and twenty-fifth of the tenth book. Its seer is named as Vāk, daughter of the sage Ambhṛṇa. I move with the Rudras and the Vasus; I with the Ādityas and all the gods.

The Hymn of Speech

Ṛgveda 10.125

Speech goes on to describe herself. I am the queen, she says, the gatherer of treasures, the first of those worthy of worship. Through me a person eats food, sees, breathes and hears what is spoken. Those who do not recognise me still dwell in me. I myself say this, aham eva svayam *idaṃ vadāmi*, what is welcome to gods and humans. Whom I love, I make strong; I make him a brahman, a seer, a sage. In this hymn speech is not a tool used by a speaker. Speech is the speaker. Every verb is in the first person: *carāmi*, I move; *vadāmi*, I say.

The Rule in Her Name

vāc · vāk · vāg

vāc	the stem
vāc → *vāk*	at the end of a word
vāg vai	before a voiced sound
vācam	inside the word: c stays
vāci	'in speech'
vāṅmaya	before a nasal

One word, four shapes: position decides the sound

Now look closely at her name. The stem is *vāc*, ending in the palatal c. But at the end of a word, the c cannot stay. It becomes k, and we say *vāk*. Before a voiced sound it becomes g, as in Chapter 1's first line: *vāg* vai. Inside the word, before a vowel ending, the c stays as it is: *vācam*, speech, as object. And *vāci*, in speech. The stem is unchanged where a vowel follows. Before a nasal, it becomes the nasal of its row: *vāṅmaya*, made of speech. One word, four shapes. Position in the sentence decides which sound is spoken.

Palatals Become Velars

> **8.2.30**
> **चोः कुः**
>
> *coḥ kuḥ*
>
> A palatal is replaced by a velar, before a hard consonant or at the end of a word.
> AṢṬĀDHYĀYĪ 8.2.30

Pāṇini's rule is two syllables long: *coḥ kuḥ*. Sūtra 8.2.30. In place of a palatal, the c row, comes a velar, the k row, before a hard consonant and at the end of a word. A further rule then voices it where voice follows. The goddess's own name obeys it every time she is named. Her hymn speaks; her name follows the rules of speech.

Story and Grammar

the missing link

IN THE HYMN	IN THE GRAMMAR
Speech speaks as 'I'	First-person forms: *carāmi*, *vadāmi*
She moves with all the gods	One stem in every context
vāk, *vāg*, *vāc*, *vāṅ*	*coḥ kuḥ* and its companions
She makes seers	Knowing the rules of speech

Speech speaks as 'I', and her verbs carry the first-person ending. She moves among all the gods, and her name moves through all its shapes, *vāk*, *vāg*, *vāc*, *vāṅ*, each fixed by rule. And whom she loves she makes a seer. In the grammarians' reading, that seer is the one who knows how speech is formed.

The AI Lesson

one word, many surfaces

THE HYMN	LANGUAGE TECHNOLOGY
vāk, *vāg*, *vāc*, *vāṅ*	Many surface strings
One stem, *vāc*	One lemma
Position decides the sound	Context-dependent rewriting
Rule known, form predictable	Rule-aware normalisation

A modern analogy, not a claim about the ancient text.

A computer reading Sanskrit text meets *vāk*, *vāg*, *vāc* and *vāṅ*, and must know that they are one word. Without the rule, they look like four unrelated strings, and a model must learn each one separately. With the rule, the system can map every surface form back to a single stem, which engineers call a lemma. Sandhi rules are exactly such rewriting rules, and they let a machine see through the changing surface to the word that speech herself is.

IN BRIEF

- Speech speaks for herself
- Her name changes by a rule: *coḥ kuḥ*
- Many shapes, one word

In the Ṛgveda, speech speaks for herself, as the first-person queen of the gods. Even her name obeys a rule of sound: coḥ kuḥ. Many shapes, one word. To know the rule is to recognise her everywhere.

CHAPTER 8

The Syllable in the Highest Heaven

Ṛco Akṣare

ऋचो अक्षरे

Now the riddle hymn of Dīrghatamas returns with a question. On what do all the verses rest? Its answer is a single word, which means both a syllable and that which does not perish.

The Riddle

ऋचो अक्षरे परमे व्योमन्
यस्मिन्देवा अधि विश्वे निषेदुः
यस्तन्न वेद किमृचा करिष्यति
य इत्तद्विदुस्त इमे समासते

ṛco akṣare parame vyoman
yasmin devā adhi viśve niṣeduḥ
yas tan na veda kim ṛcā kariṣyati
ya it tad vidus ta ime sam āsate

The verses rest on the syllable in the highest heaven, on which all the gods are seated. One who does not know that, what will he do with the verse? Those who know it sit here together.

ṚGVEDA 1.164.39

The verse is from the first book of the Ṛgveda, in the same hymn as the four quarters of speech. The verses rest on the syllable in the highest heaven, where all the gods are seated. One who does not know that, what will he do with the verse? Those who know it sit here together.

A Seat for the Gods

the riddle hymn

The picture is of a seat in the highest heaven. The verses of the Veda rest on it, and the gods themselves sit upon it. That seat is called the *akṣara*. Later teachers read it as the syllable Oṃ, or as the imperishable reality behind all things. But the plain

sense of the word is also the grammarian's sense: a syllable, the smallest unit a verse is counted in. A verse is made of syllables. Remove them and nothing is left. The riddle says this foundation must be known, or the verse is useless.

Two Meanings, One Word

a + kṣara

na	not
√*kṣar*	to flow away, perish
akṣara	not perishing
akṣara	the syllable
akṣara	the imperishable

The syllable is what does not wear away in recitation

The word is built from na, not, and *kṣara*, from the root *kṣar*, to flow away or perish. Joined, they give *akṣara*: what does not flow away, the imperishable. The same word is the ordinary name for a syllable. The grammatical tradition keeps both senses together. A verse quoted in the Mahābhāṣya says: know the *akṣara* as what does not perish, *akṣaraṃ* na *kṣaraṃ vidyāt*. A syllable can be chanted a thousand times and remain itself. That is why the tradition could call it imperishable.

The Hidden Negation

> **6.3.73**
> नलोपो नञः
>
> *nalopo nañaḥ*
>
> In a compound, the n of the negative na is dropped: na + *kṣara* becomes *a-kṣara*.
> AṢṬĀDHYĀYĪ 6.3.73

How does na become a single a? Pāṇini gives the rule. In a compound, the n of the negative particle is dropped. na plus *kṣara* becomes *akṣara*. The negation hides inside a single vowel. So the most sacred unit of the Veda carries a hidden 'not' in its first sound: not perishing.

Story and Grammar

the missing link

IN THE RIDDLE	IN THE GRAMMAR
Verses rest on the *akṣara*	Verses are counted in syllables
Gods seated upon it	Metre is built on syllable counts
Imperishable	na + *kṣara*: nalopo *naña*ḥ
Know it, or the verse is useless	Analysis down to the smallest unit

Verses rest on the syllable, and every metre of the Veda is defined by its count of syllables: 8.11.12 to a line. The word for that unit carries its own explanation: not perishing, by a rule that hides the negation. And the warning of the riddle is the grammarian's creed. A person who knows the verse but not its units does not really know the verse.

The AI Lesson

the right smallest unit

THE RIDDLE	LANGUAGE MODELS
Verses rest on syllables	Text rests on its units
akṣara: the unit of script and metre	Syllable-aware tokens for Indic scripts
Unchanged by repetition	Stable, reusable units
Know the unit, know the verse	Units that match the language

A modern analogy, not a claim about the ancient text.

Every language model rests on its smallest units, the tokens it reads and writes. Indian scripts are written in *akṣaras*, syllable clusters, and work on Indic language processing has explored tokens that respect those clusters instead of cutting through them. A unit that stays the same however often it is used, like the syllable in recitation, makes learning stable. The riddle's question applies to machines too: if a system does not know the units its verses rest on, what will it do with the verse?

IN BRIEF

- The verses rest on the *akṣara*
- *akṣara*: syllable and imperishable
- A hidden 'not': nalopo *naña*ḥ

The verses rest on the akṣara, the seat of the gods in the highest heaven. The word means both the syllable and the imperishable, and a rule of Pāṇini hides the negation inside it. Know the smallest unit, and the verse opens.

CHAPTER 9

Speech Like a Loving Wife

Jāyeva Patye

जायेव पत्य

Now a verse of the Ṛgveda explains why some people see speech and others do not, though both look at the same words. Speech, it says, reveals her form to some, as a loving wife to her husband.

The Verse

> उत त्वः पश्यन्न ददर्श वाचम्
> उत त्वः शृण्वन्न शृणोत्येनाम्
> उतो त्वस्मै तन्वं वि सस्रे
> जायेव पत्य उशती सुवासाः
>
> *uta tvaḥ paśyan na dadarśa vācam*
> *uta tvaḥ śṛṇvan na śṛṇoty enām*
> *uto tvasmai tanvaṃ vi sasre*
> *jāyeva patya uśatī suvāsāḥ*
>
> One, looking, has not seen speech; one, hearing, does not hear her. But to another she reveals her form, as a loving, well-dressed wife to her husband.
>
> ṚGVEDA 10.71.4

The verse comes from the hymn of knowledge, the seventy-first of the tenth book, whose subject is speech and those who know it. One person, looking, has not seen speech. Another, hearing, does not hear her. But to another she opens her form, as a loving wife, finely dressed, to her husband.

Seeing Without Seeing

Patañjali's reading

Patañjali quotes this verse in the opening section of the Mahābhāṣya, among the reasons for studying grammar. He explains it plainly. One who sees, sees words, but does not see speech. One who hears, hears sounds, but does not hear speech. The words are in front of both of them. What is missing is knowledge of how the words

are made. To the one who knows the grammar, speech opens herself completely, as a wife to her husband. Nothing is hidden. So, he concludes, grammar is to be studied, so that speech may reveal herself to us.

The Grammar Inside the Verse

sandhi in jāyeva patya

jāyā + iva	like a wife
ā + i → e	the two vowels merge
jāyeva	
patye + uśatī	to the husband, loving
e → ay → a	before a vowel
patya uśatī	

To see the words, undo the joins

The verse itself shows why seeing is not enough. Look at *jāyeva*. It is two words, *jāyā* and iva, wife and like. The long *ā* and the short i have merged. They have become a single e. A reader who does not know the rule sees one strange word. Then patya *uśatī*. The first word is really patye, to the husband. Before a vowel, its final e becomes ay, and the y may then drop away, leaving patya. The forms on the page are not the words in the speaker's mind. Only someone who can undo these joins sees the words themselves. That is the seeing the verse is speaking of.

The Merger of Vowels

> **6.1.87**
> आद्गुणः
>
> *ād guṇaḥ*
>
> When a or *ā* is followed by another vowel, both are replaced by its *guṇa*: *ā* + i becomes e.
>
> AṢṬĀDHYĀYĪ 6.1.87

Pāṇini's rule for the first join is three syllables: *ād guṇaḥ*. Sūtra 6.1.87. When a or *ā* meets a following vowel, the two are replaced by a single *guṇa* vowel. *ā* and i become e. Another rule turns the final e of patye into ay before a vowel, and a third lets the y fall away. Three rules, and the verse is readable.

Story and Grammar

the missing link

IN THE VERSE	IN THE GRAMMAR
Looks, but does not see	Sees the joined surface only
Hears, but does not hear	Hears sound without analysis
Speech reveals her form	Words recovered by rule
To the one who knows	To the one who studies *vyākaraṇa*

To look without seeing is to read the joined surface of a text: *jāyeva*, patya, as if they were single words. To see is to recover the words beneath, by the rules of joining. The verse even proves its own point. It cannot be read correctly without the grammar it praises.

The AI Lesson

surface or structure

THE VERSE	AI SYSTEMS
Looking without seeing	Matching surface patterns
Joined forms on the page	Unsegmented Sanskrit text
Undoing the joins	Sandhi splitting
Speech reveals herself	Analysis that can be checked

A modern analogy, not a claim about the ancient text.

A machine reading Sanskrit faces the same choice. It can match patterns on the joined surface, or it can recover the words beneath. Splitting sandhi is a recognised problem in computational Sanskrit, and it is hard, because one surface can often be divided in more than one way. Systems that use the rules of joining can propose divisions that a scholar can check, step by step. Looking is cheap. Seeing, for a human or a machine, needs the grammar.

IN BRIEF

- Some look and do not see
- Speech reveals herself to the one who knows
- The verse needs the grammar it praises

Some look at speech and do not see her. Some hear and do not hear. To the one who knows the grammar, speech reveals her form, as a loving wife. And the verse cannot even be read without the rules it praises.

CHAPTER 10

Speech Sifted Like Flour

Saktum Iva Titaunā

सक्तुमिव तितउना

The same hymn now shows how that knowing is done: in the kitchen, with a sieve. The wise, it says, make speech with their minds, sifting it like barley flour.

The Verse

> सक्तुमिव तितउना पुनन्तो
> यत्र धीरा मनसा वाचमक्रत
> अत्रा सखायः सख्यानि जानते
> भद्रैषां लक्ष्मीर्निहिताधि वाचि
>
> *saktum iva titaunā punanto*
> *yatra dhīrā manasā vācam akrata*
> *atrā sakhāyaḥ sakhyāni jānate*
> *bhadraiṣāṃ lakṣmīr nihitādhi vāci*
>
> Where the wise made speech with their mind, cleansing it as barley flour is cleansed with a sieve, there friends recognise friendship; an auspicious mark is set on their speech.
>
> ṚGVEDA 10.71.2

The verse is the second of the hymn of knowledge, in the tenth book of the Ṛgveda. Where the wise made speech with their minds, cleansing it as barley flour is cleansed with a sieve, there friends recognise their friendship, and a fortunate mark is set upon their speech.

The Sieve

Patañjali's reading

Picture the household work. Coarse barley flour, saktu, is poured through a sieve, a titau. What is fine passes through. Husk and grit stay behind. In the same way, the verse says, the wise sift speech with the mind, keeping what is correct and setting aside what is not. Patañjali quotes this verse in the Mahābhāṣya. The friends

who recognise their friendship, he says, are those who know grammar, the *vaiyākaraṇas*. And the fortunate mark set on their speech is the grace of correct speech, which brings merit to the one who uses it.

A Vedic Form to Sift

vācam akrata

√kṛ	to make
a- … -ata	past, they, for themselves
akrata	the Vedic form
akurvata	Patañjali's gloss

A special rule for the mantras keeps the short form

The verse contains a word that itself needs sifting: akrata, they made. It is a past form of the root *kṛ*, to make, in the third person plural, with the middle ending ata. In classical Sanskrit, this exact form is not used. A later speaker would say akurvata, and that is how Patañjali explains it. Is akrata an error, then, to be sifted out? No. Pāṇini has a rule for it. The grammar keeps the old form, but marks exactly where it belongs: in the mantras.

The Rule for the Mantras

> **2.4.80**
> **मन्त्रे घसह्वरणशवृदहाद्वृच्कृगमिजनिभ्यो लेः**
>
> *mantre ghasahvaraṇaśavṛdahādvṛckṛgamijanibhyo leḥ*
>
> In the mantras, after these roots, including *kṛ*, the aorist sign is dropped: hence akrata.
>
> AṢṬĀDHYĀYĪ 2.4.80

The rule is *sūtra* 2.4.80. In the mantras, after a list of roots that includes *kṛ*, the sign of the aorist is dropped. The result is the short Vedic form, akrata. This is the sieve in action. It does not throw away the old word. It records the context in which it is correct.

Story and Grammar

the missing link

IN THE VERSE	IN THE GRAMMAR
Barley flour and a sieve	Correct and incorrect forms
The wise sift with the mind	Rules decide what passes
Friends recognise friendship	Grammarians recognise correct speech
akrata, kept by rule	Context-bound forms: chandasi, mantre

The sieve is grammar. It separates correct forms, *sādhu*, from wrong ones. But a good sieve has more than two outcomes. Some forms are correct only in a given setting, like the mantras, and grammar says so. The friends of the verse are those who share this standard, and can recognise one another by their speech.

The AI Lesson

filtering the data

THE VERSE	TRAINING DATA
Sifting the flour	Filtering training text
Husk set aside	Low-quality data removed
akrata kept, but labelled	Rare forms kept with their context
Fortune on clean speech	Better models from cleaner data

A modern analogy, not a claim about the ancient text.

Language models are trained on vast amounts of text, and much of it is noise. Builders filter it before training, and the quality of the filter shapes the model. A crude filter can also throw away what is rare but correct: old forms, dialects, poetry. Pāṇini's sieve shows the better way. Keep the rare form, and attach its context: correct in the mantras, not in daily speech. Sift with the mind, the verse says, not with a blunt instrument.

IN BRIEF

- Speech sifted like flour
- Grammar is the sieve
- Keep the rare form, and name its place

The wise sift speech like barley flour, with the mind for a sieve. Grammar is that sieve, and the grammarians are the friends who know one another by it. A good sieve keeps the rare form, and names the place where it belongs.

CHAPTER 11

Seven Rivers, Seven Cases

Sapta Sindhavaḥ

सप्त सिन्धवः

Now the god Varuṇa appears, with seven rivers flowing into a hollow, and Patañjali hears the cases of the noun in their sound. The rivers carry roles: who acts, what is acted on, with what, for whom, from where, whose, and where.

The Verse

सुदेवो असि वरुण
यस्य ते सप्त सिन्धवः
अनुक्षरन्ति काकुदम्
सूर्म्यं सुषिरामिव

sudevo asi varuṇa
yasya te sapta sindhavaḥ
anukṣaranti kākudaṃ
sūrmyaṃ suṣirām iva

You are a true god, Varuṇa, whose seven rivers flow into the palate, as into a hollow tube.

ṚGVEDA 8.69.12

The verse is from the eighth book of the Ṛgveda, addressed to Varuṇa, lord of the waters. You are a true god, Varuṇa, you whose seven rivers flow into the palate, as into a hollow tube.

Patañjali Hears the Cases

Mahābhāṣya, Paspaśā

Patañjali quotes this verse too, at the beginning of the Mahābhāṣya. The seven rivers, he says, are the seven case series of the noun. The *kākuda*, he explains, is the palate: the place where the tongue, *kāku*, is raised. So the seven case endings flow through the mouth of the speaker, as rivers flow into a channel. As fire enters a hollow tube and fills it, the endings fill the speaker's voice. The one in whom they flow

rightly is a true god, a sudeva. That, for Patañjali, is the reward of knowing grammar.

Seven Streams, Seven Roles

deva in the seven cases

devaḥ	1 · the god acts
devam	2 · the god is seen
devena	3 · by the god
devāya	4 · for the god
devāt	5 · from the god
devasya	6 · of the god
deve	7 · in the god

Each ending carries a role, wherever the word stands

Take the word deva, god, and send it down the seven rivers. *devaḥ*, the god acts. devam, the god is seen. devena, by the god. *devāya*, for the god. *devāt*, from the god. devasya, of the god. deve, in the god. The stem stays the same. Each river adds an ending, and each ending tells the listener what part the god plays in the sentence, wherever the word is placed.

Where the Sounds Are Made

> **1.1.9**
> तुल्यास्यप्रयत्नं सवर्णम्
>
> *tulyāsyaprayatnaṃ savarṇam*
>
> Sounds with the same place in the mouth and the same effort are homogeneous.
> AṢṬĀDHYĀYĪ 1.1.9

The verse also names a place in the mouth, the palate. Pāṇini's phonetics is built on such places. Sounds that share the same place of articulation and the same effort belong to one class. The palate gives i, c, *ś* and y; the throat gives a and k. Varuṇa's rivers flow into the palate; Pāṇini maps every river of sound to its place.

Story and Grammar

the missing link

IN THE VERSE	IN THE GRAMMAR
Seven rivers	Seven vibhaktis
Flowing into the palate	Spoken through the places of articulation
A hollow tube filled	One stem filled with endings
Sudeva: a true god	The knower of grammar

Seven rivers are seven case series. They flow through the mouth, where every sound has its place. A single stem is the channel; the endings fill it with roles. And the true god of the verse is, in the grammarian's reading, the one through whom these rivers flow without error.

The AI Lesson

roles, not positions

THE VERSE	LANGUAGE TECHNOLOGY
Seven case endings	Role labels on each word
Role marked on the word	Role-labelled training data
Word order is free	Robust to reordering
One stem, seven roles	Shared meaning, different functions

A modern analogy, not a claim about the ancient text.

In English, roles are signalled mostly by word order. Move the words and the meaning changes. In Sanskrit, the role travels with the word itself, in its ending. The sentence can be reordered and still mean the same. Language technology has a task for this, called semantic role labelling: deciding who did what to whom. Sanskrit marks those roles in the words themselves. Seven rivers, each carrying its own kind of meaning.

IN BRIEF

- Seven rivers, seven cases
- They flow through the palate, the places of sound
- The true god is the one who speaks them rightly

Seven rivers, flowing into the palate, are the seven cases of the noun. They pass through the places of sound that Pāṇini maps, and each carries a role. The true god, in Patañjali's reading, is the one in whom they flow rightly.

CHAPTER 12

Speech Returns to the Singing Gods

Vāc and Soma

वाक् सोमश्च

Now speech is traded away, and won back. The gods give speech in exchange for Soma. To bring her home, they do not argue. They sing.

The Price of Soma

Śatapatha Brāhmaṇa 3.2.4

The story is told in the Śatapatha Brāhmaṇa, in its account of buying the Soma. Soma, the sacred plant, was held by the Gandharvas, beings of the air who love music and love women. The gods said: the Gandharvas are fond of women. Let us buy Soma with speech, Vāc, in the form of a woman. So they did. Soma came to the gods, and speech stayed behind with the Gandharvas. To win her back, the Gandharvas recited the Vedas to her. But the gods made the lute, the *vīṇā*, and sang. Speech turned away from the recitation, and went to the gods who sang.

Why She Chose the Song

pitch inside speech

Why should speech prefer the singers? The story does not explain itself, but the grammar suggests an answer. Speech is not only sounds in a row. It rises and falls. It has pitch. Every word of the Veda is recited with its own pitch accent, and the tradition guards those pitches as carefully as the sounds. The song of the gods was speech with its music intact. That is the form in which she felt at home.

The Three Pitches

> **1.2.29–31**
> **उच्चैरुदात्तः · नीचैरनुदात्तः · समाहारः स्वरितः**
>
> *uccair udāttaḥ · nīcair anudāttaḥ · samāhāraḥ svaritaḥ*
>
> High is *udātta*; low is *anudātta*; the two combined are svarita.
>
> AṢṬĀDHYĀYĪ 1.2.29–31

Pāṇini defines the pitches of speech in three short rules. uccair *udāttaḥ*: a vowel pronounced high is *udātta*. *nīcair anudāttaḥ*: pronounced low, it is *anudātta*. *samāhāraḥ svaritaḥ*: one that combines the two is svarita, the falling tone. These are the pitches whose misuse cost Tvaṣṭṛ his son in Chapter 3. Here they are the music that brings speech home.

From Pitch to Music

> उदात्ते निषादगान्धारौ
> अनुदात्त ऋषभधैवतौ
> स्वरितप्रभवा ह्येते
> षड्जमध्यमपञ्चमाः
>
> *udātte niṣādagāndhārāv*
> *anudātta ṛṣabhadhaivatau*
> *svaritaprabhavā hy ete*
> *ṣaḍjamadhyamapañcamāḥ*
>
> In the high pitch are the notes ni and ga; in the low, ri and dha; from the falling pitch arise sa, ma and pa.
>
> PĀṆINĪYA ŚIKṢĀ

The phonetic manual of the Pāṇinian school then joins grammar to music. In the high pitch lie the notes *niṣāda* and *gāndhāra*; in the low, *ṛṣabha* and dhaivata; from the falling pitch arise *ṣaḍja*, madhyama and *pañcama*. The seven notes of music grow out of the three pitches of speech.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Speech traded for Soma	Speech can be separated from its use
Gandharvas recite	Sounds without their music
Gods sing with the *vīṇā*	*udātta*, *anudātta*, svarita
Speech returns	Seven notes from three pitches

The Gandharvas offer the words. The gods offer the words with their music. Grammar agrees that the music is part of the word. Pāṇini defines it, and the Śikṣā derives

the musical scale from it. Speech returns to those who keep her whole: sound and pitch together.

The AI Lesson

prosody matters

THE STORY	SPEECH TECHNOLOGY
Words without music	Flat, robotic synthetic speech
Pitch as part of the word	Prosody modelling
Three pitches, seven notes	Explicit pitch features
Speech goes to the singers	Listeners prefer natural prosody

A modern analogy, not a claim about the ancient text.

Early speech synthesisers produced the right sounds in a flat, mechanical voice. Listeners understood, but did not warm to them. Modern systems model prosody: the rise and fall of pitch, the timing and stress that make a voice sound alive. For a pitch-accented language like Vedic Sanskrit, the pitch is not decoration. It is part of the word, as Pāṇini's three rules state. Like the Gandharvas, a system that offers only the words will find that speech goes elsewhere.

IN BRIEF

- Speech traded, and won back by song
- Pitch is part of the word
- Three pitches; seven notes

Speech was traded for Soma, and won back by song. In grammar, pitch is part of the word: high, low, and falling. From those three pitches, the tradition says, the seven notes of music arise.

CHAPTER 13

Deeds Become Names

Vṛtrahan, Purandara

वृत्रहा पुरन्दरः

Now the god Indra acts, and his actions become his names. He slays Vṛtra, and is called the slayer of Vṛtra. He breaks the forts, and is called the fort-breaker. And Pāṇini writes those names into his rules.

Indra's Deeds

Ṛgveda 1.32

In the Ṛgveda, the serpent Vṛtra lies coiled around the mountains, holding back the waters. Indra, drinking the Soma, takes up his thunderbolt, the vajra, and strikes him down. The waters run free, like lowing cows, to the sea. The thirty-second hymn of the first book sings the whole battle. Elsewhere Indra breaks open the strongholds of his enemies, fort after fort. And the poets name him by what he has done: *vṛtrahan*, slayer of Vṛtra; purandara, breaker of forts.

Slayer of Vṛtra

vṛtra + √han + kvip

vṛtra	the object
√han	to slay
kvip	a suffix with no sound
vṛtrahan	nominative *vṛtrahā*

A suffix that leaves no sound, yet makes a name

Pāṇini forms the first name exactly. Take *vṛtra*, the object, and the root han, to slay. Add the suffix kvip. Every sound of this suffix is a marker, and all of it disappears. What is left is *vṛtrahan*, and in the nominative, *vṛtrahā*: the slayer of Vṛtra. A suffix with no sound at all still does its work. It turns a deed into the name of its doer.

The God in the Sūtra

> **3.2.87**
> **ब्रह्मभ्रूणवृत्रेषु क्विप्**
>
> *brahmabhrūṇavṛtreṣu kvip*
>
> After han with brahma, *bhrūṇa* or *vṛtra* as object, the suffix kvip: brahmahan, *bhrūṇahan*, *vṛtrahan*.
>
> AṢṬĀDHYĀYĪ 3.2.87

Now look at the rule that licenses it. Sūtra 3.2.87. When the root han has brahma, *bhrūṇa* or *vṛtra* as its object, the suffix kvip is added. Vṛtra is named inside the grammar itself. The rule is narrow by design. Not every slayer gets this form, only these. The story of Indra has been written into the machinery of word formation.

Breaker of Forts

pur + √*dṝ* + *khac*

pur	fort (object)
√*dṝ*	to break
khac	suffix
pur-am-dara	an inserted m
purandaraḥ	the fort-breaker

Two rules: one for the suffix, one for the inserted sound

The second name is built the same way. Take pur, fort, as the object, and the root *dṝ*, to tear or break. A rule of the third book, 3.2.41, adds the suffix khac after this root, in its causative form, when pur is its object. Then an extra sound appears inside the compound: pur becomes puram. The result is *purandaraḥ*, the breaker of forts. That inserted m is not an accident. Pāṇini records it in a separate rule, and names the word.

The Name in the Rule

> **6.3.69**
> **वाचंयमपुरन्दरौ च**
>
> *vācaṃyamapurandarau ca*
>
> *vācaṃyama* and purandara are also formed with the inserted m.
> AṢṬĀDHYĀYĪ 6.3.69

Sūtra 6.3.69. The words *vācaṃyama*, the one who restrains speech, and purandara are also formed with the inserted m. Indra's epithet is named outright in the rule.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Indra slays Vṛtra	3.2.87: *vṛtra* named in the rule
Slayer becomes a name	kvip: a silent suffix
Indra breaks the forts	3.2.41: khac after *dṝ*
Purandara	6.3.69: the name in the rule

Indra's deed, the slaying of Vṛtra, becomes a name, and the name becomes a rule. His siege of the forts becomes purandara, and Pāṇini records the word itself. Deed, name, rule: the myth survives inside the grammar, waiting for anyone who reads the *sūtras* closely.

The AI Lesson

names that explain themselves

THE STORY	AI AND KNOWLEDGE
vṛtrahan: slayer of Vṛtra	A name that encodes a relation
Deed + suffix = name	Compositional naming
Name traceable to deed	Explainable identifiers
Rule records the exceptions	Documented special cases

A modern analogy, not a claim about the ancient text.

Knowledge systems store facts as relations: who did what to whom. A Sanskrit epithet already is such a relation, packed into one word: Vṛtra, object; slaying, action; the bearer of the name, agent. A model that can analyse such a name can recover the

fact inside it, and explain where its answer came from. Names built by rule are names that can be unpacked. That is a property worth building into any knowledge system.

IN BRIEF

- Deeds become names
- *vṛtrahan* and purandara, written into the rules
- Deed, name, rule

Indra's deeds became his names. vṛtrahan and purandara are formed by rule, and named in the rules themselves. Deed, name, rule: the story is preserved in the grammar.

CHAPTER 14

The God Named by a Question

Ka

कः

Now the creator himself receives a name, and the name is a question. 'Who am I?', asks Prajāpati. The answer the tradition gives is: Who. Ka.

To Which God?

> हिरण्यगर्भः समवर्तताग्रे
> भूतस्य जातः पतिरेक आसीत्
> कस्मै देवाय हविषा विधेम
>
> *hiraṇyagarbhaḥ sam avartatāgre*
> *bhūtasya jātaḥ patir eka āsīt*
> *kasmai devāya haviṣā vidhema*
>
> The golden germ arose in the beginning; born, he was the one lord of what exists. To which god shall we offer with oblation?
>
> ṚGVEDA 10.121.1

The question appears first in a famous hymn of creation, the hymn to the golden germ, Hiraṇyagarbha, in the tenth book of the Ṛgveda. The golden germ arose in the beginning; once born, he was the one lord of all that is. To which god shall we offer our oblation? Nine verses end with that question.

'Who Am I?'

Aitareya Brāhmaṇa 3.21

The Brāhmaṇas turn the refrain into a story. The Aitareya Brāhmaṇa tells it in its third book. After the great victory over Vṛtra, Prajāpati, the lord of creatures, asks: and who am I? atha ko 'ham. The answer comes back: you are just what you have said. Who. tato vai ko *nāma prajāpatir* abhavat. From that, Prajāpati became Ka by name. A question word, ka, who, became the name of the creator. And the hymn's refrain could now be heard as an answer: to Ka, the god, we offer.

Pronoun or Name?

kim · kaḥ · kasmai

kim	who, what
kaḥ	who? (nominative)
kasmai	to whom? (dative)
Ka	the god's name
kāya	regular dative of a name

The hymn keeps the pronoun's ending: kasmai, not kāya

Now the grammar makes the story precise. ka comes from the interrogative pronoun kim, who or what. Its nominative is *kaḥ*, who. Its dative is kasmai, to whom. The ending smai belongs only to pronouns. But if Ka is a proper name, the name of a god, it is no longer a pronoun. An ordinary noun in a takes the dative *kāya*, as deva gives *devāya*. The hymn says kasmai *devāya*, with the pronoun's ending. Grammatically, the refrain still asks a question, even when the tradition hears a name in it.

The Pronoun's Ending

> **7.1.14**
> **सर्वनाम्नः स्मै**
>
> *sarvanāmnaḥ smai*
>
> After a pronoun stem in a, the dative singular ending is smai.
> AṢṬĀDHYĀYĪ 7.1.14

Pāṇini's rule: *sarvanāmnaḥ* smai. Sūtra 7.1.14. After a pronoun ending in a, the dative singular ending becomes smai: kasmai, tasmai, sarvasmai. And a *vārttika* adds the limit: words that have become names are not treated as pronouns. *saṃjñopasarjanībhūtās* tu na *sarvādayaḥ*. A god called Ka, taken strictly as a name, would take *kāya*.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
To which god shall we offer?	kasmai: pronoun, dative
Who am I?	*kaḥ*: interrogative
Ka becomes a name	A name is not a pronoun
kasmai *devāya*, heard as 'to Ka'	The form keeps the question

The hymn asks a question with a pronoun. The Brāhmaṇa turns the pronoun into a god. Grammar draws the line between the two: a pronoun takes smai; a name takes the ordinary ending. So the refrain holds both at once. Its form is a question, and its tradition is an answer. The not-knowing itself became the name of the highest.

The AI Lesson

when a word changes category

THE STORY	LANGUAGE TECHNOLOGY
ka: pronoun	A function word
Ka: proper name	A named entity
The ending shows which	Morphology as evidence
kasmai keeps the question	Form and reading can differ

A modern analogy, not a claim about the ancient text.

Language technology constantly asks what category a word belongs to. Is 'who' a question here, or a name? Is 'Apple' a fruit or a company? In English, capital letters and context are the clues. In Sanskrit, the ending itself is evidence: kasmai is a pronoun's form, *kāya* would be a name's. A system that reads endings can see when a reading goes beyond what the form says. That is the lesson of Ka: the form and the interpretation can differ, and good analysis keeps track of both.

IN BRIEF

- Who am I? — Who: Ka
- kasmai: the pronoun's ending
- Form and reading, kept apart and together

Prajāpati asked, 'who am I?', and became Ka, Who. The hymn's kasmai keeps the pronoun's ending, and so keeps the question alive inside the name. Grammar lets us see both: the form, and the reading the tradition gave it.

CHAPTER 15

The Child Who Cried

Rudra

रुद्रः

Now a newborn child cries, and asks to be named. He is named for what he has just done: he cried, so he is Rudra.

A Boy Is Born

Śatapatha Brāhmaṇa 6.1.3

The story is told in the Śatapatha Brāhmaṇa, in its sixth book, among the rites of building the fire altar. Prajāpati, the lord of creatures, was creating, and a boy was born. The boy began to cry. Prajāpati asked him: why do you cry, when you have been born out of toil and austerity? The boy said: I have not been freed from evil. I have no name. Give me a name. Prajāpati said: because you cried, you are Rudra. yad *arodīs tasmād rudraḥ*. The boy cried again, and asked again, and received further names, Śarva, Paśupati, Ugra and others, until he had nine forms. They are the forms of Agni, the fire.

The Rule of the Rite

> तस्मात्पुत्रस्य जातस्य नाम कुर्यात्
>
> *tasmāt putrasya jātasya nāma kuryāt*
>
> Therefore one should give a name to a son when he is born.
>
> ŚATAPATHA BRĀHMAṆA 6.1.3.9

And from the story, the text draws a rule for human life. The naming ceremony of every child repeats the first naming: a name frees the newborn from the nameless state in which the boy cried.

Name from the Deed

√rud · arodīt · rudra

√rud	to cry, weep
arodīt	he cried (past)
rud + ra	an Uṇādi suffix
rudra	the one who cries

A nirvacana: the name explained by the deed

The grammar of the name is in plain view. The root is rud, to cry or to weep. Its past form, *arodīt*, he cried, is the word Prajāpati uses. The grammarians' word lists derive rudra from the same root with a suffix ra. This list is called the Uṇādi, after its first suffix, *uṇ*. So the deed, the verb and the name share one root: rud, *arodīt*, rudra. Explaining a name through an action like this is called nirvacana. The Brāhmaṇas do it again and again, and the grammar gives it a formal footing.

Many Suffixes, Variously

> **3.3.1**
> उणादयो बहुलम्
>
> *uṇādayo bahulam*
>
> The suffixes beginning with *uṇ* apply variously, especially in names.
>
> AṢṬĀDHYĀYĪ 3.3.1

How does Pāṇini make room for such names? With one rule. Sūtra 3.3.1. Names like rudra are formed by suffixes that do not follow strict conditions. The word bahulam, variously, tells the user to accept them as they are found, and still to analyse them into root and suffix.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
The newborn cries	√rud, to cry
'Give me a name'	A name is needed for a person to exist socially
'You cried: Rudra'	rud + ra, an Uṇādi formation
Name every son at birth	Naming governed by rule

The child's cry is the root. The father's answer is the analysis. The name is root plus suffix. And just as the story becomes the rule of the naming rite, the name becomes an entry in the grammar, under a rule that says: apply variously.

The AI Lesson

name at creation

THE STORY	AI SYSTEMS
The child without a name cries	Unlabelled data is hard to trust
Named at birth	Metadata attached at creation
The name tells the origin	Provenance you can trace
bahulam: accept, then analyse	Handle irregular names by pattern

A modern analogy, not a claim about the ancient text.

In AI systems, data and generated content without a record of their origin are hard to trust. Good practice gives every item a name and a record at the moment it is created, as the Brāhmaṇa says a son should be named at birth. A name that says where something came from, like rudra from rud, lets anyone trace it back. And Pāṇini's bahulam is a reminder for any system: irregular names will come; accept them, and still analyse them.

IN BRIEF

- He cried, so he is Rudra
- Name every child at birth
- *uṇādayo* bahulam: names by root and suffix

The child cried, and was named Rudra, the one who cried. The story made a rule: name every child at birth. And the grammar keeps the name: root rud, a suffix, applied variously.

CHAPTER 16

Mind and Speech Quarrel

Manas and Vāk

मनो वाक् च

Now two great powers quarrel: Mind and Speech. Each claims to be the better. They take their case to the creator, and the judgement he gives sits at the heart of Pāṇini's grammar of roles.

The Quarrel

Śatapatha Brāhmaṇa 1.4.5.8–12

The story is told in the Śatapatha Brāhmaṇa, in its first book. Mind and Speech were disputing which of them was the better. Mind said: I am better than you. You do not utter anything that I have not first understood. You only imitate what I do, and follow in my track. Speech replied: I am better than you. Whatever you know, I make known. I make it understood. They went to Prajāpati for a decision. He decided in favour of Mind: Speech, he said, only imitates Mind, and follows in its track. Speech was offended. She said: then I will never be the bearer of your oblation. And so, the text says, whatever is offered to Prajāpati in the sacrifice is spoken in a low voice.

The Judgement

speech follows mind

The judgement is simple. First the mind grasps a thing; then speech expresses it. Speech can only say what the mind has first shaped. She follows in its track. We saw the same order in Chapter 6, in the Pāṇinīya Śikṣā: the self joins the mind with the wish to speak, and only then does the breath produce sound. But Speech is not powerless. Offended, she withdraws from one part of the rite, and that part is spoken low ever after. The judgement has a cost.

The Mind Chooses the Role

vivakṣā: the wish to say

devadattaḥ pacati	Devadatta cooks
kāṣṭhaiḥ pacati	he cooks with firewood
kāṣṭhāni pacanti	the firewood cooks
sthālī pacati	the pot cooks

vivakṣātaḥ kārakāṇi: roles follow what the speaker means to present

Pāṇini's grammar gives Mind the same priority. Take one event: Devadatta cooks rice in a pot over firewood. *devadattaḥ* pacati. The speaker can present the firewood as the instrument: *kāṣṭhaiḥ* pacati, he cooks with firewood. Or the speaker can present the firewood as the agent: *kāṣṭhāni* pacanti, the firewood cooks. Or even the pot: *sthālī* pacati, the pot cooks, when the speaker wants to say how well it holds the rice. The event does not decide the grammatical role. The speaker's intention, *vivakṣā*, does. The grammarians' maxim says: roles arise from what one wishes to say.

The Independent One

> **1.4.54**
> स्वतन्त्रः कर्ता
>
> *svatantraḥ kartā*
>
> The one presented as independent in the action is the agent.
> AṢṬĀDHYĀYĪ 1.4.54

Pāṇini defines the agent in two words. Sūtra 1.4.54. Not the one that is independent in the world, but the one the speaker presents as independent. A pot can be the agent, if the mind of the speaker makes it so. Prajāpati's judgement, written as grammar: Mind assigns the roles, and Speech expresses them.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Mind: speech follows me	*vivakṣā*: the wish to say comes first
Speech: I make known	Forms express the chosen roles
Prajāpati decides for Mind	1.4.54: the agent is as presented
Speech keeps her power	The form must still be right

Mind comes first: the speaker decides what to present as agent, instrument, or place. Speech then expresses those roles in the endings and verb forms. And Speech keeps her power, as in the story. If the form is wrong, the intention is lost, however clear the mind may be.

The AI Lesson

intent before output

THE STORY	AI SYSTEMS
Mind grasps first	Plan or intent
Speech follows mind	Generated text follows the plan
Roles chosen by the speaker	Framing chosen by the system
Speech withdraws when slighted	Output quality still matters

A modern analogy, not a claim about the ancient text.

Many AI systems are now built to plan first and write second: decide what is to be said, then generate the words. That is Prajāpati's order: mind, then speech. Pāṇini adds a subtlety that matters for such systems. The same facts can be framed in different ways, and the framing is a choice made before the words. But the story also warns the planners. Neglect the speech, and she withdraws: a good plan badly expressed is still a failure.

IN BRIEF

- Mind is judged the greater
- *vivakṣā* chooses the roles
- Speech must still express them rightly

Prajāpati judged Mind the greater, for speech follows mind. In Pāṇini's grammar, the speaker's intention chooses the roles: even a pot can be an agent. But speech keeps her power. The roles must still be expressed rightly.

CHAPTER 17

Cloud or Demon?

Vṛtra

वृत्रः

Now two schools of interpreters quarrel over a single name: Vṛtra, the enemy Indra slew. Was he a demon, the son of Tvaṣṭṛ? Or was he a cloud? The oldest surviving work on Vedic words records both answers.

Two Schools

> तत्को वृत्रः
> मेघ इति नैरुक्ताः
> त्वाष्ट्रोऽसुर इत्यैतिहासिकाः
>
> *tat ko vṛtraḥ*
> *megha iti nairuktāḥ*
> *tvāṣṭro 'sura ity aitihāsikāḥ*
>
> Who, then, is Vṛtra? 'A cloud', say the etymologists. 'An Asura, son of Tvaṣṭṛ', say the story-tellers.
>
> NIRUKTA 2.16

Yāska, in his Nirukta, the science of explaining Vedic words, asks the question directly. Who, then, is Vṛtra? A cloud, say the etymologists, the nairuktas. An Asura, the son of Tvaṣṭṛ, say the story-tellers, the *aitihāsikas*.

The Battle as a Figure

Nirukta 2.16

The story-tellers read the hymns as history: a real demon, a real war, Indra with his thunderbolt. The etymologists read the same hymns as nature: Vṛtra is the cloud that holds back the water, and Indra's lightning releases it. Yāska explains: when water and light mingle, rain is produced. The descriptions of battle are used by way of comparison. In other words, the war is a figure of speech for the coming of the monsoon rains. Yāska does not silence the story-tellers. He records both

schools by name. The tradition kept the story, and its linguistic reading, side by side.

Three Roots for One Name

Nirukta 2.17

√*vṛ*	to cover, enclose
√*vṛt*	to turn, roll
√*vṛdh*	to grow
vṛtra	the coverer

vṛtro vṛṇoter vā vartater vā vardhater vā

Then Yāska explains the name itself, and gives not one derivation, but three. Vṛtra may come from *vṛ*, to cover, because it covers the waters, or the sky. Or from *vṛt*, to roll, because it rolls along. Or from *vṛdh*, to grow, because it grew, as the story says it did after Tvaṣṭṛ's fire. *vṛtro vṛṇoter vā* vartater *vā* vardhater *vā*. Each root supports one way of seeing Vṛtra: cloud, coil, or growing demon.

All Nouns from Verbs?

Nirukta 1.12

नामान्याख्यातजानीति शाकटायनो नैरुक्तसमयश्च

nāmāny ākhyātajānīti śākaṭāyano nairuktasamayaś ca

Nouns are born from verbs: so says Śākaṭāyana, and this is the etymologists' doctrine.

NIRUKTA 1.12

Behind these derivations lies a bold principle, stated earlier in the Nirukta. All nouns are born from verbs: so says the grammarian Śākaṭāyana, and it is the etymologists' doctrine. Another teacher, Gārgya, disagreed: not every noun can be traced to a verb. Pāṇini's grammar inherits the debate. Many names are derived from roots by rule; others are accepted as given.

Story and Grammar

the missing link

THE STORY-TELLERS	THE ETYMOLOGISTS
Vṛtra, son of Tvaṣṭṛ	Vṛtra, the cloud
A war of gods and demons	Rain from water and light
vardhater: he grew	*vṛṇoter*: it covers
History	Language and nature

One reads a story of a demon and a war. The other reads a description of rain. Both readings are anchored in the same name, by different roots. That is the oldest lesson of Vedic interpretation: a story and its linguistic explanation can live together, and each is clearer for the other.

The AI Lesson

keep the alternatives

YĀSKA'S METHOD	AI SYSTEMS
Two schools, both recorded	Multiple readings, not one forced answer
Three roots offered	Candidate analyses ranked
Each reading named and sourced	Answers with attribution
Story and science side by side	Honest about uncertainty

A modern analogy, not a claim about the ancient text.

When a question has more than one defensible answer, an AI system faces a choice: pick one and sound certain, or show the alternatives. Yāska chose the second. He named each school, gave its reading, and offered three roots for one name. A system built the same way would say: here are the readings, here is who holds each, here is the evidence for each. That is not weakness. It is the most honest form of knowledge, and it is older than the Aṣṭādhyāyī.

IN BRIEF

- A demon, say the story-tellers
- A cloud, say the etymologists
- Yāska keeps both, with three roots

A demon, say the story-tellers. A cloud, say the etymologists. Yāska keeps both, and gives the name three roots: to cover, to roll, to grow. Story and analysis, side by side.

CHAPTER 18

Viṣṇu's Three Strides

Trivikrama

त्रिविक्रमः

Now Viṣṇu measures out the worlds in three great steps. The verb the Ṛgveda uses for his stepping has a rule of its own in Pāṇini, made for exactly this kind of stride.

The Strides

इदं विष्णुर्वि चक्रमे
त्रेधा नि दधे पदम्
समूळ्हमस्य पांसुरे

idaṃ viṣṇur vi cakrame
tredhā ni dadhe padam
samūḷham asya pāṃsure

Viṣṇu strode across this world; three times he set down his foot; it is hidden in his dust.

ṚGVEDA 1.22.17

The Ṛgveda praises Viṣṇu as the god who strides. One short verse in the first book says it all. Viṣṇu strode across this world. Three times he set down his foot. It is hidden in his dust.

What Are the Three Steps?

Nirukta 12.19

Later the Purāṇas tell this as the story of the dwarf Vāmana, who asks King Bali for three steps of land and covers the universe. But Yāska, in his Nirukta, records older readings. The teacher Śākapūṇi says the three steps are on the earth, in the mid-air and in the sky. The teacher Aurṇavābha says they are the sun's rising, its highest point, and its setting. Read that way, Viṣṇu's strides are the daily path of the sun across the heavens. Yāska explains the name too: Viṣṇu from *viś*, to enter, or from *vyaś*, to pervade. The one who enters and pervades everything.

The Verb of the Stride

vi + √*kram*

√*kram*	to step
krāmati	he steps: active
vi + √*kram*	to stride apart
vikramate	middle ending
vi cakrame	he strode (perfect)

The prefix and the sense of stepping choose the middle voice

Now the grammar. The root is kram, to step. Normally it takes active endings: *krāmati*, he steps. With the prefix vi, apart, it means to stride, to step out widely. And in that sense it takes the middle endings: vikramate. That is exactly what the verse has: vi cakrame, he strode, a perfect form with the middle ending e. The verse does not say *cakrāma*, with the active ending. The stride of Viṣṇu takes the middle voice.

The Rule for Striding

> **1.3.41**
> **वेः पदविहरणे**
>
> *veḥ padaviharaṇe*
>
> After kram with vi, in the sense of moving the feet, the middle endings are used.
> AṢṬĀDHYĀYĪ 1.3.41

Pāṇini has a rule for precisely this. Sūtra 1.3.41. After kram with the prefix vi, when the sense is the moving of the feet, the middle endings are used. The word for foot here is pada, the same word the verse uses: he set down his padam. Grammar and hymn share the very term.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Viṣṇu strides	vi + kram, sense of stepping
Three times he set his foot	*pada-viharaṇa*: moving the feet
vi cakrame	Middle endings by 1.3.41
Earth, air, sky; or the sun's path	One verb, several readings

Viṣṇu strides, and the grammar has a rule for striding: vi with kram, in the sense of moving the feet. The rule asks for the middle voice, and the hymn has it: vi cakrame. Whether the steps are earth, air and sky, or the sun's rising, zenith and setting, the verb that carries them is measured as precisely as the worlds.

The AI Lesson

sense decides form

THE GRAMMAR	AI SYSTEMS
kram: step	One word, several senses
vi + kram as striding	Sense identified in context
Middle voice for that sense	Form chosen by the sense
Rule names the sense	Disambiguation before generation

A modern analogy, not a claim about the ancient text.

A language system that writes Sanskrit has to know not only the root, but the sense in which it is used. Here, the sense of moving the feet selects the middle voice. In another sense, the same root and prefix may behave differently. Engineers call the first step word-sense disambiguation: deciding which meaning is intended. Pāṇini made sense a condition inside the rule itself. For a generator, that means: understand first, then choose the form.

IN BRIEF

- Three strides across the worlds
- *veḥ padavikharaṇe*: the rule for striding
- Sense decides the form

Viṣṇu strode in three steps across the worlds, or across the sky with the sun. The verb of his stride takes the middle voice, by a rule written for stepping. In Sanskrit, the sense decides the form.

CHAPTER 19

Choosing a Son's Name

Nāmakaraṇa

नामकरणम्

Now a household rite: a father gives his son a name on the tenth day after birth. But the rules for that name are written in the language of phonetics and grammar. Without a grammarian's knowledge, the father cannot obey them.

The Rule of the Rite

> दशम्युत्तरकालं पुत्रस्य जातस्य नाम विदध्यात्
> घोषवदाद्यन्तरन्तस्थम्
> द्व्यक्षरं चतुरक्षरं वा
> नाम कृतं कुर्यान्न तद्धितम्
>
> *daśamyuttarakālaṃ putrasya jātasya nāma vidadhyāt*
> *ghoṣavadādy antarantastham*
> *dvyakṣaraṃ caturakṣaraṃ vā*
> *nāma kṛtaṃ kuryān na taddhitam*
>
> After the tenth day, one should give the newborn son a name: beginning with a voiced sound, with a semivowel inside, of two or four syllables; a kṛt formation, not a taddhita.
>
> ĀŚVALĀYANA GṚHYASŪTRA 1.15 · MAHĀBHĀṢYA, PASPAŚĀ

The rule comes from the household ritual manuals, and Patañjali quotes it in the opening of the Mahābhāṣya. After the tenth day, give the newborn son a name. It should begin with a voiced sound, have a semivowel within it, and have two or four syllables. Make it a *kṛt* formation, not a taddhita.

A Father's Problem

why Patañjali quotes it

Imagine the father on the tenth day, choosing his son's name. The first sound must be voiced, *ghoṣavat*: a g, a d, a b, not a k, t or p. Inside the name there must be a semivowel, an *antaḥstha*: y, r, l or v. The name must have two syllables, or four.

An even count. And it must be a *kṛt* formation, made directly from a verbal root, not a taddhita, made from another noun. Patañjali draws the conclusion: without grammar, one cannot tell a *kṛt* from a taddhita. So grammar must be studied.

Two Kinds of Derived Words

kṛt and taddhita

√dā + kta	root + *kṛt* suffix
datta	given
daśaratha + iñ	noun + taddhita suffix
dāśarathi	son of Daśaratha

kṛt: from a root. taddhita: from a noun.

What is the difference? A *kṛt* suffix is added directly to a verbal root. From *dā*, to give, with the suffix kta, comes datta, given. That is a *kṛt* formation. A taddhita suffix is added to a word that is already a noun. From Daśaratha, with the suffix *iñ*, comes Dāśarathi, the son of Daśaratha, which is a name of Rāma. Both look like ordinary words. Only analysis shows which layer of derivation they belong to. The rite asks for a name from the first layer: a word made from an action, not from another name.

The Two Classes in Pāṇini

> **3.1.93 · 4.1.76**
> कृदतिङ् · तद्धिताः
>
> *kṛd atiṅ · taddhitāḥ*
>
> Suffixes after roots, other than verbal endings, are *kṛt*; the suffixes from 4.1.76 on are taddhita.
>
> AṢṬĀDHYĀYĪ 3.1.93 · 4.1.76

Pāṇini defines both classes. Sūtra 3.1.93: *kṛd atiṅ*. A suffix taught after a root, other than a verbal ending, is called *kṛt*. And *sūtra* 4.1.76, *taddhitāḥ*, opens the long section of suffixes added to nouns, which are called taddhita. The name itself means 'good for that', for the thing the noun names.

Story and Grammar

the missing link

IN THE RITE	IN THE GRAMMAR
Begin with a voiced sound	*ghoṣavat*: the voiced class
A semivowel inside	*antaḥstha*: y, r, l, v
Two or four syllables	Counting *akṣaras*
kṛt, not taddhita	3.1.93 and 4.1.76

Every condition of the naming rule is a category of phonetics or grammar: voiced sounds, semivowels, syllables, and the two classes of derived words. A household rite thus presupposes the whole sound system and word system of the grammarians. That is why Patañjali counts it among the reasons to study grammar: even a father naming his son needs it.

The AI Lesson

constraints need categories

THE RITE	AI SYSTEMS
A name with conditions	Generation under constraints
Voiced, semivowel, syllables	Checks on sound and form
kṛt, not taddhita	Checks that need analysis
Without grammar, no check	Without structure, no verification

A modern analogy, not a claim about the ancient text.

Ask an AI system to generate a name with conditions like these, and two kinds of check are needed. Some are on the surface: the first sound, the syllable count. Those are easy to test. Others need analysis: is this word made from a root, or from another noun? A system that cannot derive words cannot check that. Patañjali's point holds for machines: constraints written in grammatical categories can only be met by a system that knows the grammar.

IN BRIEF

- A name for the newborn
- Voiced, semivowel, two or four syllables, *kṛt*
- Even naming a child needs grammar

A father names his son on the tenth day. Voiced at the start, a semivowel within, two or four syllables, and made from a root. Even this household rite needs the grammar.

CHAPTER 20

Two Registers of Speech

Yarvāṇas–Tarvāṇas

यर्वाणस्तर्वाणः

Now we meet seers who were perfect in knowledge, yet careless in everyday speech. Their careless phrase became their name. And at the altar, they never once made the mistake.

The Seers

> यर्वाणस्तर्वाणो नाम ऋषयो बभूवुः
> यद्वा नस्तद्वा न इति प्रयोक्तव्ये
> यर्वाणस्तर्वाण इति प्रयुञ्जते
> याज्ञे पुनः कर्मणि नापभाषन्ते
>
> *yarvāṇas tarvāṇo nāma ṛṣayo babhūvuḥ*
> *yad vā naḥ tad vā naḥ iti prayoktavye*
> *yarvāṇas tarvāṇa iti prayuñjate*
> *yājñe punaḥ karmaṇi nāpabhāṣante*
>
> There were seers named Yarvāṇas and Tarvāṇas. Where 'yad vā naḥ, tad vā naḥ' should be said, they said 'yarvāṇas tarvāṇaḥ'. But in the work of sacrifice, they did not speak wrongly.
>
> MAHĀBHĀṢYA · PASPAŚĀ

Patañjali tells it in the Mahābhāṣya: so it is heard. There were seers called Yarvāṇas and Tarvāṇas. Where one should say 'yad *vā naḥ*, tad *vā naḥ*', whatever is ours, that is ours, they said '*yarvāṇaḥ*, *tarvāṇaḥ*'. But in the work of sacrifice, they never spoke wrongly.

Perfect Seers, Loose Speech

Patañjali's point

Patañjali describes them with the highest praise: seers who had seen dharma directly, who knew what was near and far, who knew all that was to be known. Yet in ordinary talk they ran their words together loosely: *yarvāṇaḥ*, *tarvāṇaḥ*. At the sac-

rifice, they spoke every word exactly. Compare the Asuras of Chapter 4. They made their slip in the ritual battle itself, and were defeated. The seers kept two registers: relaxed speech among themselves, and exact speech where exactness was required. Patañjali uses them to show that correctness is tied to the setting.

What Went Wrong

yad vā naḥ → yarvāṇaḥ

yad vā naḥ	three words
d → r	a loose sound change
n → ṇ	after r, across words
yarvāṇaḥ	one blurred word

The n → ṇ change belongs inside one word only

Look at what their mouths did. The phrase is three separate words: yad, *vā*, *naḥ*. The d of yad became an r. Then, because an r came before it, the n of *naḥ* became the retroflex *ṇ*. Three words ran together into one: *yarvāṇaḥ*. The phrase became a word, and the word became the seers' name. The second change looks like a real Sanskrit rule. It is one, but the seers applied it across a word boundary, where it does not belong.

Inside One Word

> **8.4.1**
> **रषाभ्यां नो णः समानपदे**
>
> *raṣābhyāṃ no ṇaḥ samānapade*
>
> After r or *ṣ*, n becomes *ṇ*, within the same word.
>
> AṢṬĀDHYĀYĪ 8.4.1

After r or *ṣ*, an n becomes *ṇ*, within the same word. That is why we say *rāmeṇa* but devena. The last word of the rule, *samānapade*, in the same word, is exactly the condition the seers broke. One word of the *sūtra* marks the line between correct speech and their careless phrase.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
yad *vā naḥ* → *yarvāṇaḥ*	Rules applied across words
ṇ after r, across a boundary	8.4.1: only *samānapade*
Loose at home	Ordinary register
Exact at the altar	Ritual register: no *apabhāṣaṇa*

The seers' slip is a real rule used in the wrong domain: inside the word, it is required; across words, it is an error. And their habit shows two registers, which Patañjali distinguishes: ordinary speech, and the speech of the rite, where no wrong form is allowed. Knowing a rule includes knowing where it stops.

The AI Lesson

scope and register

THE SEERS	AI SYSTEMS
Right rule, wrong scope	Pattern over-applied by a model
samānapade: the boundary	Scope written into the rule
Relaxed at home	Casual mode
Exact at the altar	Strict mode for critical tasks

A modern analogy, not a claim about the ancient text.

Models that learn patterns from data often over-apply them, using a real pattern in a place where it does not hold. Pāṇini's rules carry their scope inside them: *samānapade*, within the same word. The boundary is part of the rule. The seers also teach a design principle. A system may be relaxed in casual conversation, but in medicine, law or code, where errors cost dearly, it should switch to an exact register. Loose at home, exact at the altar: that is a reasonable rule for machines too.

IN BRIEF

- yad *vā naḥ* became *yarvāṇaḥ*
- A real rule, used across a word boundary
- Loose at home, exact at the altar

The seers said yarvāṇaḥ for yad vā naḥ, and the phrase became their name. A real rule, applied across a boundary where it does not belong. Loose at home, exact at the altar.

CHAPTER 21

Oṃ Questioned by Grammarians

Gopatha

गोपथब्राह्मणम्

Now the most sacred sound of all, Oṃ, is put on trial, and the questions are the questions of a grammarian. What is its root? What is its stem? What gender, what case, what suffix, how many measures long?

The Questions

Gopatha Brāhmaṇa 1.1.24–27

The Gopatha Brāhmaṇa belongs to the Atharvaveda. In its first part, a group of questioners turn to the syllable Oṃ. We ask about Oṃ, they say, and they pose their questions one after another. What is its root, its *dhātu*? What is its stem, its *prātipadika*? Is it a noun or a verb? What is its gender, and its number? What is its case ending, its suffix, its accent? How many measures, *mātrās*, does it have? These are the technical terms of the grammarians, asked of the most sacred sound in the Veda. It is a remarkable scene: theology examined with the tools of grammar.

A Root for Oṃ

√āp or √av

√āp	to reach, obtain
it reaches all	the preferred answer
√av + man	to protect, an Uṇādi suffix
om	the alternative derivation

Two roots, both recorded: the method of Chapter 17 again

The text gives its answers. Its preferred root for Oṃ is *āp*, to reach or obtain: Oṃ is that which reaches everything. It also records another view, from the root av, to protect. That second derivation is the one found in the grammarians' list of Uṇādi suffixes, which forms om from av with the suffix man. A Brāhmaṇa, then, knows the grammarians' derivation, and weighs it against another. Two roots, both recorded, as Yāska recorded three for Vṛtra.

Oṃ Prolated

> **8.2.87**
> **ओमभ्यादाने**
>
> *om abhyādāne*
>
> Oṃ is prolated, made three measures long, at the beginning of a recitation.
> AṢṬĀDHYĀYĪ 8.2.87

And Pāṇini himself has a rule about Oṃ. Sūtra 8.2.87. At the beginning of a recitation, Oṃ is prolated: its vowel is held for three measures, written with a figure three: o3m. The question 'how many measures?' thus has a grammatical answer: in this position, three. The sacred syllable is inside Pāṇini's system, with its own rule.

Story and Grammar

the missing link

IN THE BRĀHMAṆA	IN THE GRAMMAR
What is its root?	*dhātu*: *āp*, or av
What suffix?	Uṇādi: man after av
How many measures?	8.2.87: three, at the start
Gender, number, case?	The questions of a grammar

Every question it asks has a place in the grammar: root, suffix, measure, gender, number, case. Some answers match the grammarians' own: the Uṇādi derivation, the three measures at the start. Scholars note that this Brāhmaṇa is late, and its questions may echo Pāṇini's system. Either way, it shows how deeply the grammar entered Vedic thought.

The AI Lesson

a checklist for any word

THE BRĀHMAṆA	LANGUAGE TECHNOLOGY
Root? Stem?	Lemma and morphemes
Gender? Number? Case?	Morphological features
Accent? Measures?	Prosodic features
Even Oṃ is analysed	No token is exempt from analysis

A modern analogy, not a claim about the ancient text.

The Gopatha's questions read like the fields of a modern morphological analyser: lemma, stem, features of gender, number and case, and prosody. Language tools for Sanskrit produce exactly such analyses for every word of a text. The scene also carries a principle. Even the most special token, the sacred syllable, is analysed with the same categories as every other word. A consistent analysis, applied to everything, is what makes a system trustworthy.

IN BRIEF

- Oṃ questioned like any word
- Root *āp*, or av with man
- Three measures at the start: 8.2.87

The sacred syllable was questioned like any word: root, stem, gender, case, measure. Its root may be āp, or av with a suffix, and Pāṇini prolates it at the start of a recitation. Even Oṃ has a grammar.

CHAPTER 22

The Metres Fly for Soma

Chandas

छन्दः

Now the metres of the Veda themselves become characters. They take wing and fly to heaven to fetch the Soma. Two of them return with fewer syllables. One returns with more, and that is why the metres have the lengths they have.

The Flight

Aitareya Brāhmaṇa 3.25–28 · Śatapatha 4.3.2

The story is told in the Aitareya Brāhmaṇa, with a parallel in the Śatapatha Brāhmaṇa. Soma was in heaven, and the gods sent the metres to fetch it. In the beginning, the text says, the metres had four syllables each. *caturakṣarāṇi* ha *vā* agre *chandāṃsy āsuḥ*. Jagatī flew first. She tired on the way, and came back having lost three of her syllables. Triṣṭubh flew next, and returned having lost one syllable. Then Gāyatrī flew, in the form of a bird. She brought back the Soma, and with it the four lost syllables. So she became eight-syllabled. tato *'ṣṭākṣarā gāyatry* abhavat.

Counting the Lines

syllables per line

gāyatrī	3 lines × 8
triṣṭubh	4 lines × 11
jagatī	4 lines × 12
24 · 44 · 48	syllables per verse

Metre is a count of akṣaras, line by line

The story explains real numbers. A Gāyatrī verse has three lines of eight syllables: twenty-four in all. A Triṣṭubh verse has four lines of eleven: forty-four. A Jagatī verse has four lines of twelve: forty-eight. These three are the great metres of the Ṛgveda, and the story ties each to a part of the Soma rite. Behind the myth lies a grammar of counting: a metre is defined by the number of syllables in each line, the *akṣaras* of Chapter 8.

A Line That Must Be Counted

> तत्सवितुर्वरेण्यम्
>
> *tat savitur vareṇyam* → *tat savitur vareṇiyam*
>
> As written, the first line of the Gāyatrī mantra has seven syllables. Read with vareṇiyam, it has the eight the metre requires.
>
> ṚGVEDA 3.62.10

The counting is not only theory. Take the most famous Gāyatrī verse of all, the Gāyatrī mantra. Its first line, as written, is tat savitur *vareṇyam*. Count it: tat, sa, vi, tur, va, re, *ṇyam*. Seven syllables. But the metre needs eight. Metrical analysis restores the line as *vareṇiyam*, with the y opened into a full syllable: eight. The metre itself tells us how the verse was pronounced by its poets. Grammar and metre check each other.

Story and Grammar

the missing link

IN THE STORY	IN THE SCIENCE OF METRE
Each metre began with four	Metres measured in syllables
Jagatī loses three, Triṣṭubh one	Lines of 12 and 11
Gāyatrī gains four: eight	Lines of 8
Soma fetched by the metres	Metre carries the rite

The myth is about syllables gained and lost. The science is about syllables counted. Both say the same thing: a metre is a number, and a line that breaks the number has lost something on its flight. In later centuries, Piṅgala turned this counting into a formal science, which we will meet again in Chapter 86.

The AI Lesson

constraints you can count

THE METRES	AI SYSTEMS
Eight syllables per line	A hard constraint on output
Count, then accept	Verify generated text by rule
vareṇiyam restores the count	Constraint reveals hidden structure
Metre and grammar check each other	Two independent checks

A modern analogy, not a claim about the ancient text.

Language models are often asked to write verse, and they often miss the metre, because they write in units that are not syllables. A metre is a perfect test: count the syllables in each line, and accept or reject. The Gāyatrī line shows something more. A constraint can reveal structure: the count told scholars how the word was once pronounced. Two independent checks, grammar and metre, catch errors that either alone would miss.

IN BRIEF

- The metres flew for Soma
- 8.11.12 syllables a line
- Metre and grammar check each other

The metres flew for Soma, and came back with eight, eleven and twelve syllables to a line. The myth explains the numbers, and the numbers explain how verses were pronounced. Metre and grammar check each other.

CHAPTER 23

Joined and Separated Speech

Saṃhitā and Pada

संहिता पदं च

Now teachers of the Ṛgveda meet to discuss a question every reciter faces: should the words be joined, or kept apart? They answer with the earth, the sky, and the space between.

Three Ways to Recite

Aitareya Āraṇyaka 3.1.3

In the Aitareya Āraṇyaka, the forest book of the Ṛgveda, teachers reflect on how the hymns are recited. One way is joined recitation, called nirbhuja: the words flow into each other, with all their sound changes at the junctions. Another is separated recitation, called *pratṛṇṇa*: each word spoken on its own, in its pure form. And there is a third way, between the two. The text assigns them to the worlds. Joined recitation is the earth; separated recitation is heaven; the way between is the mid-air. To recite is to move through the worlds.

The Definition

> यद्धि सन्धिं विवर्तयति तन्निर्भुजस्य रूपम्
> यच्छुद्धे अक्षरे अभिव्याहरति तत्प्रतृण्णस्य
>
> *yad dhi sandhiṃ vivartayati tan nirbhujasya rūpam*
> *yac chuddhe akṣare abhivyāharati tat pratṛṇṇasya*
>
> When one makes the junction, that is the form of the joined; when one utters the two sounds pure, that is the form of the separated.
>
> AITAREYA ĀRAṆYAKA 3.1.3

The text defines the two precisely. When one produces the junction, that is the form of the joined. When one utters the two sounds in their pure forms, that is the form of the separated.

The Interval

Aitareya Āraṇyaka 3.1.5

A later section goes deeper. Every junction has three parts: the earlier sound, the later sound, and the interval between them. Take any two words that meet. The last sound of one, the first sound of the next. The teacher Hrasva Māṇḍūkeya explains that the interval is what decides how they join. It is by this, he says, that one produces the junction, distinguishes accented from unaccented, and separates long from short. Teachers of the forest books were already analysing sandhi, accent and length: the three things the grammarians would later describe by rule.

The Closest Proximity

> **1.4.109**
> परः संनिकर्षः संहिता
>
> *paraḥ saṃnikarṣaḥ saṃhitā*
>
> The closest proximity of sounds is called *saṃhitā*.
>
> AṢṬĀDHYĀYĪ 1.4.109

Pāṇini defines joined speech in one rule. Sūtra 1.4.109. The closest proximity of sounds is called *saṃhitā*. When sounds are as close as they can be, the rules of junction apply. The forest teachers spoke of an interval between sounds. Pāṇini speaks of their closeness. The word *saṃhitā* names both the joined text, and the condition under which sounds join.

Story and Grammar

the missing link

IN THE ĀRAṆYAKA	IN THE GRAMMAR
nirbhuja: joined, the earth	*saṃhitā-pāṭha*: the joined text
pratṛṇṇa: separated, heaven	*pada-pāṭha*: word by word
The interval between sounds	1.4.109: closest proximity
Junction, accent, length	Sandhi, svara, *mātrā* rules

Their joined recitation is the *saṃhitā* text; their separated recitation is the word-by-word text, the *padapāṭha*, which the tradition preserved alongside it. Their interval is Pāṇini's proximity. Their three concerns, junction, accent and length, are three

whole chapters of rules. Recitation practice and grammar grew from the same close listening.

The AI Lesson

keep both views

THE ĀRAṆYAKA	LANGUAGE TECHNOLOGY
Joined recitation	Running text as written
Separated recitation	Segmented, analysed text
Both kept by the tradition	Parallel aligned representations
The interval decides	Boundaries carry information

A modern analogy, not a claim about the ancient text.

Computational work on Sanskrit uses both of the forest teachers' forms: the joined text as it is written, and the separated text with each word restored. Keeping the two side by side, aligned, lets a system learn how one turns into the other. The Vedic tradition did exactly this, preserving the joined and the word-by-word recitations together for centuries, each a check on the other. And the forest teachers' insight still holds: the boundary between two units is not empty. It carries the information that decides how they join.

IN BRIEF

- Joined: the earth. Separated: heaven
- The interval decides the junction
- *paraḥ saṃnikarṣaḥ saṃhitā*

Joined recitation is the earth, separated recitation is heaven, and the way between is the mid-air. Between any two sounds lies an interval that decides how they join. Pāṇini calls their closest proximity saṃhitā.

CHAPTER 24

The Body Made of Sounds

Varṇa-Śarīra

वर्णशरीरम्

Now the same forest book turns inward, to the human body. A teacher maps the body onto the four classes of sound: breath, bone, marrow and flesh.

The Teacher's Map

Aitareya Āraṇyaka 3.2.1

In the Aitareya Āraṇyaka, after a teacher has called breath the beam that holds the whole self, the teacher Hrasva Māṇḍūkeya gives a map. Of this self, he says, the breathing is like the sibilants. The bones are like the stops. The marrow is like the vowels. And flesh and blood are like the semivowels. Four classes of sound, four layers of the body.

Why These Pairs?

sound and body

The pairs are not random. The sibilants, *ś*, *ṣ*, s and h, are made with a stream of breath. They are breath made audible. The stops, k, t, p and the rest, are made by closing the mouth completely. They are the hard frame of speech, like bones. The vowels are open and continuous, and every syllable is built around one. They are the living core, like marrow. The semivowels, y, r, l, v, lie between vowels and consonants. Like flesh, they connect the frame to the core. The forest teacher reads the body as a text of sounds, and the sounds as a living body.

Pāṇini's Four Classes

named by pratyāhāra

ac	vowels: marrow
yaṇ	semivowels: flesh
jhay	stops: bone
śal	sibilants: breath

Short names for whole classes, cut from the Śivasūtras

Pāṇini names the same classes, with short labels cut from his list of sounds, the Śivasūtras. All the vowels are ac. The semivowels are *yaṇ*. The stops, apart from the nasals, are jhay. The sibilants with h are *śal*. Each label is made from a first sound and a final marker in the list, and names everything in between.

How the Labels Work

> **1.1.71**
> आदिरन्त्येन सहेता
>
> *ādir antyena sahetā*
>
> A first sound, together with a final marker, names itself and all the sounds in between.
>
> AṢṬĀDHYĀYĪ 1.1.71

The rule that makes these labels is *sūtra* 1.1.71. A first sound, taken with a final marker, names itself and every sound between them. a with the marker c gives ac: all the vowels. With four such labels, the whole body of sounds is divided as the forest teacher divided the human body.

Story and Grammar

the missing link

THE BODY	THE SOUNDS
Marrow	Vowels: ac
Flesh and blood	Semivowels: *yaṇ*
Bones	Stops: jhay
Breath	Sibilants: *śal*

Marrow and vowels, flesh and semivowels, bones and stops, breath and sibilants. The forest teacher's four layers match the four classes that phonetics and grammar distinguish. The text makes no claim to be grammar. But it shows that the classes of sound were vivid enough to be felt as the structure of a living being.

The AI Lesson

classes, not just items

THE GRAMMAR	AI SYSTEMS
Sounds grouped in classes	Features shared by many symbols
One label names a class	One rule covers many cases
Body mapped to sounds	Structure shared across domains
Classes from articulation	Features grounded in the physical

A modern analogy, not a claim about the ancient text.

Speech systems represent sounds not only as separate symbols, but by shared features: voiced or not, stop or continuant, where in the mouth. A rule stated over a class, like Pāṇini's labels, applies to every member at once. A model that learns classes learns faster than one that learns each sound alone. And the forest teacher's map shows another useful idea: features grounded in the body, in how sounds are physically made, generalise well. Breath, bone, marrow, flesh: a feature system, felt from the inside.

IN BRIEF

- Breath, bone, marrow, flesh
- Sibilants, stops, vowels, semivowels
- ac, *yaṇ*, jhay, *śal*

Breath, bone, marrow and flesh: the forest teacher's body of sound. Sibilants, stops, vowels and semivowels: the phonetic classes. And Pāṇini's four labels name them all.

CHAPTER 25

Days, Nights and Junctions

Saṃdhi

सन्धिः

Now a second teacher of the same forest book maps the year. He counts three kinds of units, three hundred and sixty of each, and gives the third kind a name that every student of Sanskrit fears: saṃdhi.

The Year in Sound

Aitareya Āraṇyaka 3.2.2

In the Aitareya Āraṇyaka, the teacher Kauṇṭharavya speaks of the great recitation of the rite. There are three hundred and sixty vowels, he says. They are the days. There are three hundred and sixty consonants. They are the nights. And there are three hundred and sixty junctions, *saṃdhis*. They are the joinings of day and night: dawn and dusk. Then he turns to the body. The vowels are the bones, the consonants the marrow, and the junctions are the joints. Three hundred and sixty of each, as the year has three hundred and sixty days.

The Third Unit

the junction

Notice the bold step the teacher takes. He does not count only vowels and consonants. He counts the meeting points as units of their own, as real as the sounds they join. Dawn is neither day nor night, but it is a real time of its own. A joint is neither bone nor marrow, but the body cannot move without it. In the same way, the junction of sounds is neither one sound nor the other. It is a third thing, with its own rules.

A Junction at Work

iti + api

iti	thus
api	also
i + a	vowel meets vowel
y + a	i becomes y
ity api	the joined form

The junction changes the sound, not the words

Where they meet, a vowel i stands before a vowel a. At this junction, the i turns into the semivowel y. The result is ity api. Two words, still two words, but joined in sound. The junction is where the change happens. The teacher's third unit is the grammarian's busiest place.

The Rule of the Junction

> **6.1.77**
> **इको यणचि**
>
> *iko yaṇ aci*
>
> Before a vowel, i, u, *ṛ*, *ḷ* are replaced by y, v, r, l.
>
> AṢṬĀDHYĀYĪ 6.1.77

Pāṇini's rule for this junction is among the most famous in the grammar. Sūtra 6.1.77. In place of ik, the vowels i, u, *ṛ* and *ḷ*, comes *yaṇ*, the semivowels y, v, r and l, before ac, any vowel. Three short labels, and a rule that covers thousands of junctions. The teacher's three hundred and sixty joinings are governed by rules like this one.

Story and Grammar

the missing link

IN THE ĀRAṆYAKA	IN THE GRAMMAR
Vowels: the days	ac: the vowels
Consonants: the nights	hal: the consonants
Junctions: dawn and dusk	*saṃhitā* rules: sandhi
Joints of the body	The places where change happens

Vowels and consonants are Pāṇini's two great classes, ac and hal. The junction, which the teacher counted as a third unit, is the domain of the sandhi rules, which apply only in joined speech. The year has its dawns and dusks; the body has its joints; speech has its junctions. Each is where one thing turns into another.

The AI Lesson

boundaries are units

THE TEACHER	AI SYSTEMS
Days and nights	Two kinds of tokens
Dawn and dusk as units	Boundaries modelled explicitly
Joints let the body move	Transitions carry information
iko *yaṇ* aci	Rules at the boundary

A modern analogy, not a claim about the ancient text.

Many AI systems treat text as a row of tokens, and pay little attention to the joins between them. But in speech, and in Sanskrit text, the joins are where much of the information lies: a sound at a boundary can change both its neighbours. Speech synthesis and recognition systems model these transitions explicitly, because a voice that ignores them sounds broken. The forest teacher's lesson: count the junctions as units of their own.

IN BRIEF

- Vowels the days, consonants the nights
- Junctions: dawn and dusk
- iko *yaṇ* aci: the rule at the joint

Vowels are the days, consonants the nights, and junctions are dawn and dusk. The junction is a unit of its own, and Pāṇini gives it rules like iko yaṇ aci. Where things meet, things change.

CHAPTER 26

The Body as the Gods' Vīṇā

Daivī Vīṇā

दैवी वीणा

Now the same forest book makes a striking claim about music. The human body, it says, is a lute made by the gods, and every lute made by human hands is only a copy of it.

Three Classes, Three Worlds

Aitareya Āraṇyaka 3.2.5

The passage calls itself the Upaniṣad of the whole of speech. The stops, it says, are the earth. The sibilants are the sky between. The vowels are heaven. The stops are fire, the sibilants the wind, the vowels the sun. The stops are the Ṛgveda, the sibilants the Yajurveda, the vowels the Sāmaveda. And so on through the eye, the ear and the mind, and the breaths. Every layer of the world is built in three, and every three is matched to the three classes of sound.

The Divine Lute

daivī vīṇā

Then comes the image. This body, made by the gods, is a divine lute, a *daivī vīṇā*. The lute made by human beings is an imitation of it. As this has a head, so that has a head. As this has a stomach, so that has a hollow cavity in its board. As this has a tongue, so that has a tongue; as this has fingers, so that has strings. As this has vowels, so that has tones. As this has consonants, so that has touches. The human voice is the original instrument; the lute is its copy.

The Frets of the Voice

> अष्टौ स्थानानि वर्णानाम्
> उरः कण्ठः शिरस्तथा
> जिह्वामूलं च दन्ताश्च
> नासिकौष्ठौ च तालु च
>
> *aṣṭau sthānāni varṇānām*
> *uraḥ kaṇṭhaḥ śiras tathā*
> *jihvāmūlaṃ ca dantāś ca*
> *nāsikauṣṭhau ca tālu ca*
>
> Sounds have eight places: the chest, the throat, the head, the root of the tongue, the teeth, the nose, the lips, and the palate.
>
> PĀṆINĪYA ŚIKṢĀ

If the body is a lute, where are its frets? The phonetic manual of the Pāṇinian school lists them. Sounds have eight places: the chest, the throat, the head, the root of the tongue, the teeth, the nose, the lips, and the palate. Eight frets on the gods' lute.

Playing the Instrument

place and effort

throat	a, k
palate	i, c, *ś*, y
head	*ṛ*, *ṭ*, *ṣ*, r
teeth	*ḷ*, t, s, l
lips	u, p

Place, plus effort, defines each sound

Each place gives a family of sounds. The throat gives a and k. The palate gives i, c, *ś* and y. The roof of the head gives *ṛ*, *ṭ*, *ṣ* and r. The teeth give *ḷ*, t, s and l. The lips give u and p. Then the effort, prayatna, decides how the place is used: closed for a stop, half-open for a sibilant, open for a vowel. Place is the fret; effort is the touch.

Story and Grammar

the missing link

THE DIVINE LUTE	THE SCIENCE OF SOUND
The body as instrument	Places of articulation: *sthāna*
Strings and fingers	Tongue and lips: the movers
Tones	Vowels: open effort
Touches	Stops: *sparśa*, 'touch'

The body is the instrument, and the places of articulation are its frets. Even the words agree. The forest book says consonants are like touches on the lute. The phoneticians' name for a stop is *sparśa*: touch. The gods' lute is the vocal tract, and grammar is the art of playing it.

The AI Lesson

the original instrument

THE ĀRAṆYAKA	SPEECH TECHNOLOGY
The divine lute: the body	The human vocal tract
The human lute: a copy	Synthetic voices: copies
Eight places, many efforts	Articulatory features
Touches and tones	Consonants and vowels modelled

A modern analogy, not a claim about the ancient text.

Every synthetic voice, including the one narrating the companion videos, is a lute made by human hands, imitating the divine lute of the body. Some speech research models the vocal tract directly: tongue, lips, throat and their positions, the forest teacher's instrument in mathematics. The Pāṇinian phoneticians already described the voice by place and effort, the same kind of features such models use. The copy improves by studying the original.

IN BRIEF

- The body is the gods' lute
- Eight places: the frets of the voice
- *sparśa*: the touch on the string

The body is the gods' lute; every human lute is its copy. Its frets are the eight places of sound, and its touches are the stops. Grammar is the art of playing it.

CHAPTER 27

A Is All Speech

Akāro Vai Sarvā Vāk

अकारो वै सर्वा वाक्

Now the forest book makes its boldest claim: a single sound is the whole of speech. That sound is a, the first letter. And the very last rule of Pāṇini's grammar is about the same sound.

The Claim

> अकारो वै सर्वा वाक्
> सैषा स्पर्शोष्मभिर्व्यज्यमाना
> बह्वी नानारूपा भवति
>
> *akāro vai sarvā vāk*
> *saiṣā sparśoṣmabhir vyajyamānā*
> *bahvī nānārūpā bhavati*
>
> The sound a is the whole of speech. Made manifest by the stops and the sibilants, it becomes many and of many forms.
>
> AITAREYA ĀRAṆYAKA 2.3.6

The Aitareya Āraṇyaka says it in one line. The sound a is the whole of speech. Made manifest by the stops and the sibilants, it becomes many, and takes many forms.

One Sound, Many Forms

from the Āraṇyaka to the Gītā

Why a? It is the sound of the open throat, made with no closing and no narrowing at all. Every other sound shapes that open stream: the stops close it, the sibilants narrow it. And in the script, every consonant carries an a within it unless a mark removes it. ka, ga, ta: the a is always there. In the Bhagavad Gītā, Kṛṣṇa says: of letters, I am a. *akṣarāṇām akāro* 'smi. The commentators link it to this very line of the forest book. One sound as the source of all speech, as one reality is the source of all things.

A Secret in the Grammar

the closed a

Now the hidden grammar. Throughout the Aṣṭādhyāyī, Pāṇini treats the short a as an open sound, like the long *ā*. That lets the two count as the same kind of sound, and many rules become simpler. But in real pronunciation, the short a is not fully open. It is a closed, lighter sound. So at the very end, Pāṇini corrects his own convention with one final rule.

The Last Rule

> **8.4.68**
> अ अ
>
> *a a*
>
> The a treated as open throughout is restored to its real, closed pronunciation.
>
> AṢṬĀDHYĀYĪ 8.4.68

The last of nearly four thousand *sūtras* is *sūtra* 8.4.68. It has two letters. The a that was treated as open is to be pronounced as closed. The grammar ends by returning the first sound to its true form. The forest book says a is all speech. Pāṇini's grammar begins its list of sounds with a, and ends its rules with a.

Story and Grammar

the missing link

IN THE ĀRAṆYAKA	IN THE GRAMMAR
a is all speech	a opens the Śivasūtras: a i u *ṇ*
Shaped by stops and sibilants	Consonants carry an inherent a
Kṛṣṇa: of letters I am a	a treated as open, to unify rules
One sound, many forms	8.4.68 a a: the last rule

The Āraṇyaka calls a the whole of speech. Pāṇini's list of sounds opens with it: a i u *ṇ*. The grammar treats it in a simplified way, for the sake of its rules, and then restores it in its final line. Beginning and end: the whole grammar is framed by the sound the forest book called all of speech.

The AI Lesson

convenient abstraction, honest correction

PĀṆINI	AI SYSTEMS
a treated as open	A simplifying assumption
Rules become uniform	A cleaner model
a a: the final correction	Post-processing back to reality
Convention stated, then undone	Assumptions documented

A modern analogy, not a claim about the ancient text.

Engineers often simplify the world to make a system tractable: treat two slightly different things as the same, so that one rule covers both. The danger is forgetting the simplification when the output reaches the real world. Pāṇini shows the discipline. He states the convention, uses it everywhere it helps, and then, in the last rule, undoes it, so the spoken result is true. A good system documents its simplifications and corrects for them before it speaks.

IN BRIEF

- a is the whole of speech
- Of letters, I am a
- The grammar ends: a a

The sound a is the whole of speech, shaped into many forms. Kṛṣṇa calls himself the a among letters, and Pāṇini ends his grammar with it. a a: the last rule, returning the first sound to its true form.

Part II

Upaniṣads

Phonetics as contemplation

Chapters 28–46

CHAPTER 28

From Idandra to Indra

Indriya

इन्द्रियम्

Now we enter the Upaniṣads. The self looks at the world it has entered, and says: I have seen this. From that sentence comes a name, and from the name, a word you use every time you speak of the senses.

The Seeing

> इदमदर्शमिति
> तस्मादिदन्द्रो नाम
> तमिदन्द्रं सन्तमिन्द्र इत्याचक्षते परोक्षेण
> परोक्षप्रिया इव हि देवाः
>
> *idam adarśam iti*
> *tasmād idandro nāma*
> *tam idandraṃ santam indra ity ācakṣate parokṣeṇa*
> *parokṣapriyā iva hi devāḥ*
>
> 'I have seen this', he said. Therefore his name is Idandra. Though he is Idandra, they call him Indra, indirectly; for the gods love the indirect.
>
> AITAREYA UPANIṢAD 1.3.13–14

The Aitareya Upaniṣad tells how the self, having created the worlds and entered the human body, looked out and saw the whole of reality. 'I have seen this', he said. Therefore his name is Idandra, 'this-seer'. Though he is Idandra, people call him Indra, indirectly; for the gods love what is indirect.

The Gods Love the Hidden

parokṣapriyā devāḥ

The moment is one of wonder. The text marks it in its recitation: the last vowel of *adarśam* is held long, three measures, the sound of a person pausing in amazement. The name Idandra is built from that sentence: idam, this, and the root *dṛś*, to see. The one who sees this. Then the name is shortened to Indra, the

familiar name of the king of the gods. Why the shortening? Because, the Upaniṣad says, the gods love the indirect, the veiled. They prefer a name that hides its meaning. The real Indra, then, is the seeing self. The god of the hymns is its veiled name.

Indra and the Senses

indra → indriya

indra	the self, the seer
+ iya	suffix
indriya	a sense faculty
eye, ear, mind	the self's instruments

Each sense is the mark of Indra: the self

Now the grammar, and it reaches into ordinary speech. The Sanskrit word for a sense faculty is indriya. It is formed from Indra with a suffix. Pāṇini lists it as a special form, with a set of meanings. The first meaning he gives is *indraliṅgam*: the mark of Indra. Read with the Upaniṣad, the meaning opens: the eye, the ear, the mind are the marks of the self, the seer who said 'I have seen this'. A later commentary on Pāṇini's rule makes the link itself. It quotes this very passage of the Aitareya, to explain why Indra here means the self.

The Mark of Indra

> **5.2.93**
> इन्द्रियमिन्द्रलिङ्गमिन्द्रदृष्टमिन्द्रसृष्टमिन्द्रजुष्टमिन्द्रदत्तमिति वा
>
> *indriyam indraliṅgam indradṛṣṭam indrasṛṣṭam indrajuṣṭam indradattam iti vā*
>
> indriya: the mark of Indra, seen by Indra, created by Indra, enjoyed by Indra, or given by Indra.
>
> AṢṬĀDHYĀYĪ 5.2.93

The rule is *sūtra* 5.2.93. The word indriya means: the mark of Indra, seen by Indra, created by Indra, enjoyed by Indra, or given by Indra. Five relations to the self, packed into a word for the senses.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
idam *adarśam*: I have seen this	Idandra: idam + *dṛś*
Gods love the indirect	Idandra → Indra
The self is the seer	Indra = the self
The senses serve the seer	indriya: *indraliṅgam*

The story derives a name from a sentence, and shortens it to veil its meaning. The grammar derives the word for the senses from that name, and lists its meanings: the mark, the creation, the gift of the seer. The commentator joins them. In this case the missing link is not missing at all. It is written down, in a commentary on Pāṇini.

The AI Lesson

sensors and the self

THE UPANIṢAD	AI SYSTEMS
indriya: the senses	Sensors and input channels
The mark of the seer	Inputs serve a central system
The seer behind the senses	Integration of many inputs
Veiled names	Opaque internal labels

A modern analogy, not a claim about the ancient text.

Modern AI systems take in the world through many channels: cameras, microphones, text. Engineers call them modalities. The Upaniṣad adds a thought worth keeping. The senses are not the knower; they are the marks and instruments of a seer behind them, who integrates what they bring. In machine terms, the hard part is not the sensors, but the system that brings their inputs together into one understanding. And the gods' love of veiled names is a warning: internal labels that hide their meaning make a system harder to understand.

IN BRIEF

- 'I have seen this': Idandra
- Veiled as Indra
- indriya: the mark of the self

'I have seen this', said the self, and was named Idandra, the this-seer. The gods veiled the name as Indra, and grammar made the senses his marks: indriya. Every time we speak of the senses, we speak of the seer.

CHAPTER 29

Meditation on Connection

Saṃhitā Upāsana

संहितोपासना

Now the Taittirīya Upaniṣad takes the most technical part of grammar, the joining of sounds, and makes it a meditation. Earth and sky, teacher and student, mother and father: every pair in life is joined like two sounds.

The Secret of Joining

> अथातः संहिताया उपनिषदं व्याख्यास्यामः
>
> पृथिवी पूर्वरूपम्
>
> द्यौरुत्तररूपम्
>
> आकाशः सन्धिः
>
> वायुः सन्धानम्
>
> *athātaḥ saṃhitāyā upaniṣadaṃ vyākhyāsyāmaḥ*
> *pṛthivī pūrvarūpam*
> *dyaur uttararūpam*
> *ākāśaḥ saṃdhiḥ*
> *vāyuḥ saṃdhānam*
>
> Now we shall explain the secret teaching of joining. The earth is the former form; the sky is the latter form; space is the junction; the wind is the joining.
>
> TAITTIRĪYA UPANIṢAD 1.3

The teaching sits in the first chapter of the Taittirīya Upaniṣad, the chapter on phonetics. Now we shall explain the secret teaching of joining. The earth is the former form; the sky is the latter form; space is the junction; the wind is the joining.

Five Joinings

the five domains

The Upaniṣad applies the same four terms to five domains. Among the lights: fire is the former form, the sun the latter, water the junction, lightning the joining. In knowledge: the teacher is the former form, the student the latter, knowledge itself the junction, and instruction the joining. In offspring: the mother and the father, with the child as the junction, and procreation as the joining. And in the self: the lower jaw and the upper jaw, with speech as the junction, and the tongue as the joining. The meditation ends where it began, in the mouth.

Four Terms

the anatomy of a junction

Look at the four terms. Every junction of sounds has a former form, the last sound of the first word. It has a latter form, the first sound of the next. It has the junction itself, where they meet. And it has the joining, the force or the rule that makes them one. The Upaniṣad builds its meditation from the anatomy of a sandhi.

When the Former Form Prevails

pūrvarūpa

vane + atra	in the forest + here
e + a	former meets latter
e	the former absorbs the a
vane 'tra	the a is gone

pūrvarūpa: the former form takes the place of both

Grammar uses the very same word, ***pūrvarūpa***. Here is a junction where the former form wins. Take vane, in the forest, and atra, here. At the junction, an e at the end of a word meets an a. The former form, e, takes the place of both. The short a disappears, marked in writing by a small sign: vane 'tra. The Upaniṣad's first term is a technical term of sandhi.

The Rule of the Former Form

> **6.1.109**
> एङः पदान्तादति
>
> *eṅaḥ padāntād ati*
>
> After e or o at the end of a word, a following short a: the former form replaces both.
>
> AṢṬĀDHYĀYĪ 6.1.109

Pāṇini's rule is *sūtra* 6.1.109. When e or o ends a word and a short a follows, a single substitute replaces both, and the commentators call it *pūrvarūpa*, the former form. The meditation of the Upaniṣad and the mechanics of the grammar share their vocabulary.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
pūrvarūpa: earth, teacher, mother	The former sound
uttararūpa: sky, student, father	The latter sound
saṃdhi: space, knowledge, child	The junction
saṃdhāna: wind, teaching, birth	The rule that joins

Every pair in the meditation is a pair of sounds; every child of the pair is a junction. The teacher and the student are the former and latter forms; knowledge is where they meet; teaching is what joins them. To meditate on connection, the Upaniṣad says, is to see the whole world built like joined speech.

The AI Lesson

model the connection

THE UPANIṢAD	AI SYSTEMS
Teacher and student	Teacher model and student model
Knowledge: the junction	What passes between them
Teaching: the joining	The training method
Every pair has a junction	Model the interaction, not just the parts

A modern analogy, not a claim about the ancient text.

One line of this meditation has an exact modern echo. In AI, a large teacher model is often used to train a smaller student model. The Upaniṣad names all four parts: the teacher, the student, the knowledge that passes, and the teaching that makes it pass. Engineers improve such systems by attending to the junction and the joining, not only to the two models. Every pair has a junction. That is where the design work lies.

IN BRIEF

- Former form, latter form, junction, joining
- Worlds, lights, knowledge, offspring, self
- *pūrvarūpa*: a term of meditation and of sandhi

Former form, latter form, junction, joining: the anatomy of a sandhi. The Upaniṣad finds it in the worlds, the lights, learning, family and the self. And Pāṇini's commentators use its first term for a rule of sound.

CHAPTER 30

Sounds Belong to Gods

Svara, Ūṣman, Sparśa

स्वराः ऊष्माणः स्पर्शाः

Now the Chāndogya Upaniṣad gives each class of sound to a god. The vowels belong to Indra, the sibilants to Prajāpati, the stops to Death. And each must be pronounced in its own way.

Three Owners

> सर्वे स्वरा इन्द्रस्यात्मानः
> सर्व ऊष्माणः प्रजापतेरात्मानः
> सर्वे स्पर्शा मृत्योरात्मानः
>
> *sarve svarā indrasyātmānaḥ*
> *sarva ūṣmāṇaḥ prajāpater ātmānaḥ*
> *sarve sparśā mṛtyor ātmānaḥ*
>
> All the vowels are the selves of Indra; all the sibilants are the selves of Prajāpati; all the stops are the selves of Death.
>
> CHĀNDOGYA UPANIṢAD 2.22.3

The passage belongs to the Chāndogya's teaching on the chanting of the Sāman. All the vowels are the bodies of Indra; all the sibilants are the bodies of Prajāpati; all the stops are the bodies of Death.

How to Pronounce Each

Chāndogya Upaniṣad 2.22.5

Then come the instructions for the singer. All the vowels are to be pronounced resonant and strong, with the thought: let me give strength to Indra. All the sibilants are to be pronounced open, neither swallowed nor thrown out, with the thought: let me give myself to Prajāpati. All the stops are to be pronounced lightly, without being merged into each other, with the thought: let me draw myself back from Death. And if anyone finds fault with the singer's vowels, he is to answer: I

have taken refuge in Indra. He will answer you. A theology of sound, and at the same time an exact manual of articulation.

Effort in the Mouth

prayatna

stops	full contact: *spṛṣṭa*
semivowels	slight contact
sibilants	slightly open
vowels	open: *vivṛta*

The Upaniṣad's three manners are the phoneticians' efforts

The phonetic tradition of the grammarians describes each class by its effort, prayatna. The stops are made with full contact: tongue or lips touching. *spṛṣṭa*. Their very name, *sparśa*, means touch. The semivowels with slight contact. The sibilants are slightly open; the vowels are fully open, *vivṛta*. The Upaniṣad's instructions, strong and resonant, open and not swallowed, light and not merged, follow the same differences of effort. The gods are assigned by articulation.

Never the Same Class

> **1.1.10**
> नाज्झलौ
>
> *nājjhalau*
>
> A vowel and a consonant are never homogeneous, even if they share place and effort.
>
> AṢṬĀDHYĀYĪ 1.1.10

Pāṇini adds a boundary between the gods' domains. Sūtra 1.1.10. A vowel and a consonant are never treated as the same kind of sound, even when they share their place in the mouth. The palatal vowel i and the palatal sibilant *ś* stay apart. Indra's vowels and Prajāpati's sibilants may be neighbours in the mouth, but grammar keeps their domains separate.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
Vowels: Indra's, strong	svara: open, voiced
Sibilants: Prajāpati's, open	*ūṣman*: slightly open
Stops: Death's, light	*sparśa*: full contact
Three separate owners	1.1.10: vowel ≠ consonant

Its three owners map onto three classes defined by effort in the mouth. Its three manners of speaking match the three degrees of opening and contact. And its separation of owners matches Pāṇini's rule that vowels and consonants never share a class. A singer's devotion and a grammarian's precision describe one mouth.

The AI Lesson

evaluate by class

THE UPANIṢAD	SPEECH TECHNOLOGY
Vowels strong	Vowel clarity measured
Sibilants open	Fricative noise judged
Stops light, not merged	Stop bursts kept distinct
Each class its own standard	Per-class error analysis

A modern analogy, not a claim about the ancient text.

When engineers test a speech system, a single overall score hides a great deal. Errors cluster by class: vowels drift, sibilants blur, stops merge into their neighbours. The Upaniṣad gives each class its own standard of correctness, and that is how good evaluation works: measure each class of sound against its own criterion. A singer who knows which god owns which sound knows where to listen for mistakes.

IN BRIEF

- Vowels to Indra, sibilants to Prajāpati, stops to Death
- Strong, open, light
- *nājjhalau*: domains kept apart

Vowels belong to Indra, sibilants to Prajāpati, stops to Death. Each is spoken in its own manner: strong, open, light. And grammar keeps their domains apart.

CHAPTER 31

Hiding in the Metres

Chandas

छन्दः

Now the gods themselves are afraid. Death is coming for them, and they need somewhere to hide. They hide in the metres, and from that hiding, the Upaniṣad says, the metres get their name.

Covered by the Metres

> देवा वै मृत्योर्बिभ्यतस्त्रयीं विद्यां प्राविशन्
> ते छन्दोभिरच्छादयन्
> यदेभिरच्छादयंस्तच्छन्दसां छन्दस्त्वम्
>
> *devā vai mṛtyor bibhyatas trayīṃ vidyāṃ prāviśan*
> *te chandobhir acchādayan*
> *yad ebhir acchādayaṃs tac chandasāṃ chandastvam*
>
> The gods, afraid of death, entered the threefold knowledge. They covered themselves with the metres. Because they covered themselves with them, the metres are called chandas.
>
> CHĀNDOGYA UPANIṢAD 1.4.2

The story opens the Chāndogya Upaniṣad's teaching on the syllable Oṃ. The gods, afraid of death, entered the threefold knowledge of the Vedas. They covered themselves with the metres. Because they covered themselves with them, that is the metre-ness of the metres.

Death the Fisherman

Chāndogya Upaniṣad 1.4.3–4

But the hiding place was not safe. Death saw the gods in the verses, the chants and the formulas, as a fisherman sees fish in shallow water. The gods understood. They rose up out of the verses, the chants and the formulas. And they entered the sound itself, the syllable Oṃ. Having entered it, they became immortal and fearless. The

metres can cover, but they can be seen through. The sound beneath them cannot be caught.

A Name from Covering

√*chad* → *chandas*

√*chad*	to cover
acchādayan	they covered themselves
chandas	metre: the covering
chandastvam	metre-ness

A nirvacana: the name explained by the act in the story

The grammar of the story is in its verb. The root is chad, to cover. The gods *acchādayan*: they covered themselves. And the word for metre, chandas, is explained from the same root: the covering. The text even forms an abstract noun, chandastvam, metre-ness, the essence of being a metre: covering. Yāska gives the same derivation in his Nirukta: metres are so called from covering. Story and etymology point to one root.

Chandas in Pāṇini

> **chandasi**
> बहुलं छन्दसि
>
> *bahulaṃ chandasi*
>
> ‘In the Veda, variously’: a phrase repeated in many of Pāṇini’s rules.
>
> THE VEDIC LANGUAGE

In Pāṇini’s grammar, the word chandas has a wider meaning. It names the whole language of the Veda. Many rules are marked chandasi, in the Veda, and several say *bahulaṃ* chandasi: in the Veda, variously. They tell the user: these forms belong to the sacred language, the covering in which the gods once hid, and they may follow patterns that ordinary speech does not.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Gods cover themselves	√chad, to cover
With the metres	chandas: metre, covering
Seen like fish by Death	Forms of the Veda: chandasi
Safe only in the sound	Below the forms, the sound itself

The gods' act of covering gives the name of metre, and the name of metre becomes Pāṇini's name for the Vedic language. The story then goes deeper than the forms: the gods are safe only in the sound beneath them. Form is a covering; sound is what it covers.

The AI Lesson

wrappers can be seen through

THE STORY	AI SYSTEMS
Hiding inside the metres	Information hidden in formatting
Death sees them anyway	Patterns detectable underneath
Chandas: a separate register	Domain-specific language data
Safety in the sound itself	Robustness at the core

A modern analogy, not a claim about the ancient text.

AI systems often try to protect or label content by wrapping it: in a format, a style, a template. Like Death the fisherman, a capable model can often see through such wrappers to what lies beneath. Pāṇini's treatment of chandas offers a different lesson: mark a special register clearly, so that its special forms are recognised and not mistaken for errors. Covering is not protection. Clear marking, and a sound core, are.

IN BRIEF

- The gods covered themselves with the metres
- chad: to cover; chandas: metre
- Safe only in the sound

Afraid of death, the gods covered themselves with the metres, and gave them their name. chad, to cover, becomes chandas, metre, and Pāṇini's name for the language of the Veda. But the gods were safe only in the sound.

CHAPTER 32

Speech and Breath Make Sāman

Sā + Ama

सा + अमः

Now the Upaniṣads take apart the name of the sung verse itself, the sāman. They split it into two little words, a 'she' and a 'he', and find speech and breath joined inside.

The Split

> वागेव सा प्राणोऽमस्तत्साम
> सा चामश्चेति तत्साम्नः सामत्वम्
>
> *vāg eva sā prāṇo 'mas tat sāma*
> *sā ca amaś ceti tat sāmnaḥ sāmatvam*
>
> Speech is 'sā'; breath is 'ama'; that is sāman. 'Sā and ama': that is why the sāman is called sāman.
>
> CHĀNDOGYA 1.7.1 · BṚHADĀRAṆYAKA 1.3.22

The Chāndogya and the Bṛhadāraṇyaka Upaniṣads both say it. Speech is *sā*, she. Breath is ama, he. *sā* and ama: that is the *sāman-ness* of the *sāman*.

A Couple in the Chant

Chāndogya Upaniṣad 1.6–7

Why these two? The word for speech, *vāc*, is feminine, so speech can be called *sā*, she. Breath, *prāṇa*, is masculine, and is called ama, he. A sung chant needs both: the words of speech, and the sustained breath that carries the melody. The Chāndogya Upaniṣad applies the same split again and again: the earth is *sā*, fire is ama; the verse is *sā*, the melody is ama. In every case, a she and a he make a *sāman*. The chant is a marriage of speech and breath.

Joining the Two

sā + ama → sāma

sā	she: speech
ama	he: breath
ā + a	like vowels meet
ā	one long vowel
sāma	the chant

A contemplative split, joined by a real sandhi rule

Grammar can join the two words exactly. Write *sā* and ama side by side. At the junction, a long *ā* meets a short a: two vowels of the same kind. They fuse into one long *ā*. The result is *sāma*, the stem form of *sāman*. The split is a contemplative reading, not the grammarians' derivation of the word. But the joining it relies on is a real rule of sandhi.

Like Vowels Fuse

> **6.1.101**
> **अकः सवर्णे दीर्घः**
>
> *akaḥ savarṇe dīrghaḥ*
>
> A simple vowel followed by a homogeneous vowel: both are replaced by one long vowel.
>
> AṢṬĀDHYĀYĪ 6.1.101

Pāṇini's rule is *sūtra* 6.1.101. When a simple vowel is followed by a vowel of the same kind, both are replaced by a single long vowel. *ā* plus a gives *ā*. The Upaniṣad plays with a rule every reciter knows by ear, and turns it into a teaching about speech and breath.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
Speech is *sā*: she	*vāc*: feminine noun
Breath is ama: he	*prāṇa*: masculine noun
Together they are *sāman*	*sā* + ama: 6.1.101
A reading for meditation	Not the grammatical etymology

The genders are real: speech is feminine, breath is masculine. The sandhi is real: *sā* and ama do fuse into *sāma*. What the Upaniṣad adds is meaning: it hears in the name of the chant the union that makes a chant possible. This is deliberate segmentation for contemplation, and the tradition knew the difference.

The AI Lesson

many valid segmentations

THE UPANIṢAD	AI SYSTEMS
sāma split as *sā* + ama	One string, several segmentations
Grammatically possible	Each split checked by rule
Chosen for meaning	Choice depends on purpose
Reading versus etymology	Label the kind of analysis

A modern analogy, not a claim about the ancient text.

A Sanskrit string can often be split in more than one grammatically valid way. Sandhi splitting systems must choose. The Upaniṣad shows that the choice depends on purpose. For contemplation, *sā* plus ama. For historical derivation, something else. A good analysis tool reports the possible splits, checks each by rule, and says which kind of analysis it is giving. Speech and breath: two words in one, if you know where to look.

IN BRIEF

- Speech is *sā*; breath is ama
- *sā* + ama = *sāma*, by a real sandhi
- A split made for meaning

Speech is sā, breath is ama, and together they make the chant. The joining follows a real rule: like vowels fuse. The split was made for meaning, and the Upaniṣad says so.

CHAPTER 33

Speech Pierced by Evil

Udgītha

उद्गीथः

Now the gods try to win a battle with the chant, and the demons attack each of their powers in turn. Speech is struck by evil, and from that day, the Upaniṣad says, speech says both what is true and what is false.

The Powers Struck One by One

Chāndogya Upaniṣad 1.2

The gods and the Asuras, both children of Prajāpati, fought. The gods took up the *udgītha*, the loud chant of the Sāman, thinking: with this we shall overcome them. They meditated on the chant as the breath in the nose. The Asuras pierced it with evil. So with the nose one smells both the fragrant and the foul. Then they meditated on it as speech. The Asuras pierced speech with evil. So with speech one says both the true and the false. The eye, the ear and the mind were pierced in the same way: each now perceives or thinks both good and bad. Last, they meditated on the breath in the mouth. When the Asuras struck it, they were shattered, like a clod of earth thrown against a rock.

Speech Struck

अथ ह वाचमुद्गीथमुपासांचक्रिरे
तां हासुराः पाप्मना विविधुः
तस्मात्तयोभयं वदति सत्यं चानृतं च

atha ha vācam udgītham upāsāṃcakrire
tāṃ hāsurāḥ pāpmanā vividhuḥ
tasmāt tayobhayaṃ vadati satyaṃ cānṛtaṃ ca

Then they meditated on the chant as speech. The Asuras pierced it with evil. Therefore with it one speaks both: the true and the untrue.

CHĀNDOGYA UPANIṢAD 1.2.3

Then they meditated on the chant as speech. The Asuras pierced it with evil. Therefore with speech one speaks both: the true, and the untrue.

The Untrue

na + *ṛta* → *anṛta*

ṛta	true order, truth
na + *ṛta*	not + true
a + *n* + *ṛta*	n kept before a vowel
anṛta	untrue

Two rules hide the negation: one drops n, one restores it before a vowel

Look at the word for the untrue: *anṛta*. It is *ṛta*, the true cosmic order, truth, with the negative particle na. In Chapter 8 we saw the first step: in a compound, na loses its n and becomes a, as in *akṣara*. But here a vowel follows, and the next rule brings an n back: a plus n plus *ṛta*, *anṛta*. The pierced speech of the story speaks satya and *anṛta*. The grammar of *anṛta* shows exactly how 'not true' is made from 'true'.

The n Returns

> **6.3.74**
> **तस्मान्नुडचि**
>
> *tasmān nuḍ aci*
>
> After that negative a, the augment n is added before a vowel: *an-ṛta*, *an-aśva*.
>
> AṢṬĀDHYĀYĪ 6.3.74

The rule is *sūtra* 6.3.74, right after the one we met in Chapter 8. After that a, before a vowel, the augment n is added. So na plus *aśva*, horse, gives *anaśva*, not a horse; and na plus *ṛta* gives *anṛta*. Two short rules build every Sanskrit negation, whether before a consonant or before a vowel.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Speech pierced by evil	Speech can carry any content
Speaks true and false	satya and *an-ṛta*
Grammar of the form	Correct form ≠ true content
The breath cannot be pierced	The underlying power

The story explains why speech can be false: it was struck. Grammar adds a sober observation: a perfectly correct sentence can state a falsehood. Grammar guards the form of speech, not its truth. Truth needs something more, and the Upaniṣad finds it in the breath that cannot be pierced.

The AI Lesson

fluent is not true

THE STORY	AI SYSTEMS
Speech says true and false	Fluent output can be false
Form is not truth	Grammatical ≠ factual
Each power pierced	Every channel can be corrupted
Seek the unpierced core	Ground answers in evidence

A modern analogy, not a claim about the ancient text.

Language models produce fluent, grammatical text. And fluent text can still be false. Engineers call such errors hallucinations. The Upaniṣad saw the problem clearly: speech, by its nature, can say both the true and the untrue. Correct form does not guarantee correct content. A system must check its claims against something beyond its own fluency. Look for the power that cannot be pierced: evidence, sources, verification.

IN BRIEF

- Speech was pierced: it says true and false
- *an-ṛta*: not-true, by two rules
- Correct form is not truth

Speech was pierced by evil, and so it says both the true and the untrue. Grammar builds anṛta, the untrue, by two exact rules, and guards the form of speech, not its truth. Correct form is not truth.

CHAPTER 34

Chanting Without Knowing

Uṣasti

उषस्तिः

Now a starving scholar walks into a king's sacrifice and stops the priests in the middle of their chant. If you chant without knowing the deity behind your words, he tells them, your head will fall off.

A Hungry Scholar

Chāndogya Upaniṣad 1.10

The Chāndogya Upaniṣad tells of a time when hailstorms had destroyed the crops of the Kuru country. A scholar named Uṣasti Cākrāyaṇa lived there in great poverty, with his young wife. Starving, he begged some boiled beans from a man who was eating, and ate the leftovers. But he refused the man's water, saying that would be drinking from what another had left. The next morning he thought: the king is holding a great sacrifice. Perhaps he will choose me as a priest, and I will earn something. He went, and sat down beside the singing priests in the hall.

The Warning

> प्रस्तोतर्या देवता प्रस्तावमन्वायत्ता
> तां चेदविद्वान्प्रस्तोष्यसि
> मूर्धा ते विपतिष्यतीति
>
> *prastotar yā devatā prastāvam anvāyattā*
> *tāṃ ced avidvān prastoṣyasi*
> *mūrdhā te vipatiṣyatīti*
>
> Singer of the prelude: if, without knowing the deity on whom the prelude depends, you sing it, your head will fall off.
>
> CHĀNDOGYA UPANIṢAD 1.10.9

He turned to the priest who sang the opening of the chant, and said: Singer of the prelude: if you sing the prelude without knowing the deity on whom it depends,

your head will fall off. He said the same to the chief singer, and to the singer of the response. All three stopped, and fell silent.

The Deities Revealed

Chāndogya Upaniṣad 1.11

The king asked who he was, and, hearing it was Uṣasti, made him the chief of the priests. The priests asked him to name the deities. The prelude depends on breath, he said; all beings enter into breath and arise from it. The main chant depends on the sun, which all beings sing of as it rises high. The response depends on food, which all beings live by when they take it in. The words of the chant were the same as before. What changed was that the singers now knew what they were saying.

Meaning Defines the Unit

> **1.2.45**
> अर्थवदधातुरप्रत्ययः प्रातिपदिकम्
>
> *arthavad adhātur apratyayaḥ prātipadikam*
>
> What has meaning, and is not a root or a suffix, is a nominal stem.
>
> AṢṬĀDHYĀYĪ 1.2.45

Pāṇini's grammar builds the same principle into its foundations. Sūtra 1.2.45. A nominal stem is defined first of all as something arthavat: having meaning. Sound alone does not make a word; meaning does. Uṣasti's warning, in grammatical form: a unit of language without its meaning is not yet a unit at all.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Chanting without knowing	Sound without meaning
'Your head will fall'	Recitation that fails its purpose
Deities named: breath, sun, food	Meaning recovered
The same words, now known	arthavat: meaning defines the unit

The priests had the sounds perfectly. What they lacked was the meaning behind them. Pāṇini's grammar refuses to define a word by sound alone: a stem is first of all arthavat, meaningful. And Yāska, in his Nirukta, compares a person who recites the Veda without understanding it to a post that merely bears a load.

The AI Lesson

sound without sense

THE STORY	AI SYSTEMS
Perfect chant, unknown deity	Fluent text, ungrounded meaning
Uṣasti's question	Ask the system what it means
Deities named: breath, sun, food	Grounding in the world
Same words, now understood	Understanding beyond imitation

A modern analogy, not a claim about the ancient text.

A language model can reproduce the sounds of expertise perfectly: the right terms, in the right order. Uṣasti's question is the right test: what does each part refer to? What is it about? Researchers call this grounding: connecting words to the things, events and quantities they stand for. The priests' heads stayed on because they learned the meanings. A system earns trust the same way.

IN BRIEF

- Chant without knowing, and lose your head
- Breath, sun, food: the meanings named
- arthavat: meaning makes the unit

Chant without knowing the deity, Uṣasti said, and your head will fall. He named the meanings: breath, sun, and food. The words stayed the same; the knowing changed. Pāṇini agrees: a word is defined by its meaning.

CHAPTER 35

The Veda of the Vedas

Nārada

नारदः

Now the most learned of sages comes to a teacher and confesses that all his learning has not brought him peace. In his list of studies is a mysterious subject: the Veda of the Vedas. The commentator says it is grammar.

Nārada's List

> ऋग्वेदं भगवोऽध्येमि यजुर्वेदं सामवेदमाथर्वणं चतुर्थम्
> इतिहासपुराणं पञ्चमं
> वेदानां वेदम्
>
> *ṛgvedaṃ bhagavo 'dhyemi yajurvedaṃ sāmavedam ātharvaṇaṃ caturtham*
> *itihāsapurāṇaṃ pañcamaṃ*
> *vedānāṃ vedam*
>
> Sir, I know the Ṛgveda, the Yajurveda, the Sāmaveda, the Atharva as the fourth, epic and Purāṇa as the fifth, the Veda of the Vedas...
>
> CHĀNDOGYA UPANIṢAD 7.1.2

The seventh chapter of the Chāndogya Upaniṣad opens with Nārada approaching the sage Sanatkumāra: teach me, sir. Tell me what you know, says the teacher. Nārada recites his list: *ṛgvedaṃ* bhagavo 'dhyemi *yajurvedaṃ sāmavedam ātharvaṇaṃ* caturtham, *itihāsapurāṇaṃ pañcamaṃ*, *vedānāṃ* vedam. I know the four Vedas, the epics and Purāṇas as the fifth, the Veda of the Vedas, and he goes on: ancestral rites, mathematics, astronomy, logic, and many more.

Knower of Words, Not of the Self

Chāndogya Upaniṣad 7.1.3

What is the Veda of the Vedas? The commentator Śaṅkara answers: it is grammar, *vyākaraṇa*. For it is by grammar that the Vedas are known, divided into words and their parts. Grammar is the knowledge by which every other text is read. A Veda about the Vedas. Yet Nārada confesses: sir, I am only a knower of the mantras, not a

knower of the self. And I am in sorrow. Sanatkumāra replies: all that you have studied is only name, *nāma*. Meditate on name, and then go beyond it. The lesson continues through speech, mind and further, up to the infinite. Grammar is honoured, and it is the first step, not the last.

Words About Words

> **1.1.68**
> **स्वं रूपं शब्दस्याशब्दसंज्ञा**
>
> *svaṃ rūpaṃ śabdasyāśabdasaṃjñā*
>
> In the grammar, a word stands for its own form, unless it is a technical term.
> AṢṬĀDHYĀYĪ 1.1.68

Why is grammar a Veda of Vedas? Because its subject is words themselves. Pāṇini states this in a rule. Sūtra 1.1.68. In a rule of grammar, a word refers to its own form, not to the thing it names, unless it is a technical term. When a rule says agni, it means the word agni, not fire. This is language turned upon itself: a text whose subject is text. That is what makes grammar the knowledge of all other knowledge in words.

The Phrase Itself

vedānāṃ vedam

veda	knowledge, text
vedānām	of the Vedas (genitive plural)
vedam	the Veda (accusative)
vedānāṃ vedam	the Veda of the Vedas

A text about texts: the genitive marks the relation

The phrase itself is simple grammar. veda, knowledge, in two forms. *vedānām*: of the Vedas, the genitive plural, marking the relation. vedam: the Veda, as the object of Nārada's study. Together: the knowledge whose object is all the other knowledges. The genitive case, which Pāṇini uses for relations of every kind, here expresses the relation between a science and its subject.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
The Veda of the Vedas	*vyākaraṇa*, by Śaṅkara's reading
Vedas known through it	Texts divided into words and parts
'All this is only name'	1.1.68: words about words
Knower of mantras, not self	Grammar as the first step

The Upaniṣad names a science of sciences, and the commentator identifies it as grammar, because every Veda is read through it. Pāṇini's rule on a word's own form shows why: grammar is the discipline that takes words as its objects. And the Upaniṣad places it honestly: necessary for knowing the mantras, but not sufficient for knowing the self.

The AI Lesson

necessary, not sufficient

THE STORY	AI SYSTEMS
Nārada knows every text	A model trained on vast text
Grammar: the science of sciences	Language as the interface to all fields
'Only name'	Knowledge of words, not of the world
Go beyond name	Grounding, action, evaluation

A modern analogy, not a claim about the ancient text.

Nārada resembles a modern language model: he has read everything, in every subject, and can recite it all. Language is indeed the interface to all those fields, as grammar is the Veda of the Vedas. But Sanatkumāra's verdict applies: knowledge of names is not yet knowledge of what they name. The next steps, for a sage or a machine, lie beyond the text: in the world it describes.

IN BRIEF

- The Veda of the Vedas: grammar
- 1.1.68: words that speak of words
- Name first, and then beyond

Among Nārada's studies was the Veda of the Vedas, and the commentator calls it grammar. Grammar is the science whose subject is words themselves. Name first, the Upaniṣad says, and then beyond.

CHAPTER 36

Grammar Among the Sciences

Aparā Vidyā

अपरा विद्या

Now a great householder asks a sage a single question: what is it that, once known, makes everything known? The answer divides knowledge into two, and places grammar, by name, in the first group.

Śaunaka's Question

Muṇḍaka Upaniṣad 1.1.3

The Muṇḍaka Upaniṣad opens with Śaunaka, a great householder, approaching the sage Aṅgiras in the proper way. He asks: sir, what is it, which being known, all this becomes known? kasmin nu bhagavo *vijñāte* sarvam *idaṃ vijñātaṃ bhavatīti*. Aṅgiras answers: two knowledges are to be known, so say the knowers of Brahman. The higher, *parā*, and the lower, *aparā*.

The Two Knowledges

> तत्रापरा ऋग्वेदो यजुर्वेदः सामवेदोऽथर्ववेदः
> शिक्षा कल्पो व्याकरणं निरुक्तं छन्दो ज्योतिषमिति
> अथ परा यया तदक्षरमधिगम्यते
>
> *tatrāparā ṛgvedo yajurvedaḥ sāmavedo 'tharvavedaḥ*
> *śikṣā kalpo vyākaraṇaṃ niruktaṃ chando jyotiṣam iti*
> *atha parā yayā tad akṣaram adhigamyate*
>
> Of these, the lower is the four Vedas, and phonetics, ritual, grammar, etymology, metre and astronomy. The higher is that by which the imperishable is reached.
>
> MUṆḌAKA UPANIṢAD 1.1.5

The lower knowledge is the four Vedas, and the six auxiliary sciences: phonetics, ritual, grammar, etymology, metre and astronomy. The higher is that by which the imperishable, the *akṣara*, is reached.

The Body of the Veda

> छन्दः पादौ तु वेदस्य हस्तौ कल्पोऽथ पठ्यते
> ज्योतिषामयनं चक्षुर्निरुक्तं श्रोत्रमुच्यते
> शिक्षा घ्राणं तु वेदस्य मुखं व्याकरणं स्मृतम्
>
> *chandaḥ pādau tu vedasya hastau kalpo 'tha paṭhyate*
> *jyotiṣām ayanaṃ cakṣur niruktaṃ śrotram ucyate*
> *śikṣā ghrāṇaṃ tu vedasya mukhaṃ vyākaraṇaṃ smṛtam*
>
> Metre is the feet of the Veda; ritual its hands; astronomy its eye; etymology its ear; phonetics its nose; and grammar is called its mouth.
>
> PĀṆINĪYA ŚIKṢĀ

The phonetic manual of the Pāṇinian school pictures the six sciences as the limbs of the Veda's body. Metre is the Veda's feet, ritual its hands, astronomy its eye, etymology its ear, phonetics its nose. And grammar is its mouth.

Why the Mouth?

vyākaraṇa among the limbs

chandas	feet: it moves in metre
kalpa	hands: it acts in ritual
jyotiṣa	eye: it sees the times
nirukta	ear: it hears meanings
śikṣā	nose: breath and sound
vyākaraṇa	mouth: it speaks

The mouth is where the Veda becomes speech

Each limb has its logic. Metre is the feet, because the Veda moves in measured steps. Ritual is the hands, because the Veda acts. Astronomy is the eye, which sees the right times. Etymology is the ear, which hears the meanings of words. Phonetics is the nose, the seat of breath. And grammar is the mouth. The mouth is where the Veda is spoken. Without grammar, the body of the Veda could not speak correctly at all.

Story and Grammar

the missing link

THE MUṆḌAKA	THE GRAMMARIANS
Grammar is lower knowledge	Grammar is the mouth of the Veda
Lower: about texts	Necessary to read every text
Higher: the imperishable	*akṣara*: syllable and imperishable
Two knowledges, both to be known	Means and end

The Upaniṣad calls grammar lower knowledge. The grammarians call it the mouth of the Veda. Both are right. Lower does not mean worthless. Both knowledges are to be known, the text says. The lower is the means; the higher is the end. And notice the word for the goal: *akṣara*. The imperishable is named with the grammarian's word for syllable, as we saw in Chapter 8.

The AI Lesson

skills and purpose

THE UPANIṢAD	AI SYSTEMS
Six auxiliary sciences	Component skills
Grammar: the mouth	Language: the interface
Lower knowledge	Capabilities
Higher knowledge	Purpose and judgement

A modern analogy, not a claim about the ancient text.

AI systems are increasingly built from component skills: reading, calculation, planning, retrieval. Language is the mouth through which all of them speak, as grammar is the mouth of the Veda. But the Muṇḍaka's division is a useful warning. Skills are lower knowledge. What they serve, purpose and judgement, is another kind of knowledge altogether. A system can master every limb and still need to be told where the body is going.

IN BRIEF

- Two knowledges: the lower and the higher
- Grammar: lower, yet the mouth of the Veda
- Means and end, both to be known

There are two knowledges, the lower and the higher. Grammar belongs to the lower, and is the mouth of the Veda. Means and end: both are to be known.

CHAPTER 37

The Son Named for His Mother

Jābāla

जाबालः

Now a boy who wants to study asks his mother a question she cannot answer: what is my lineage? He tells the truth to his teacher, and the truth becomes his name, formed from his mother's by a precise rule.

'What Is My Lineage?'

Chāndogya Upaniṣad 4.4

In the Chāndogya Upaniṣad, a boy named Satyakāma says to his mother, Jabālā: I wish to live as a student. What is my lineage, my gotra? She answers: I do not know, my son. In my youth I moved about a great deal as a servant, and I had you. I do not know your lineage. But my name is Jabālā, and yours is Satyakāma. So call yourself Satyakāma Jābāla. He went to the teacher Hāridrumata Gautama and repeated her words exactly, without hiding anything. The teacher said: no one but a true *brāhmaṇa* could speak like that. Fetch the firewood; I will initiate you. You have not departed from the truth.

The Mother's Words

> जबाला तु नामाहमस्मि
> सत्यकामो नाम त्वमसि
> स सत्यकाम एव जाबालो ब्रुवीथाः
>
> *jabālā tu nāmāham asmi*
> *satyakāmo nāma tvam asi*
> *sa satyakāma eva jābālo bruvīthāḥ*
>
> My name is Jabālā; your name is Satyakāma. So call yourself Satyakāma Jābāla.
> CHĀNDOGYA UPANIṢAD 4.4.2

My name is Jabālā; your name is Satyakāma. So call yourself Satyakāma Jābāla. Listen to the two names: Jabālā, with a short first vowel, and Jābāla, with a long one.

From Mother to Son

jabālā → jābāla

jabālā	the mother
+ a	suffix: 'descendant of'
ja → jā	first vowel strengthened
jābāla	son of Jabālā

Śaṅkara: jabālāyā apatyaṃ jābālaḥ

The grammar is exact. Start with the mother's name, Jabālā. Add a suffix meaning 'descendant of'. The final *ā* of the stem gives way to it. Then the first vowel of the word is strengthened: short a becomes long *ā*. ja becomes *jā*. The result is Jābāla: the son of Jabālā. Śaṅkara spells it out in his commentary: *jabālāyā apatyaṃ jābālaḥ*, the descendant of Jabālā is Jābāla. And Pāṇini himself is called Dākṣīputra by Patañjali: son of Dākṣī, named from his mother too.

The First Vowel Grows

> **7.2.117**
> तद्धितेष्वचामादेः
>
> *taddhiteṣv acām ādeḥ*
>
> Before certain taddhita suffixes, the first vowel of the word takes *vṛddhi*: a → *ā*.
> AṢṬĀDHYĀYĪ 7.2.117

The rule that lengthens the vowel is *sūtra* 7.2.117. Before such taddhita suffixes, the first of the vowels takes its strongest grade, *vṛddhi*. That is why descendants' names begin with a long vowel: Dāśarathi from Daśaratha, Jābāla from Jabālā. A single lengthened vowel carries the whole story: a boy who named himself, truthfully, after his mother.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Father unknown	No patronymic available
Mother's name: Jabālā	Base for the suffix
Satyakāma Jābāla	4.1.92 *tasyāpatyam* + 7.2.117
The truth told plainly	A name that states its origin

A patronymic was the usual form. Without a father's name, the grammar still has a form ready: the same suffix, on the mother's name. The name Jābāla is a true statement: son of Jabālā. The teacher accepted the boy because he refused to hide it. Grammar did not need to be bent. The rule for descendants simply applied.

The AI Lesson

honest provenance

THE STORY	AI SYSTEMS
'I do not know my lineage'	Unknown origin of data
Say exactly what is known	Report provenance honestly
A name that states the source	Labels that record origin
Truth wins the teacher's trust	Honesty earns trust

A modern analogy, not a claim about the ancient text.

An AI system often does not know exactly where a piece of its knowledge came from. Satyakāma shows the right response: do not invent a lineage. State exactly what is known, and no more. His name itself is a record of its source, built by a rule anyone can check. The teacher trusted the boy who admitted what he did not know. Users will trust systems for the same reason.

IN BRIEF

- Satyakāma, son of Jabālā
- One vowel lengthened: *vṛddhi*
- A true name, by a true rule

Satyakāma did not know his father, and named himself after his mother. One vowel, lengthened by rule, turned Jabālā into Jābāla. A true name, by a true rule.

CHAPTER 38

The Fire Named After Naciketas

Nāciketa

नाचिकेतः

Now Death himself teaches a boy how to build a sacred fire, and the boy repeats every detail back, exactly. Pleased, Death gives the fire the boy's name.

Three Nights at Death's Door

Kaṭha Upaniṣad 1.1

The Kaṭha Upaniṣad begins with a sacrifice. A father is giving away his possessions, but the cows he gives are old and barren. His young son Naciketas asks: to whom will you give me? Asked three times, the father answers in anger: to Death I give you. The boy goes to the house of Yama, the lord of death, and waits three nights without food, for Yama is away. Returning, Yama is troubled that a guest has gone unfed, and offers three boons, one for each night. For the second boon, Naciketas asks to learn the fire sacrifice that leads to heaven.

Repeated Exactly

> लोकादिमग्निं तमुवाच तस्मै
> या इष्टका यावतीर्वा यथा वा
> स चापि तत्प्रत्यवदद्यथोक्तम्
>
> *lokādim agniṃ tam uvāca tasmai*
> *yā iṣṭakā yāvatīr vā yathā vā*
> *sa cāpi tat pratyavadad yathoktam*
>
> He told him of the fire, the source of the worlds: which bricks, how many, and how to lay them. And the boy repeated it back, just as it was told.
>
> KAṬHA UPANIṢAD 1.1.15

Yama teaches him. He told him of the fire that is the source of the worlds: which bricks, how many, and how they are to be laid. And the boy repeated it back to him, just as it had been told.

The Name as a Reward

Kaṭha Upaniṣad 1.1.16

Death was delighted with the boy's exact repetition. He gave an extra gift: a chain of many forms. And he said: this fire shall be known by your own name. tavaiva *nāmnā bhavitāyam agniḥ*. So it is called the Nāciketa fire. A student who repeated his lesson perfectly had the lesson named after him.

A Name for the Fire

naciketas → nāciketa

naciketas	the boy
+ a	suffix: 'belonging to'
na → nā	first vowel strengthened
nāciketa	the fire of Naciketas

Things named after people, by the same vṛddhi as Jābāla

The fire's name is formed as Jābāla was. Start with Naciketas. Add a suffix meaning 'belonging to' or 'associated with'. The first vowel takes its strongest grade: na becomes *nā*. The fire becomes Nāciketa: the one belonging to Naciketas. The same lengthening that named a son after his mother names a fire after a student.

Named for the Teacher

> **4.3.101**
> तेन प्रोक्तम्
>
> *tena proktam*
>
> A suffix in the sense 'proclaimed, taught by him': texts are named after their teachers.
>
> AṢṬĀDHYĀYĪ 4.3.101

Usually, grammar names knowledge after its teacher. Sūtra 4.3.101. Texts and schools take the name of the one who taught them. The Kaṭha Upaniṣad itself belongs to the school named after the teacher Kaṭha. But this fire was taught by Death, and named after the student. The story reverses the usual rule, as a reward for perfect learning.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Yama teaches the fire	Knowledge usually named after the teacher
The boy repeats it exactly	pratyavadad yathoktam
'It shall bear your name'	naciketas + a → *nāciketa*
Named after the student	tena proktam reversed

Grammar names teachings after their teachers. This story names one after a student. The reason is his exact repetition, the virtue on which the whole oral tradition of the Veda, and of Pāṇini's grammar, depended. A name, formed by rule, became the record of a perfect lesson.

The AI Lesson

read it back

THE STORY	AI SYSTEMS
Which bricks, how many, how laid	A precise specification
Repeated back exactly	Read-back to confirm
The teacher checks	Verification before action
The lesson named for the learner	Credit for faithful execution

A modern analogy, not a claim about the ancient text.

Yama's lesson is a specification: which bricks, how many, in what arrangement. Naciketas does what careful systems do with a critical instruction: he reads it back before acting. Pilots, surgeons and well-designed AI agents follow the same practice: restate the task, let the instructor confirm it, and only then proceed. Exact read-back turns a lesson into a reliable action.

IN BRIEF

- Death teaches the fire
- The boy repeats it exactly
- The fire is named: *nāciketa*

Death taught the fire, and the boy repeated every detail back. The fire was named after him, Nāciketa, by the rule that named Jābāla. A perfect lesson, recorded in a name.

CHAPTER 39

Sleep Explained

Svapiti

स्वपिति

Now a father teaches his son what happens in deep sleep, and he does it by taking a common verb apart. 'He sleeps', he says, really means 'he has gone to his own'.

Gone to His Own

यत्रैतत्पुरुषः स्वपिति नाम
सता सोम्य तदा सम्पन्नो भवति
स्वमपीतो भवति
तस्मादेनं स्वपितीत्याचक्षते

yatraitat puruṣaḥ svapiti nāma
satā somya tadā sampanno bhavati
svam apīto bhavati
tasmād enaṃ svapitīty ācakṣate

When a person is said to be sleeping, then, my dear, he is united with Being; he has gone to his own. Therefore they say of him: he sleeps.

CHĀNDOGYA UPANIṢAD 6.8.1

In the sixth chapter of the Chāndogya Upaniṣad, Uddālaka Āruṇi teaches his son Śvetaketu. When a person is said to sleep, my dear, he is then united with Being. He has gone to his own. That is why they say of him: he sleeps.

The Bird on a String

Chāndogya Upaniṣad 6.8.2

The father hears the verb svapiti, he sleeps, as two pieces: svam, his own, and *apīta*, gone into. In deep sleep, the self returns to its own source, Being, sat. He gives an image. A bird tied by a string flies in every direction, finds no resting place elsewhere, and settles at last on the post it is tied to. So the mind, after wandering, settles in breath; and breath rests in Being. The word for sleep, read this way, contains the whole teaching.

How Grammar Builds svapiti

√*svap* + *i* + *ti*

√*svap*	to sleep
+ *ti*	he, present
+ *i*	an inserted vowel
svapiti	he sleeps

The Upaniṣad hears svam apīta; the grammar sees svap-i-ti

The grammarians build the same word differently. The root is svap, to sleep. The ending for 'he, present' is ti. Between them, a vowel i is inserted. It is not part of the root, and not part of the ending. The result is svapiti. The Upaniṣad hears svam *apīta*, gone to his own. Grammar sees root, inserted vowel, ending. Both are true in their own domains: one is contemplation, the other derivation.

The Inserted Vowel

> **7.2.76**
> **रुदादिभ्यः सार्वधातुके**
>
> *rudādibhyaḥ sārvadhātuke*
>
> After rud and the roots that follow it, svap among them, the augment i is inserted before certain endings.
>
> AṢṬĀDHYĀYĪ 7.2.76

The rule for the inserted vowel is *sūtra* 7.2.76. After the root rud, to cry, and the few roots listed with it, svap among them, an augment i is inserted before such endings. So roditi, he cries, and svapiti, he sleeps. The child of Chapter 15 who cried, and the sleeper of this story, share one rule.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
svapiti: he sleeps	√svap + *iṭ* + ti
svam *apīta*: gone to his own	A contemplative division
The inserted 'i' heard as *apīta*	The i is an augment: 7.2.76
Sleep: return to Being	Sleep: an ordinary verb, exactly built

Uddālaka reads the verb as a sentence about the self. Pāṇini reads it as root, augment and ending. The Upaniṣad's reading is not a historical derivation, and it does not claim to be one. It uses the sound of the word to point to a truth. The grammar keeps the derivation exact, so that the contemplation can be recognised for what it is.

The AI Lesson

label the kind of explanation

THE TWO READINGS	AI SYSTEMS
svam *apīta*	An interpretive explanation
svap-i-ti	A mechanistic explanation
Both useful	Different questions, different answers
Kept distinct	Label which kind is given

A modern analogy, not a claim about the ancient text.

When an AI system explains something, it can give different kinds of explanation: what a thing means, or how it is built. Both have value. But mixing them, and presenting an interpretation as a mechanism, misleads. The Sanskrit tradition kept the two apart: the Upaniṣad interprets, the grammar derives, and each knows its role. A trustworthy system should say which kind of explanation it is giving.

IN BRIEF

- svapiti: he has gone to his own
- svap + i + ti: the grammar's build
- Two readings, each in its place

'He sleeps', said the father: he has gone to his own, to Being. The grammar builds the same word from root, augment and ending, by the rule that also gives 'he cries'. Two readings, each in its place.

CHAPTER 40

That Thou Art

Tat Tvam Asi

तत्त्वमसि

Now the same father gives his son the most famous sentence of the Upaniṣads: three words. Their meaning has been debated for centuries. Their grammar is exact, and it is part of their force.

Salt in Water

Chāndogya Upaniṣad 6

Śvetaketu came home after twelve years of study, proud and thinking himself learned. His father Uddālaka asked: did you ask for the teaching by which the unheard becomes heard, the unknown known? Then he taught with examples. Break open a fig seed: in it, nothing you can see, yet from that subtle essence the great tree grows. Dissolve salt in water overnight: you cannot see it, yet every sip tastes of it. And each lesson ended with the same words: that subtle essence is the self of all this. That is the real. That is the self. That thou art, Śvetaketu.

The Sentence

> स य एषोऽणिमैतदात्म्यमिदं सर्वम्
> तत्सत्यं स आत्मा
> तत्त्वमसि श्वेतकेतो
>
> *sa ya eṣo 'ṇimaitadātmyam idaṃ sarvam*
> *tat satyaṃ sa ātmā*
> *tat tvam asi śvetaketo*
>
> That which is the subtle essence, this whole world has it as its self. That is the real. That is the self. That thou art, Śvetaketu.
>
> CHĀNDOGYA UPANIṢAD 6.8.7

That which is the subtle essence, this whole world has it as its self. That is the real. That is the self. That thou art, Śvetaketu.

Three Words

tat · tvam · asi

tat	that: nominative
tvam	you: nominative
√as + si	be + 2nd person
a + si	the s of as drops
asi	you are

Two nominatives and one verb: an equation

Now the grammar. tat, that, is in the nominative case. tvam, you, is also in the nominative case. The verb is the root as, to be, with the ending si, 'you'. Before that s, the root's own s drops away, and the a remains. The result is asi: you are. Two words in the same case, joined by 'are': grammatically, the sentence is an equation. That and you, the same.

Same Reference

> **1.4.105**
> युष्मद्युपपदे समानाधिकरणे स्थानिन्यपि मध्यमः
>
> *yuṣmady upapade samānādhikaraṇe sthāniny api madhyamaḥ*
>
> When 'you' is co-referent with the subject, the second-person ending is used, even if 'you' is not stated.
>
> AṢṬĀDHYĀYĪ 1.4.105

Why the second person, asi, and not the third, asti? Pāṇini's rule is *sūtra* 1.4.105. When the word for 'you' stands in the same reference as the agent, the second-person ending is used. The rule's key word is *samānādhikaraṇa*: having the same substrate, the same reference. That is precisely the claim of the sentence. 'That' and 'you' share one reference, and the verb agrees with 'you'.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
tat: the subtle essence	Nominative, same case
tvam: Śvetaketu	Nominative, same case
asi: you are	Second person: 1.4.105
That and you are one	*samānādhikaraṇa*: same reference

Its meaning was argued by the great schools of Vedānta: is it strict identity, or something subtler? The grammar settles only the form: two words in co-reference, and a verb that agrees with 'you'. The very term Pāṇini uses, same reference, is the heart of the debate. Grammar does not decide the philosophy. It states the sentence so exactly that the philosophy has something firm to argue about.

The AI Lesson

co-reference

THE SENTENCE	LANGUAGE TECHNOLOGY
tat and tvam: one referent	Co-reference resolution
Agreement shows the link	Morphology as a clue
Second person, not third	Person tracking in dialogue
Form exact, meaning debated	Parse first, interpret second

A modern analogy, not a claim about the ancient text.

Language technology has a task called co-reference resolution: deciding which words refer to the same thing. In Sanskrit, agreement gives strong clues: the same case, and a verb ending that matches one of the words. Dialogue systems also track person: who is 'I', who is 'you', who is 'he'. One wrong ending and the sentence is about someone else. The lesson of these three words: get the structure exactly right first. Interpretation can only build on a correct parse.

IN BRIEF

- tat tvam asi: that thou art
- Two nominatives, one verb
- *samānādhikaraṇa*: the same reference

That thou art: three words, repeated nine times by a father to his son. Two nominatives and a second-person verb: an equation of co-reference. Pāṇini's word for it, same reference, is the word the philosophers fought over.

CHAPTER 41

Truth in Three Syllables

Sa-Tī-Yam

स ती यम्

Now the word for truth itself, satyam, is opened up into three syllables. One is immortal, one is mortal, and the third binds the two together.

Three Syllables

> तानि ह वा एतानि त्रीण्यक्षराणि सतीयमिति
> तद्यत्सत्तदमृतम्
> अथ यत्ति तन्मर्त्यम्
> अथ यद्यं तेनोभे यच्छति
>
> *tāni ha vā etāni trīṇy akṣarāṇi satīyam iti*
> *tad yat sat tad amṛtam*
> *atha yat ti tan martyam*
> *atha yad yaṃ tenobhe yacchati*
>
> These are the three syllables: sa, tī, yam. What is sat is the immortal; what is ti is the mortal; and yam is that by which one holds the two together.
>
> CHĀNDOGYA UPANIṢAD 8.3.5

The Chāndogya Upaniṣad, speaking of the self, takes up the word satyam, truth. These are the three syllables: sa, *tī*, yam. What is sat is the immortal. What is ti is the mortal. And yam is that by which one holds the two together.

Truth Holds Both

Chāndogya 8.3.5 · Bṛhadāraṇyaka 5.5.1

Each syllable is given a meaning. sat is being, the real, the immortal. ti stands for the mortal. And yam is heard as the root yam, to hold or restrain: the power that holds the immortal and the mortal together. Truth, then, is not one simple thing. It is the binding of the lasting with the passing. The Bṛhadāraṇyaka Upaniṣad gives a parallel reading: the first and last syllables are truth, the middle one untruth, so that the untrue is held on both sides by the true.

Two Syllables Become Three

satyam → sa-tī-yam

sat-yam	two syllables as written
ty → tiy	the y opened into a vowel
sa-ti-yam	three syllables
sa-tī-yam	the Upaniṣad's form

The same opening of y we met in vareṇiyam

Count the syllables of satyam as it is usually spoken: sat, yam. Two. To get three, the Upaniṣad opens the y into a vowel plus y: ty becomes tiy. Now there are three: sa, ti, yam, and the text lengthens the middle one to *tī*. This is the same opening we met in Chapter 22, where *vareṇyam* was read as *vareṇiyam* to give the Gāyatrī its eighth syllable. The Upaniṣad uses a real feature of Vedic pronunciation to build its teaching.

Being: sat

> **6.4.111**
> **श्नसोरल्लोपः**
>
> *śnasor allopaḥ*
>
> The a of the root as (and of the class sign *nā*) is dropped in the weak forms: as → s-, giving sat, santi.
>
> AṢṬĀDHYĀYĪ 6.4.111

And the first syllable, sat, has its own grammar. It is the present participle of as, to be, the root of the last chapter's asi. Sūtra 6.4.111: *śnasor allopaḥ*. The a of the root as is dropped in its weak forms. So as becomes s, and with the participle suffix we get sat: being, existing. And santi: they are. The immortal syllable of truth is, grammatically, the root 'to be' with its own vowel removed.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
sat: the immortal	sat: participle of as, 'being'
ti: the mortal	Syllable made by opening y
yam: that which holds	Heard as √yam, to hold
Three syllables of truth	A deliberate segmentation

The first syllable is the participle of 'to be': being. The Upaniṣad reads it as the immortal. The middle syllable is created by the same opening of y that the metres sometimes demand. The last is heard as the root 'to hold'. It is a deliberate segmentation for contemplation, like *sā* plus ama in Chapter 32, and it rests on real sounds and real roots.

The AI Lesson

truth binds the changing to the lasting

THE UPANIṢAD	AI SYSTEMS
sat: the lasting	Stable, verified knowledge
ti: the passing	Fresh, changing information
yam: what binds them	Linking new claims to sources
Untruth held by truth	Errors bounded by checks

A modern analogy, not a claim about the ancient text.

An AI system holds two kinds of knowledge: what is stable, and what changes from day to day. The danger is in the middle: new claims that are not tied to anything lasting. The Upaniṣad's third syllable names what is needed: something that holds the two together, like a reference that links each new claim to a verified source. And the Bṛhadāraṇyaka's image is a design principle: surround the uncertain part on both sides with checks.

IN BRIEF

- sa, *tī*, yam: truth in three
- Immortal, mortal, and what binds
- sat: being, from the root 'to be'

Truth in three syllables: the immortal, the mortal, and what binds them. The syllables come from real features of sound and real roots: as, to be, and yam, to hold. Contemplation, built on grammar.

CHAPTER 42

The First Word: I Am

Aham Asmi

अहमस्मि

Now we go back to the very beginning, before anything else existed. The first being looks around, sees nothing but itself, and speaks the first sentence ever spoken: I am.

In the Beginning

आत्मैवेदमग्र आसीत्पुरुषविधः
सोऽनुवीक्ष्य नान्यदात्मनोऽपश्यत्
सोऽहमस्मीत्यग्रे व्याहरत्
ततोऽहंनामाभवत्

ātmaivedam agra āsīt puruṣavidhaḥ
so 'nuvīkṣya nānyad ātmano 'paśyat
so 'ham asmīty agre vyāharat
tato 'haṃnāmābhavat

In the beginning this was the self alone, in the shape of a person. Looking around, he saw nothing but himself. He first said, 'I am.' From that, he came to be called 'I'.

BṚHADĀRAṆYAKA UPANIṢAD 1.4.1

The Bṛhadāraṇyaka Upaniṣad describes the first moment. In the beginning, this was the self alone, in the form of a person. Looking around, he saw nothing other than himself. He first said: I am. From that, he came to have the name 'I'.

Why We Say 'It Is I'

the first sentence and its echo

The first sentence was a statement of existence, and its subject became a name: aham, I. The text adds an observation about daily life. Even now, when someone is called, he first says 'it is I', and only then gives his other name. The first word of every self-introduction repeats the first word of creation. Then the being felt fear, for it was alone. But it reflected: since there is nothing other than me, of what am I

afraid? And the fear left. Fear, the text says, comes from a second. Where there is no other, there is nothing to fear.

I Am

aham + as + mi

aham	I: nominative of asmad
√as + mi	be + first person
asmi	I am
aham asmi	subject and verb agree

'I' as subject calls for the first-person ending

The grammar of the first sentence is the grammar of person. aham is the nominative of the pronoun Pāṇini calls asmad, the first person. The verb is the root as, to be, with the ending mi. Unlike asi in Chapter 40, here the s stays: asmi. aham asmi: I am. The ending mi agrees with 'I'. Even if aham were left out, asmi alone would say 'I am'. The ending carries the person.

The Uttama Person

> **1.4.107**
> **अस्मद्युत्तमः**
>
> *asmady uttamaḥ*
>
> When 'I' (asmad) is co-referent with the agent, the uttama (first-person) ending is used.
>
> AṢṬĀDHYĀYĪ 1.4.107

Pāṇini's rule is two words. Sūtra 1.4.107. When 'I' is the agent, the ending of the uttama person is used. Pāṇini names the first person uttama: the last, or the highest, in his ordering of the three persons. In the Upaniṣad, the first being's 'I' is the highest reality. In Pāṇini's terms, the person of 'I' is called the highest. The coincidence is worth noticing, though it is not a claim that one borrowed from the other.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
The first sentence: aham asmi	Subject asmad, verb in -mi
'I' becomes a name	A pronoun used as a name
'It is I', then the name	Person before identity
The highest self speaks	uttama: the 'highest' person

The first sentence is a first-person sentence, built exactly by Pāṇini's rules of person and agreement. The pronoun 'I' becomes a name, and people still say 'I' before their names. Grammar records the structure of that first moment: a self, the verb 'to be', and the ending that ties them together.

The AI Lesson

who is 'I'?

THE UPANIṢAD	AI SYSTEMS
'I am': the first statement	A system speaking as 'I'
'I' becomes a name	Self-reference in AI assistants
Ending carries the person	Tracking speaker roles
Fear from a second	Multi-agent settings

A modern analogy, not a claim about the ancient text.

AI assistants speak in the first person: 'I can help with that.' What that 'I' refers to is a real question, for users and for designers. At minimum, a system must track who is speaking in every turn: which 'I' is the user, which is the assistant, which is a quoted third party. Sanskrit marks this on every verb. A model that reads the endings knows the speaker's role even when no pronoun is present. And the Upaniṣad's last line has its own echo: in systems of many agents, new problems arise from the second, from the other.

IN BRIEF

- aham asmi: the first sentence
- 'I' became a name
- asmady *uttamaḥ*: the person of 'I'

In the beginning, the self said: I am. And 'I' became its name. Pāṇini builds that sentence by his rule of person, and calls the person of 'I' the uttama. The first sentence, exactly formed.

CHAPTER 43

The Imperishable Syllable

Akṣara

अक्षरम्

Now a great debate at a king's court. The philosopher Gārgī challenges the sage Yājñavalkya with two questions, like two arrows. He answers with a single word, and then describes it only by what it is not.

Two Arrows

Bṛhadāraṇyaka Upaniṣad 3.8

King Janaka of Videha held a great sacrifice and offered a thousand cows to the wisest of the scholars. Yājñavalkya claimed them, and was challenged by one questioner after another. Gārgī Vācaknavī rose a second time. Like a warrior with two arrows on the string, she said, I stand before you with two questions. That which is above the sky and below the earth, between them, past, present and future: on what is it woven, warp and woof? On space, he answered. And on what is space woven? He said: that, Gārgī, is what the knowers call the *akṣara*, the imperishable.

Only by Negation

> एतद्वै तदक्षरं गार्गि ब्राह्मणा अभिवदन्ति
> अस्थूलमनण्वह्रस्वमदीर्घम्
>
> *etad vai tad akṣaraṃ gārgi brāhmaṇā abhivadanti*
> *asthūlam anaṇv ahrasvam adīrgham*
>
> That, Gārgī, is what the knowers call the imperishable: not coarse, not fine, not short, not long...
>
> BṚHADĀRAṆYAKA UPANIṢAD 3.8.8

That, Gārgī, is what the knowers call the imperishable: not coarse, not fine, not short, not long. And the list goes on: without blood, without moisture, without shadow, without darkness, without wind, without space.

A Chain of Nots

a- and an-

a-sthūla	not coarse
an-aṇu	not fine
a-hrasva	not short
a-dīrgha	not long

Every description is a negative compound

Look at the form of the answer. Every term is a negative compound: a before a consonant, an before a vowel. We met both in Parts Eight and Thirty-Three: *akṣara*, not perishing, and *anṛta*, not true. Here the whole description is built of them. The imperishable cannot be named by any positive quality, so it is named by stripping qualities away, one compound at a time.

The Negative Compound

> **2.2.6**
> **नञ्**
>
> *nañ*
>
> The negative particle na compounds with a following word: *a-sthūla*, *an-aṇu*.
> AṢṬĀDHYĀYĪ 2.2.6

Pāṇini's rule for these compounds is one syllable long. Sūtra 2.2.6. The negative particle, given the technical name *nañ*, forms a compound with a word that follows it. The rules of Chapter 8 and Chapter 33 then shape it into a or an. The grammarians debated what such a negation means: something other than the thing, or the simple absence of it. Yājñavalkya's chain leaves the imperishable beyond both.

Under Its Command

Bṛhadāraṇyaka Upaniṣad 3.8.9

Then he gives its positive power. Under the command of this *akṣara*, Gārgī, the sun and the moon stand held apart. Under its command, earth and sky stand held in place; moments, days and seasons stand in order. etasya *vā akṣarasya praśāsane gārgi sūryācandramasau vidhṛtau tiṣṭhataḥ*. Gārgī turned to the assembly and said: no one among you will defeat him in debate about Brahman.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
akṣara: the imperishable	*akṣara*: a + *kṣara*, and the syllable
Not coarse, not fine...	*nañ* compounds: 2.2.6
a- before consonant, an- before vowel	6.3.73 and 6.3.74
Holds sun and moon apart	The unit everything rests on

The imperishable is named with the word for syllable, and described entirely in negative compounds. Three rules of Pāṇini build every term in Yājñavalkya's answer: the compound, the dropped n, and the n restored before vowels. Philosophy reaches beyond language by using language's own tool for saying what something is not.

The AI Lesson

specify by exclusion

YĀJÑAVALKYA	AI SYSTEMS
Not coarse, not fine...	Negative constraints
Each 'not' removes options	Narrowing a search space
Negation handled exactly	Models often mishandle 'not'
What remains is the answer	Specification by exclusion

A modern analogy, not a claim about the ancient text.

Language models are known to struggle with negation: told what not to do, they sometimes do it anyway. Sanskrit marks negation precisely, inside the word, by rule. There is no doubt which quality is being denied. Yājñavalkya's answer also models a technique: when something cannot be described directly, specify it by excluding everything it is not. Clear negation, exactly placed, is a strength worth building into any system.

IN BRIEF

- On what is space woven? On the *akṣara*
- Not coarse, not fine, not short, not long
- *nañ*: negation by rule

On what is space woven? On the imperishable, the akṣara. It is described only by what it is not, in negative compounds built by Pāṇini's rules. Language reaches beyond itself by negation.

CHAPTER 44

Da, Da, Da

Dāmyata, Datta, Dayadhvam

दाम्यत दत्त दयध्वम्

Now the creator teaches three kinds of students with a single syllable: da. Each hears a different command, and each is right. The thunder still repeats the lesson.

Three Students

Bṛhadāraṇyaka Upaniṣad 5.2

The Bṛhadāraṇyaka Upaniṣad says the three kinds of offspring of Prajāpati, gods, humans and Asuras, lived with him as students. When their studies were done, the gods said: teach us, sir. He spoke one syllable: da. Then he asked, have you understood? *vyajñāsiṣṭā*3 iti, with a long, questioning vowel. They said: we have understood. You told us, *dāmyata*: be self-restrained. Yes, he said, you have understood. The humans asked, and heard the same da. You told us datta: give. Yes, you have understood. The Asuras asked, and heard da. You told us dayadhvam: be compassionate. Yes, you have understood.

The Thunder

> तदेतदेवैषा दैवी वागनुवदति स्तनयित्नुः
> द द द इति
> दाम्यत दत्त दयध्वमिति
>
> *tad etad evaiṣā daivī vāg anuvadati stanayitnur*
> *da da da iti*
> *dāmyata datta dayadhvam iti*
>
> This very teaching the divine voice, the thunder, repeats: da, da, da: be restrained, give, be compassionate.
>
> BṚHADĀRAṆYAKA UPANIṢAD 5.2.3

And the text closes: This very teaching the divine voice repeats, the thunder: da, da, da. Be restrained. Give. Be compassionate. So these three should be learned: restraint, giving and compassion.

Three Roots in One Syllable

dam · dā · day

√dam	to restrain
dāmyata	be restrained!
√dā	to give
datta	give!
√day	to have compassion
dayadhvam	be compassionate!

Three roots share one first syllable: da

The grammar explains why all three could hear da. It is the first syllable of three different roots. dam, to restrain, gives the command *dāmyata*, be restrained, addressed to many. *dā*, to give, gives datta: give. day, to have compassion, gives dayadhvam, with a middle ending: be compassionate. One syllable stands at the head of three roots. Each listener completed it with the root they needed, and the teacher accepted all three completions.

The Mood of Command

> **3.3.162**
> लोट्
>
> *loṭ ca*
>
> The imperative (*loṭ*) is used for command, invitation, permission, request and the like.
>
> AṢṬĀDHYĀYĪ 3.3.162

All three words are in the same mood. Pāṇini names it *loṭ*, the imperative. Sūtra 3.3.162. Prajāpati's single syllable carried a mood before it carried a meaning. All three students knew it was a command; they had to supply which one.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
One syllable: da	First syllable of dam, *dā*, day
Gods: *dāmyata*	√dam + imperative
Humans: datta	√*dā* + imperative
Asuras: dayadhvam	√day + imperative, middle

The teacher's syllable is the shared beginning of three roots. Each student expands it into a full imperative. Each expansion is grammatically correct, and the choice depends on the listener's own nature. The listener supplies the meaning; the grammar guarantees that every supplied meaning is a real word.

The AI Lesson

one prompt, three completions

THE STORY	AI SYSTEMS
One syllable: da	A short, ambiguous prompt
Each completes it differently	Completion shaped by context
All three accepted	Several valid outputs
Each hears what it needs	Personalised interpretation

A modern analogy, not a claim about the ancient text.

A language model also completes short prompts, and the completion depends on everything it brings to them. da is the shortest possible prompt, and it produced three different, correct completions. The story shows the power of ambiguity used deliberately, and also its risk: the teacher had to check each student's understanding. 'Have you understood?' A brief instruction needs a check like that, from a teacher or from a system.

IN BRIEF

- da, da, da: restrain, give, be compassionate
- One syllable, three roots
- *loṭ*: the mood of command

The creator said 'da', and each listener heard the command they needed: restrain, give, be compassionate. One syllable began three roots, in the mood Pāṇini calls loṭ. And the thunder still repeats it.

CHAPTER 45

The Measures of Oṃ

Mātrā

मात्रा

Now a student asks what becomes of a person who meditates on Oṃ until death. The answer depends on how many measures of the syllable he meditates on: one, two, or three.

Satyakāma's Question

Praśna Upaniṣad 5

In the Praśna Upaniṣad, six students come to the sage Pippalāda, each with a question. The fifth, Satyakāma, asks: if someone meditates on the syllable Oṃ until death, what world does he win by it? The sage answers: if he meditates on one measure, he is enlightened by that alone, and soon returns to the earth; the verses of the Ṛgveda lead him to the world of humans. If with two measures, he is led by the formulas of the Yajurveda to the mid-air, to the world of the moon, and returns again. And if he meditates on the highest person with all three measures, he reaches the light, the sun, and is freed from evil as a snake is freed from its skin.

Counting Measures

mātrā: the unit of time

a	short: 1 *mātrā*
ā	long: 2 *mātrās*
a3	prolated: 3 *mātrās*

Measure is time: 1.2.3

A *mātrā* is a measure of time, the time it takes to say a short vowel. A long vowel takes two measures. A prolated vowel, the kind we met in *vyajñāsiṣṭā*3 and in the Oṃ that begins a recitation, takes three. The Upaniṣad's one, two and three measures of Oṃ are the same units the phoneticians count. Each extra measure of sound, in the teaching, is a step further toward liberation.

Short, Long, Prolated

> **1.2.27**
> ऊकालोऽज्झ्रस्वदीर्घप्लुतः
>
> *ūkālo 'j jhrasvadīrghaplutaḥ*
>
> A vowel with the time of u, *ū* or u3 is called short, long or prolated.
> AṢṬĀDHYĀYĪ 1.2.27

Pāṇini defines the three in one rule. Sūtra 1.2.27. A vowel that takes the time of u, of *ū*, or of the prolated u3, is called short, long, or prolated: hrasva, *dīrgha*, pluta. He measures time with the sound of u itself: once, held longer, and drawn out. Grammar has a clock, and its unit is the *mātrā*.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
One measure of Oṃ	hrasva: one *mātrā*
Two measures	*dīrgha*: two *mātrās*
Three measures	pluta: three *mātrās*
Earth, moon, sun	Time units of sound

The three measures of the teaching are the three durations of Pāṇini's rule. The Upaniṣad attaches a destination to each: the human world, the moon, the sun. The grammar attaches a name to each: short, long, prolated. Both are counting the same thing: time in sound.

The AI Lesson

duration carries meaning

THE UPANIṢAD	SPEECH TECHNOLOGY
1.2.3 measures	Phoneme duration
Length changes the result	Length changes the word
A clock made of sound	Timing models in synthesis
Counted, not guessed	Explicit duration targets

A modern analogy, not a claim about the ancient text.

In Sanskrit, vowel length changes meaning: a short and a long vowel can make two different words. Speech systems for such languages must model duration explicitly. A synthesiser that blurs short and long vowels mispronounces the language. Pāṇini gave a precise unit, the *mātrā*, and three values. That is exactly the kind of target a duration model can be trained to hit. Measure it, and it can be checked.

IN BRIEF

- Oṃ in 1.2.3 measures
- Short, long, prolated
- Grammar's clock: the *mātrā*

Oṃ, meditated in one, two or three measures, leads to three different worlds. Pāṇini names the same three measures: short, long and prolated. Grammar has a clock, and its unit is the mātrā.

CHAPTER 46

The Fourth Beyond Sound

Turīya

तुरीयम्

Now the shortest Upaniṣad of all, the Māṇḍūkya, divides the syllable into its sounds, a, u and m, and matches them to three states of the self. Then it names a fourth, with no measure at all.

All This Is Oṃ

> ओमित्येतदक्षरमिदं सर्वम्
>
> *om ity etad akṣaram idaṃ sarvam*
>
> Oṃ: this syllable is all this.
>
> MĀṆḌŪKYA UPANIṢAD 1

The Māṇḍūkya Upaniṣad has only twelve verses. It begins: Oṃ: this syllable is all this. What was, what is, and what will be, all is Oṃ. And whatever is beyond the three times, that too is Oṃ.

Three Sounds, Three States

Māṇḍūkya Upaniṣad 9–11

The first sound, a, is the waking state, the self that knows the outer world. The second, u, is the dreaming state, the self that knows the inner world. The third, m, is deep sleep, where everything becomes one mass of knowing. And the fourth, *turīya*, is without measure: beyond all dealings, the cessation of the manifold, peaceful, non-dual. That, the text says, is the self.

The Measureless

> अमात्रश्चतुर्थोऽव्यवहार्यः प्रपञ्चोपशमः शिवोऽद्वैत
> एवमोंकार आत्मैव
>
> *amātraś caturtho 'vyavahāryaḥ prapañcopaśamaḥ śivo 'dvaita*
> *evam oṃkāra ātmaiva*
>
> The fourth is without measure, beyond dealings, the stilling of the manifold, auspicious, non-dual. Thus Oṃ is the self itself.
>
> MĀṆḌŪKYA UPANIṢAD 12

The last verse: The fourth is *amātra*, without measure. Beyond all dealings, the stilling of the manifold, auspicious, without a second. Thus Oṃ is the self itself.

How o Contains a and u

a + u → o

a	first sound
u	second sound
a + u → o	*guṇa*: the two merge
o + m	the third sound closes it
om	one syllable

The Upaniṣad separates what sandhi has joined

The grammar of the division is exact. In Sanskrit phonetics, the vowel o is what a and u become when they merge. So o contains a and u, just as Chapter 9's *jāyeva* contained *ā* and i. Add the closing m, and the syllable is complete: om. The Māṇḍūkya undoes the merger and reads each part separately: a, u, m. Its fourth part has no sound to undo: it is what remains when all three are taken away.

The Guṇa Vowels

> **1.1.2**
> अदेङ्गुणः
>
> *adeṅ guṇaḥ*
>
> a, e and o are called *guṇa*.
>
> AṢṬĀDHYĀYĪ 1.1.2

Pāṇini names the class of o. Sūtra 1.1.2. The vowels a, e and o are called *guṇa*. When a meets u, the rule of Chapter 9 replaces both by the *guṇa* vowel o. The sacred syllable is, phonetically, a *guṇa* vowel closed by m. The Upaniṣad's three measures are the three sounds its grammar contains.

Story and Grammar

the missing link

IN THE UPANIṢAD	IN THE GRAMMAR
a: waking	a: first component of o
u: dreaming	u: second component of o
m: deep sleep	m: the closing nasal
The fourth: *amātra*	No sound, no measure

Its first two states match the two vowels that merge into o. Its third matches the closing m. Its fourth has no counterpart in sound, and the text says so: it is *amātra*, measureless. The Upaniṣad makes no claim to be grammar. It uses a real phonetic analysis of the syllable to point to what lies beyond all analysis.

The AI Lesson

the limits of measurement

THE UPANIṢAD	AI SYSTEMS
a, u, m: measurable	What can be measured
Waking, dream, sleep	States a system can model
The fourth: measureless	What benchmarks cannot capture
Stated honestly	Acknowledge the limits

A modern analogy, not a claim about the ancient text.

AI is built on measurement: datasets, benchmarks, scores. What can be counted can be improved. The Māṇḍūkya measures carefully, sound by sound, and then states plainly that what matters most has no measure. For anyone building or judging AI systems, that is a healthy reminder. Benchmarks capture the measurable states. Some of what we care about may lie outside them. Measure everything you can, and say honestly what you cannot.

IN BRIEF

- a, u, m: waking, dream, sleep
- o = a + u: *adeṅ guṇaḥ*
- The fourth: without measure

a, u and m: waking, dreaming, and deep sleep. The grammar confirms the division: o is a and u, merged by rule. And the fourth is without measure.

Part III

Itihāsa and Kāvya

Names and forms

Chapters 47–71

CHAPTER 47

The First Verse and Its Famous Form

Mā Niṣāda

मा निषाद

A sage sees a bird shot from beside its mate, and in his grief, the first verse of Sanskrit poetry is born. Grammarians have discussed one word of that verse for more than a thousand years.

The Krauñca Birds

Rāmāyaṇa 1.2

At the opening of the Rāmāyaṇa, the sage Vālmīki goes to bathe at the river Tamasā. He sees a pair of *krauñca* birds, cranes, absorbed in each other. A hunter, a *niṣāda*, shoots the male. It falls, bleeding, and its mate cries out in pain. Moved by pity, the sage speaks a curse, and as he speaks, he realises it has come out in metre, four lines of equal measure, fit to be sung. The epic says his grief, *śoka*, became verse, *śloka*. The first poet had spoken the first poem.

The First Verse

> मा निषाद प्रतिष्ठां त्वम्
> अगमः शाश्वतीः समाः
> यत्क्रौञ्चमिथुनादेकम्
> अवधीः काममोहितम्
>
> *mā niṣāda pratiṣṭhāṃ tvam*
> *agamaḥ śāśvatīḥ samāḥ*
> *yat krauñcamithunād ekam*
> *avadhīḥ kāmamohitam*
>
> May you, hunter, never find rest for endless years, since you killed one of the krauñca pair, lost in love.
>
> RĀMĀYAṆA CE 1.2.14

Hunter, may you never find a firm place for endless years, since you killed one of the *krauñca* pair, lost in love.

The Famous Word

mā … agamaḥ

mā + aorist	prohibition
a-gamaḥ	with the past augment a
gamaḥ	expected: no augment
mā gamaḥ	the classical rule

With mā, the augment a- is not added: yet the verse has agamaḥ

Look at the words *mā … agamaḥ*: may you not reach. With the prohibitive *mā*, Sanskrit uses an aorist verb form. *agamaḥ* is the aorist of gam, to go, with the past-tense augment a at the front. But the classical rule says that after *mā*, the augment is not added. The expected form is *gamaḥ*: *mā gamaḥ*. So the first verse of classical poetry contains a form that classical grammar does not allow. Commentators noticed. One grammatical commentary on the line simply says: this requires consideration.

No Augment with Mā

> **6.4.74**
> **न माङ्योगे**
>
> *na māṅyoge*
>
> When joined with the prohibitive *mā*, the augment a- is not added.
>
> AṢṬĀDHYĀYĪ 6.4.74

The rule is *sūtra* 6.4.74. When the prohibitive *mā* is used, the augment is not added. Another rule, 3.3.1 seventy-five, prescribes the aorist itself with *mā*. The critic Abhinavagupta, in his commentary on poetics, explains the verse's form as Vedic in style. In the Veda the augment rule is not strict; the first poet spoke like a seer.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Grief bursts into verse	Spontaneous, not composed
mā … agamaḥ	6.4.74 expects *mā gamaḥ*
The first poet, a seer	Vedic-style form, by one reading
Kept, not corrected	Tradition records the discussion

The verse came out unplanned, in a moment of grief. Its one irregular form has been kept exactly as it was, not corrected. Grammar notices the irregularity, names the rule it departs from, and records the explanations offered: Vedic style, or a matter needing thought. The first poem shows that grammar describes, discusses, and preserves. It does not erase.

The AI Lesson

don't auto-correct the source

THE VERSE	AI SYSTEMS
agamaḥ: irregular	Unusual form in a source text
Kept as it was	Preserve, don't normalise
Rule and exception noted	Flag, explain, cite
Explanations recorded	Annotations, not edits

A modern analogy, not a claim about the ancient text.

AI tools that clean or edit text are tempted to correct anything irregular. Applied to a classic, that would destroy evidence: *agamaḥ* would become *gamaḥ*, and a famous discussion would vanish. The tradition's way is better: keep the text exactly, and add annotations that explain how it departs from the rule. For source texts, a good system flags and explains. It does not silently fix.

IN BRIEF

- Grief became verse: *śoka*, *śloka*
- *mā agamaḥ*: a form grammar questions
- Preserved, and discussed

A bird fell, a sage grieved, and the first verse was born. Its word agamaḥ departs from Pāṇini's rule, and the tradition kept it and discussed it. Preserved, and discussed: never erased.

CHAPTER 48

Son of the Kṛttikās

Kārttikeya

कार्त्तिकेयः

Now a child born of fire is found by six star-mothers, the Kṛttikās, the Pleiades, who all wish to nurse him. The child's name records his foster mothers, by a suffix that Pāṇini reserves for descent from women.

Six Mothers

Rāmāyaṇa CE 1.36

In the Rāmāyaṇa, the sage Viśvāmitra tells the young Rāma the story as they travel. The radiant seed of Śiva was carried by the fire god, Agni, and placed in the river Gaṅgā, who set it down on a mountainside. From it a shining child was born. The gods asked the six Kṛttikās, the stars of the Pleiades, to nurse him. They said: he will be our son. That was their condition. The child took milk from all six at once, growing six faces to do so. And the gods named him after the mothers who fed him.

The Name from the Mothers

kṛttikā → kārttikeya

kṛttikā	the Pleiades: mothers
+ eya	suffix: descendant of a woman
kṛ → kār	first vowel strengthened
kārttikeya	son of the Kṛttikās

A suffix that marks descent through women

Now the grammar. Start with *kṛttikā*, the name of the star-mothers, a feminine word. Add the suffix eya, which marks a descendant. The first vowel takes its strongest grade: the vowel *ṛ* becomes *ār*. The result is *kārttikeya*: the son of the Kṛttikās. Like Jābāla in Chapter 37, the name traces a child through mothers. But the suffix here is a different one, reserved for names of women.

From Feminine Names

> **4.1.120**
> **स्त्रीभ्यो ढक्**
>
> *strībhyo ḍhak*
>
> After feminine stems, the descendant suffix *ḍhak*, which becomes -eya.
>
> AṢṬĀDHYĀYĪ 4.1.120

The rule is *sūtra* 4.1.120. After stems that are feminine, the suffix for 'descendant' is *ḍhak*. Its *ḍh* is replaced by ey, giving the ending eya: vainateya, son of Vinatā; *kārttikeya*, son of the Kṛttikās. The bridge between the story and this rule is drawn by a commentator: Sarvānanda, writing on the Sanskrit thesaurus Amarakośa, cites this very rule for the god's name.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Six star-mothers nurse him	*kṛttikā*: a feminine stem
'He will be our son'	Descent from women
Named after them	4.1.120 *strībhyo ḍhak*
Kārttikeya	*vṛddhi* + -eya

The mothers made one condition: the child would be their son. The name fulfils it. Pāṇini's grammar has a suffix designed for exactly this relation: descent from a woman. And a commentator connects the two explicitly. Story, name, rule, and commentator: the full chain of a missing link, all present.

The AI Lesson

the relation is in the form

THE NAME	KNOWLEDGE SYSTEMS
-eya: descendant of a woman	A typed relation
-a with *vṛddhi*: descendant	Another relation type
Suffix chosen by the base	Type constraints
Name decodes to a fact	Facts recoverable from names

A modern analogy, not a claim about the ancient text.

Knowledge graphs store relations with types: parent of, member of, located in. Sanskrit names carry such typed relations in their suffixes: a descendant through a man, a descendant through a woman, each with its own form. A system that reads the suffix can recover the relation, and even check a claim against the form of the name. Six mothers, one suffix, and a fact preserved in a single word.

IN BRIEF

- Six star-mothers, one son
- *strībhyo ḍhak*: descent from women
- Kārttikeya: the relation in the name

Six star-mothers nursed a child of fire, and he was named for them. Pāṇini's suffix for descent from women gives the name Kārttikeya, and a commentator links them. The relation lives in the form.

CHAPTER 49

Born with Poison

Sagara

सगरः

Now a queen is poisoned while she carries her son, and the child is born alive, with the poison. His name is two syllables: 'with' and 'poison'. A rule of Pāṇini shortens the first.

The Poisoned Queen

Rāmāyaṇa 1.69–70

The Rāmāyaṇa tells the story among the ancestors of Rāma, in the line of the kings of Ayodhyā. A queen of King Asita was with child. A rival queen, jealous, gave her poison, gara, to destroy the child in the womb. The queen sought the sage Cyavana, who promised that the child would be born safely. He was born, and with him came the poison. So he was called Sagara: the one who is with poison. The critical edition of the epic keeps the naming line; the fuller account of the poisoning is found in the longer, common text. Sagara became a great king, the ancestor whose sixty thousand sons dug the ocean, which is named *sāgara* after him.

With Poison

saha + gara → sagara

saha	with
gara	poison
saha + gara	a possessive compound
saha → sa	in a name
sagara	the one with poison

In names, saha shortens to sa

The name analyses cleanly. saha means with. gara means poison. Together they form a possessive compound: one who has the poison with him. But the name is not sahagara. The saha has shortened to sa. The result is sagara. Why the shortening here? Because this is a name, and Pāṇini has a rule for saha in names.

Saha in Names

6.3.78
सहस्य सः संज्ञायाम्

sahasya saḥ saṃjñāyām

In a name, saha at the start of a compound is replaced by sa.

AṢṬĀDHYĀYĪ 6.3.78

The rule is *sūtra* 6.3.78. In a name, saha is replaced by sa. The word *saṃjñāyām*, 'in a name', is the condition: ordinary compounds may keep saha, but names shorten it. The commentaries on Pāṇini do not use Sagara as their example. The match between the epic's explanation and this rule is a structural one: the name fits the rule exactly, and the story explains why the name was given.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Poison given in the womb	gara: poison
Born with it	saha: with
Named Sagara	6.3.78: saha → sa in names
The ocean: *sāgara*	Named after Sagara, with *vṛddhi*

The story provides the meaning: born together with the poison. The grammar provides the form: a possessive compound, with saha shortened because it is a name. And the ocean's name, *sāgara*, takes one more step: a derivative of Sagara, with the first vowel lengthened, as we have seen many times now.

The AI Lesson

rules that depend on category

THE GRAMMAR	AI SYSTEMS
saha → sa only in names	Rules conditioned on category
Know it is a name	Named-entity recognition
Then apply the rule	Category before transformation
Story explains the name	Context explains the entity

A modern analogy, not a claim about the ancient text.

Pāṇini's rule applies only when the word is a name. The same compound outside a name keeps saha. So the system must first know what kind of word it is dealing with, which is the task engineers call named-entity recognition. Many language processing steps behave this way: what is correct depends on the category of the word. Classify first, then transform. The grammar was built in that order.

IN BRIEF

- Born with poison: sa + gara
- 6.3.78: saha shortens in names
- And the ocean took his name

A prince was born with the poison meant to kill him, and named Sagara. Pāṇini's rule shortens saha to sa in names, and the name fits it exactly. The ocean, sāgara, still carries his name.

CHAPTER 50

The River Swallowed and Released

Jāhnavī

जाह्नवी

Now the river Gaṅgā, coming down from heaven, floods a sage's sacrifice, and he drinks her up. When he releases her, she becomes his daughter, and takes a name that a chain of rules builds from his.

Jahnu Drinks the River

Rāmāyaṇa 1.43 (common edition)

King Bhagīratha had brought the river Gaṅgā down from heaven to purify the ashes of his ancestors, the sons of Sagara. As she followed his chariot across the land, her waters flooded the sacrificial ground of the sage Jahnu. Angered by her pride, Jahnu drank up the entire river. The gods and sages pleaded with him, and he released her through his ears. From then on she was regarded as his daughter, and called Jāhnavī. The episode is in the common text of the Rāmāyaṇa; the critical edition sets it outside its main text, but the name Jāhnavī itself remains in the epic.

From Jahnu to Jāhnavī

a chain of three steps

jahnu	the sage
jahnu + *a*	descendant suffix
jāhnava	u → av, first vowel → *ā*
jāhnavī	+ *ī*: feminine

Three changes: suffix, vowel grades, feminine ending

The name is built in three steps. Start with Jahnu. Add the suffix a for a descendant. Two vowels change. The final u becomes av before the suffix, and the first vowel, a, is lengthened to *ā*. That gives *jāhnava*: a descendant of Jahnu. Finally, because the descendant is a daughter, the feminine ending *ī* is added: *jāhnavī*. Each step is a separate rule of Pāṇini. The river's rebirth from the sage is written in three operations.

The Feminine ī

> **4.1.15**
> टिड्ढाणञ्द्वयसज्दघ्नञ्मात्रच्तयप्ठक्ठञ्कञ्क्वरपः
>
> *ṭiḍḍhāṇañdvayasajdaghnañmātractayapṭhakṭhañkañkvarapaḥ*
>
> After stems formed with these suffixes, *aṆ* among them, the feminine takes the ending ṄĪP: *jāhnava* → *jāhnavī*.
>
> AṢṬĀDHYĀYĪ 4.1.15

The last step comes from a long rule, *sūtra* 4.1.15, which lists a series of suffixes. After a stem formed with any of them, including the descendant suffix *aṇ*, the feminine is made with *ī*. That is why the daughter of the Jahnu line is Jāhnavī, not Jāhnavā. One long *sūtra* decides the ending of the river's name.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Gaṅgā swallowed by Jahnu	The base: jahnu
Released from his body	Descendant suffix: -a
Becomes his daughter	Feminine ending: *-ī* (4.1.15)
Jāhnavī	jahnu → *jāhnava* → *jāhnavī*

The story turns a river into a sage's daughter. The grammar turns the sage's name into a daughter's name. A descendant suffix, two vowel changes, and a feminine ending: the same rebirth, written as derivation. Even where the critical edition sets the episode aside, the name in the text still carries the story inside it.

The AI Lesson

derivations in steps

THE GRAMMAR	AI SYSTEMS
jahnu → *jāhnava* → *jāhnavī*	A chain of transformations
Each step a named rule	Each step traceable
Order matters	Pipelines must be ordered
Final form explained	Output with a derivation trace

A modern analogy, not a claim about the ancient text.

The derivation of Jāhnavī is a small pipeline: three transformations, each licensed by a rule, applied in order. AI systems that can show such a trace, step by step, are far easier to check than ones that only give the final answer. Sanskrit computational tools that generate words by Pāṇini's rules can output exactly this kind of derivation. An answer with its derivation is an answer that can be trusted.

IN BRIEF

- Swallowed and released: a daughter
- jahnu → *jāhnava* → *jāhnavī*
- A rebirth written as derivation

Gaṅgā was swallowed and released by Jahnu, and became his daughter. Her name is built from his by three rules: suffix, vowels, feminine ending. A rebirth, written as a derivation.

CHAPTER 51

Found in the Furrow

Sītā

सीता

Now a king ploughing a field finds a baby girl in the furrow his plough has cut. He names her after the furrow itself, and an ordinary farming word becomes the name of the heroine of the Rāmāyaṇa.

The King's Plough

Rāmāyaṇa CE 1.65

In the Rāmāyaṇa, King Janaka of Mithilā tells Rāma and Viśvāmitra the story himself. Once, as I was ploughing a field, he says, a girl rose up from the ground behind the plough. Found while the field was being prepared, she became known by the name Sītā. She was not born from a womb. The tradition calls her *ayonijā*. And Janaka decided that she would marry only the man strong enough to string the great bow of Śiva. That man would be Rāma.

From Furrow to Name

sītā

sītā	a furrow
Ṛgveda, Atharvaveda	the furrow praised as a goddess
Sītā	the heroine's name

A common noun becomes a proper name

The word *sītā* is an ordinary noun: the furrow cut by a plough. It is old. Hymns of the Ṛgveda and the Atharvaveda already address the furrow as a goddess, asking her to be gracious and bring a good harvest. The epic takes that word, with its blessing of fertility, and makes it a name. The heroine is called what she was found in. Her name and her origin are one word.

Not Born from a Womb

a + yoni + ja

yoni	womb (locative sense)
√jan + ḍa	born, suffix -a
yonija	womb-born
a + yonija + ā	not + feminine
ayonijā	not womb-born

Born in: the place word plus jan with the suffix ḍa

Her epithet, *ayonijā*, has its own grammar. yonija means born from a womb: the place, yoni, joined to the root jan, to be born, with a suffix that leaves only ja. The same pattern gives sarasija, born in a lake, the lotus, and jalaja, born in water. Add the negative a, and the feminine ending, and we have *ayonijā*: she who was not born from a womb.

Born In

> **3.2.97**
> सप्तम्यां जनेर्डः
>
> *saptamyāṃ janer ḍaḥ*
>
> After jan, with a word in the locative sense before it, the suffix *ḍa*: yoni-ja, saras-i-ja.
>
> AṢṬĀDHYĀYĪ 3.2.97

The rule is *sūtra* 3.2.97. When the root jan follows a word for a place, the suffix *ḍa* is added, and the root shrinks to ja: born in that place. Sītā's epithet negates exactly this: she was born in no womb. She was found in a furrow.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Found in the furrow	*sītā*: a common noun
Named after it	Noun becomes proper name
Not born from a womb	a-yoni-ja: 3.2.97 negated
Daughter of the earth	Vedic furrow-goddess

Her name is the word for the furrow; her epithet is a precise derivation saying where she was not born. Behind both stands the Vedic furrow, already a goddess of fertility. The heroine of the epic carries her whole origin in two words: Sītā, the furrow, and *ayonijā*, not womb-born.

The AI Lesson

when a common word is a name

THE STORY	LANGUAGE TECHNOLOGY
sītā: furrow	Common noun
Sītā: the heroine	Named entity
Same word, two uses	Context decides
The name keeps its meaning	Names carry semantics

A modern analogy, not a claim about the ancient text.

Many names are ordinary words: Rose, Hope, Rāma, Sītā. A language system must decide, in context, which use it is reading. In a farming hymn, *sītā* is a furrow. In the epic, it is a woman's name. Translating one as the other produces nonsense. Yet the name does not lose its meaning. A good system can know both: this is a person, and her name means the furrow. Recognise the entity, and keep the meaning.

IN BRIEF

- Found in the furrow: Sītā
- *ayonijā*: not born from a womb
- *saptamyāṃ* janer *ḍaḥ*

A king found a girl in the furrow and named her for it: Sītā. Her epithet, ayonijā, negates a rule-formed word: born in. Her origin, in two words.

CHAPTER 52

Names from the Churning

Sura, Asura, Apsaras

सुरः असुरः अप्सराः

Now gods and demons churn the ocean of milk, and out of it rise wonders: nymphs, a goddess of wine, and in the end, nectar. The epic uses the churning to explain three names, and one of those explanations is a famous case of hearing a word wrongly, on purpose.

The Churning

Rāmāyaṇa CE 1.44

In the Rāmāyaṇa, Viśvāmitra tells Rāma how the sons of Aditi and the sons of Diti churned the ocean of milk, seeking the nectar of immortality. From the churning of the waters rose lovely women. Because they came from the waters, they were called apsarases. Then rose Vāruṇī, daughter of Varuṇa, the goddess of wine, *surā*, seeking a husband. The sons of Aditi accepted her. So they became the suras, the ones with *surā*. The sons of Diti refused her. So they became the asuras, the ones without *surā*.

Asura and Sura

a word heard in two pieces

asura	old word: mighty, lordly
a + sura	heard as 'not + sura'
sura	a new word: god
surā / asura	the epic's wine story

A new word made by splitting an old one

Now the grammar, and a surprise. The word asura is old. In the Ṛgveda it often means a mighty lord, and is used even of gods like Varuṇa. Later speakers heard its first a as the negative prefix, the a of Parts Eight and Forty-Three. If asura means 'not a sura', then there must be suras. And so a new word was born: sura, a god. Historical linguists see sura as formed in exactly this way, by splitting an older word. The epic's wine story makes that split a narrative: those who took *surā* are suras, those who refused are asuras.

Born of the Waters

ap + saras

ap	water
apsu	in the waters
√*sṛ*	to move, to flow
apsaras	moving in the waters

The epic's explanation, and the word's parts, agree

The third name, apsaras, is clearer. ap is water; apsu, in the waters. The second part comes from *sṛ*, to move or flow. An apsaras is one who moves in the waters. Here the epic's explanation, born from the churned waters, and the word's own parts point the same way.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Apsarases from the waters	ap + √*sṛ*: moving in water
Suras accept *surā*	sura: split from a-sura
Asuras refuse *surā*	asura: read as *nañ* + sura
Names from one churning	Etymology and narrative

For apsaras, the story and the word agree. For sura and asura, the story explains a pair of words that grew from a re-analysis: an old a heard as 'not'. The epic's narrative etymology captures, in its own way, something real about how the word sura came to exist.

The AI Lesson

segmentation creates words

THE CHURNING	LANGUAGE MODELS
asura heard as a + sura	Re-segmentation of a token
A new word: sura	New units from splitting
The split spreads	Learned segmentations propagate
Story fits the split	Systems rationalise their splits

A modern analogy, not a claim about the ancient text.

Tokenizers in language models also split words into pieces, and sometimes they cut in places no speaker would. Once a split is learned, it spreads: the model treats the

piece as a unit, and builds on it. Human languages do the same, as sura shows. A split that began as a mishearing became a word of the language. Where you cut a word can create new meanings, for speakers and for machines.

IN BRIEF

- Apsarases: moving in the waters
- Sura and asura: the wine story
- A word split into a new word

From the churning came the nymphs, the goddess of wine, and the names of gods and demons. sura was born when asura was heard as 'not sura'. Where a word is cut can create a new word.

CHAPTER 53

The Demoness Who Tests Two Rules

Śūrpaṇakhā

शूर्पणखा

Now a demoness walks into the forest where Rāma lives, and sets the whole war of the Rāmāyaṇa in motion. Her name is a compound that obeys two of Pāṇini's rules at once, and the grammarians use it as their example.

In the Forest of Pañcavaṭī

Rāmāyaṇa, Araṇyakāṇḍa

In the forest of Pañcavaṭī, a demoness, the sister of Rāvaṇa, sees Rāma and is struck by his beauty. She asks him to marry her. Rāma, already married to Sītā, sends her to his brother Lakṣmaṇa, in jest; Lakṣmaṇa sends her back. Mocked and furious, she rushes at Sītā to devour her. At Rāma's word, Lakṣmaṇa cuts off her nose and ears. She flees to her brothers, and the chain of events that ends in the war of Laṅkā begins. Her name describes her: nails like winnowing fans.

Nails Like Winnowing Fans

śūrpa + nakha

śūrpa	winnowing fan
nakha	nail
śūrpa-nakha	whose nails are fans
n → *ṇ*	after r, in a name
śūrpaṇakhā	feminine in *-ā*

Two rules: the ṇ, and the ending -ā

The name is a possessive compound: *śūrpa*, a winnowing fan, and nakha, a nail. She whose nails are like winnowing fans. Two things happen to it. First, the n of nakha becomes the retroflex *ṇ*, because an r stands earlier in the compound: *śūrpaṇakha*. Second, the feminine. Many such compounds take *ī* for a woman. This one takes *ā*: Śūrpaṇakhā. Both choices follow rules made for names, and the commentators on Pāṇini cite Śūrpaṇakhā as their example.

Rule One: The ṇ

8.4.3
पूर्वपदात्संज्ञायामगः

pūrvapadāt saṃjñāyām agaḥ

In a name, after r or *ṣ* in the first member, n becomes *ṇ* (not after g).

AṢṬĀDHYĀYĪ 8.4.3

In Chapter 20 we saw that n becomes *ṇ* after r only within one word. Across a compound, it needs another rule. Sūtra 8.4.3: *pūrvapadāt saṃjñāyām agaḥ*. In a name, an r or *ṣ* in the first member changes the n of the second member into *ṇ*. So *śūrpa* plus nakha gives *śūrpaṇakha* because it is a name. Without the condition 'in a name', the n would stay.

Rule Two: The -ā

4.1.58
नखमुखात्संज्ञायाम्

nakhamukhāt saṃjñāyām

In a name, a compound ending in nakha or mukha does not take the feminine *-ī*.

AṢṬĀDHYĀYĪ 4.1.58

Sūtra 4.1.58, governs the ending. When a possessive compound ends in nakha, nail, or mukha, face, and it is a name, the feminine *ī* is not used. So the name is Śūrpaṇakhā, with *ā*. Interestingly, the critical text of the Rāmāyaṇa mostly has Śūrpaṇakhā, but a few times Śūrpaṇakhī, as if the epic itself sometimes followed the general pattern instead of the special rule.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Nails like winnowing fans	*śūrpa* + nakha: *bahuvrīhi*
A demoness's name	*saṃjñāyām*: 'in a name'
Śūrpaṇakhā	8.4.3: n → *ṇ*
Not Śūrpaṇakhī	4.1.58: no *-ī*

Her name is a description, and because it is a name, two special rules apply: one changes a sound, one chooses an ending. The commentators chose her as their example. A demoness of the epic became a test case in the grammar. And the epic's occasional Śūrpaṇakhī shows real usage pulling against the rule, which the grammar records.

The AI Lesson

usage versus rule

THE NAME	AI SYSTEMS
Rule: Śūrpaṇakhā	Prescribed form
Epic, sometimes: Śūrpaṇakhī	Observed variant
Count the forms	Measure usage in a corpus
Record both	Model rule and variation

A modern analogy, not a claim about the ancient text.

Grammar says one thing; texts sometimes do another. A data-driven model learns whatever the texts contain. Counting forms in a corpus, as scholars have done for this name, shows how strongly usage follows a rule. A good language system holds both: the prescribed form, and the attested variants, each labelled for what it is. Rule and usage, side by side, are more informative than either alone.

IN BRIEF

- Nails like winnowing fans
- 8.4.3: the *ṇ*; 4.1.58: the *-ā*
- A demoness as a test case

Her name means nails like winnowing fans. Two rules for names shape it: the ṇ after r, and the ending ā. And the grammarians made her their example.

CHAPTER 54

The Roar That Named a King

Rāvaṇa

रावणः

Now her brother, the ten-headed king of Laṅkā, tries to lift a mountain, and is caught beneath it. His roar of pain makes the three worlds cry out, and that roar becomes the name the world remembers.

The Mountain

Rāmāyaṇa, Uttarakāṇḍa 16

The last book of the Rāmāyaṇa tells the story. The ten-headed Daśagrīva, flying in his aerial chariot, found it stopped above the mountain Kailāsa. Told that the mountain was the home of Śiva, he grew arrogant, and set his twenty arms beneath it to lift it up. The mountain shook. Śiva, smiling, pressed it down with a single toe. Daśagrīva's arms were crushed under the weight. He gave a terrible roar, so loud that the three worlds trembled and cried out. Pleased in the end by his praise, Śiva released him and gave him a name: because you made the three worlds cry out, you shall be called Rāvaṇa.

The One Who Makes Others Cry

√ru → rāvaṇa

√ru	to roar, to cry
rāvayati	makes cry (causative)
rāvi + ana	agent suffix
rāvaṇa	one who makes others cry

Causative + agent suffix: the deed becomes the name

The name is built from the root ru, to roar or cry. Its causative, *rāvayati*, means to make others cry out. That is exactly what Daśagrīva did to the worlds. Add the agent suffix ana, and the n becomes *ṇ* after the r, as in Chapter 20. The result is *rāvaṇa*: the one who makes others cry. Not the one who cried, but the one who made the worlds cry. The causative carries the story's whole meaning.

The Agent Suffix

3.1.134 · 7.1.1
नन्दिग्रहिपचादिभ्यो ल्युणिन्यचः · युवोरनाकौ

nandigrahipacādibhyo lyuṇinyacaḥ · yuvor anākau

Agent suffixes lyu, *ṇini*, ac after these roots; the yu of lyu is replaced by ana.

AṢṬĀDHYĀYĪ 3.1.134 · 7.1.1

Two rules work together. Sūtra 3.1.1 thirty-four lists agent suffixes, including one called lyu. The second rule replaces the placeholder yu with ana. That is the ana in *rāvaṇa*, and in nandana, one who delights others. A placeholder suffix, replaced by sound: the grammar's way of naming the doer of a deed.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
He roars beneath the mountain	√ru: to roar
The worlds cry out	Causative: *rāvayati*
'You shall be Rāvaṇa'	Agent suffix: -ana
A name for a deed	Name = derived agent noun

The story's explanation is precise: not 'he who roared', but 'he who made the worlds cry'. The grammar agrees: the causative of ru, with an agent suffix, means exactly that. A name earned by a deed, as Indra's were in Chapter 13, and as Rudra's was in Chapter 15 from the same kind of root.

The AI Lesson

who caused what

THE NAME	AI SYSTEMS
ru: he cried	An event
rāvayati: he made others cry	A caused event
Causative marked in the verb	Causation made explicit
Rāvaṇa: the causer	Responsibility identified

A modern analogy, not a claim about the ancient text.

Understanding causation is one of the hard problems for AI: who did something, and who made it happen. Sanskrit marks causation in the verb itself. roditi, he cries; rodayati, he makes someone cry; *rāvayati*, he makes them cry out. A system that reads these forms knows not only what happened, but who caused it. Rāvaṇa's name is a judgement of responsibility, written into morphology.

IN BRIEF

- Crushed beneath Kailāsa, he roared
- *rāvayati*: he made the worlds cry
- Rāvaṇa: the causer of cries

Crushed beneath the mountain, he roared, and the worlds cried out. His name is the causative of 'to cry', with an agent suffix: the one who makes others cry. A deed, a name, a rule.

CHAPTER 55

The Boon That Became Sleep

Kumbhakarṇa

कुम्भकर्णः

Now his giant brother performs great austerities, and the creator comes to grant him a boon. The gods are terrified of what he might ask, so the goddess of speech enters his mouth. The boon that comes out is: sleep.

Speech on His Tongue

Rāmāyaṇa, Uttarakāṇḍa 10

In the last book of the Rāmāyaṇa, Rāvaṇa and his brothers perform long austerities, and Brahmā comes to grant each a boon. The gods are alarmed at the giant Kumbhakarṇa. He devours creatures already; with a boon, he could consume the world. So Brahmā calls on Sarasvatī, the goddess of speech, and she enters the giant's mouth. When Kumbhakarṇa opens it to ask his boon, the words that come out are a wish to sleep, for many years. Once speech has left him, he realises what he has said, and regrets it. But a spoken boon cannot be recalled.

One Word Changed

a popular retelling

The epic says only that speech took over his tongue. Popular retellings add a vivid detail, as a later story, not the epic's own words. He meant to ask for *indrāsana*, the throne of Indra. But with the goddess on his tongue, the first sounds were rearranged, and he asked for *nidrāsana*, a seat of sleep. One rearrangement, and a conqueror became a sleeper.

The Grammar of a Wish

svaptum

√*svap*	to sleep
+ *tum*	infinitive: in order to
svaptum	to sleep
svaptum icchāmi	I wish to sleep

A wish names its goal with the infinitive

A boon is a wish, and Sanskrit expresses the goal of a wish with the infinitive. The root is svap, to sleep, which we met in Chapter 39. Add the suffix tum, in order to. The result is svaptum: to sleep. 'I wish to sleep': svaptum *icchāmi*. The infinitive names the action that the wish aims at. A single infinitive, spoken under the goddess's influence, fixed his fate for the rest of the epic.

Action for the Sake of Action

> **3.3.10**
> तुमुन्ण्वुलौ क्रियायां क्रियार्थायाम्
>
> *tumunṇvulau kriyāyāṃ kriyārthāyām*
>
> tumun and *ṇvul* are used when one action is for the sake of another.
>
> AṢṬĀDHYĀYĪ 3.3.10

The infinitive is prescribed in *sūtra* 3.3.10. The suffix tumun, giving the infinitive, is used when one action is done for the sake of another: I go in order to see; I ask in order to sleep. The asking was for the sake of the sleeping. The grammar of the boon is a purpose clause.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Sarasvatī on his tongue	Speech shapes the request
He asks to sleep	svaptum: infinitive of purpose
Cannot be recalled	Spoken form is binding
Retelling: one word changed	Small change, opposite meaning

A boon is a sentence with a purpose. Its goal is named by an infinitive, by Pāṇini's rule. The story makes the form binding: whatever was said is granted, whatever was meant. It is Tvaṣṭṛ's lesson from Chapter 3, in the epic: the words as spoken decide.

The AI Lesson

say what you mean

THE STORY	AI SYSTEMS
A boon granted literally	A system executes the literal request
Said one thing, meant another	Specification error
Cannot be recalled	Irreversible actions
Check before granting	Confirm high-stakes requests

A modern analogy, not a claim about the ancient text.

AI agents that act in the world face Kumbhakarṇa's problem in reverse: they may grant exactly what was said, not what was meant. When an action cannot be undone, the gap between the words and the intention becomes dangerous. Good systems confirm high-stakes requests: here is what I understood; shall I proceed? Brahmā did not ask. A well-designed assistant would.

IN BRIEF

- Speech on his tongue: he asked for sleep
- svaptum: the infinitive of purpose
- Said is granted; meant is not

With the goddess of speech on his tongue, the giant asked to sleep. The wish took the form of an infinitive of purpose, by Pāṇini's rule, and could not be recalled. What is said is granted.

CHAPTER 56

Rāma, the Arrow and Vālin

Kartṛ and Karaṇa

कर्ता करणं च

Now one of the most debated moments of the Rāmāyaṇa: Rāma kills the monkey king Vālin with an arrow. A Sanskrit grammar textbook turned the moment into a single sentence, to show one case ending doing two different jobs.

Two Brothers Fight

Rāmāyaṇa, Kiṣkindhākāṇḍa

In the Kiṣkindhā book, the monkey prince Sugrīva has been driven out by his elder brother, Vālin. Rāma, searching for Sītā, makes an alliance with Sugrīva and promises to help him. Sugrīva challenges Vālin to single combat, and the two brothers fight. From behind a tree, Rāma looses an arrow, and Vālin falls. Dying, Vālin challenges Rāma: how could a righteous prince strike from hiding? The epic gives Rāma's answer, and readers have debated it ever since.

One Sentence

rāmeṇa bāṇena hato vālī

rāmeṇa	by Rāma: agent
bāṇena	with the arrow: instrument
hataḥ	killed (passive)
vālī	Vālin: the one killed

Two instrumentals, two different roles

A famous Sanskrit grammar primer, the Laghusiddhāntakaumudī, gives this example: *rāmeṇa bāṇena* hato *vālī*. Vālin was killed by Rāma with an arrow. Look at the two words ending in ena: *rāmeṇa* and *bāṇena*. Both are in the instrumental case. But they play different roles. Rāma is the agent, the one who acts. The arrow is the instrument, the means. One ending, two jobs, in one line of the epic's most contested scene.

Agent and Instrument

2.3.18
कर्तृकरणयोस्तृतीया

kartṛkaraṇayos tṛtīyā

The third case, the instrumental, expresses the agent and the instrument, when they are not otherwise expressed.

AṢṬĀDHYĀYĪ 2.3.18

Pāṇini's rule is *sūtra* 2.3.18. The third case expresses both the agent, *kartṛ*, and the instrument, *karaṇa*, when they are not already expressed by the verb. In a passive sentence, the agent is not expressed by the verb, so it too takes the instrumental. Pāṇini defines the instrument as the most effective means, and the agent as the one presented as independent, the rule we met in Chapter 16.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Rāma shoots	*rāmeṇa*: agent, instrumental
The arrow strikes	*bāṇena*: instrument, instrumental
Vālin falls	*vālī*: subject of passive
Who is responsible?	The *kārakas* assign roles

The epic's moral question is about responsibility: who acted, and how. The grammar answers the formal question exactly: Rāma is the agent, the arrow the instrument, Vālin the one affected. Grammar cannot settle the ethics. But it states the roles so clearly that the ethical question can be asked precisely.

The AI Lesson

same form, different roles

THE SENTENCE	AI SYSTEMS
rāmeṇa: by Rāma	Agent
bāṇena: with the arrow	Instrument
Same ending	Same surface feature
Roles from meaning	Roles need world knowledge

A modern analogy, not a claim about the ancient text.

A system that reads only endings would treat *rāmeṇa* and *bāṇena* alike. To tell the agent from the instrument, it must know something about the world: people shoot arrows; arrows do not shoot people. This is a classic challenge in language understanding, and in English too: 'by the hunter' and 'by the river' use the same word for different roles. Form gives the candidates; meaning chooses the role.

IN BRIEF

- *rāmeṇa bāṇena* hato *vālī*
- One ending: agent and instrument
- Roles stated, so ethics can be argued

Vālin was killed by Rāma with an arrow: one sentence, two instrumentals. Pāṇini's rule gives the same case to the agent and the instrument. Grammar states the roles; the reader argues the ethics.

CHAPTER 57

Not One Word Wrong

Hanumān's Grammar

हनूमतो व्याकरणम्

Now Rāma meets Hanumān for the first time. Hanumān comes disguised as a wandering ascetic, and speaks. Before Rāma judges his message, he judges his grammar, and he finds no fault.

The First Meeting

Rāmāyaṇa, Kiṣkindhākāṇḍa 3

On the mountain Ṛśyamūka, Sugrīva sees two armed strangers approaching and fears they are spies of Vālin. He sends his minister Hanumān to find out who they are. Hanumān takes the form of a wandering ascetic, and greets them with a long, courteous speech. Rāma listens, and turns to Lakṣmaṇa. No one could speak like this, he says, who has not learned the Ṛgveda, the Yajurveda and the Sāmaveda. And then he says something remarkable about grammar.

Rāma's Judgement

> नूनं व्याकरणं कृत्स्नम्
> अनेन बहुधा श्रुतम्
> बहु व्याहरतानेन
> न किंचिदपशब्दितम्
>
> *nūnaṃ vyākaraṇaṃ kṛtsnam*
> *anena bahudhā śrutam*
> *bahu vyāharatānena*
> *na kiṃcid apaśabditam*
>
> Surely he has studied the whole of grammar, many times over: for though he has spoken much, he has not said a single wrong word.
>
> RĀMĀYAṆA 4.3

Surely he has learned the whole of grammar, many times over. For though he has spoken at length, he has not uttered a single wrong word, not one *apaśabda*.

How He Spoke

Rāmāyaṇa 4.3

Rāma goes on to describe the manner of the speech. It was not drawn out, and it was free of ambiguity. It was neither rushed nor slow, and it was not harsh. It came from the chest and the throat, in the middle pitch. These are the categories of the phonetic manuals: places of articulation, tempo, pitch. Rāma judges like a trained phonetician, and the epic takes it for granted that a prince would.

Qualities by Negation

a-vistara, a-saṃdigdha ...

a-vistara	not prolix
a-saṃdigdha	not ambiguous
a-vilambita	not slow
a-vyatha	not harsh

Good speech is described by the faults it avoids

Notice how the virtues are named: almost all as negative compounds, the *nañ* compounds of Chapter 43. avistara, not prolix. *asaṃdigdha*, not ambiguous. avilambita, not slow. avyatha, not harsh. The tradition defined good speech by listing faults and denying each one. Hanumān's speech had none of them.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
He knows all of grammar	*vyākaraṇa*, studied fully
Not one wrong word	No *apaśabda*
Chest, throat, middle pitch	Śikṣā: places and pitch
Rāma trusts him	Correct speech earns trust

The first test of a messenger, in the epic, is the correctness of his speech. Not a single *apaśabda*, the wrong form Patañjali warned against in Chapter 4. Rāma's praise then moves through phonetics: place of articulation, tempo, pitch. The friendship at the heart of the Rāmāyaṇa begins with an evaluation of grammar.

The AI Lesson

evaluating a speaker

RĀMA'S CHECKLIST	AI EVALUATION
Not one wrong word	Grammatical accuracy
Not ambiguous	Clarity
Not too long	Concision
Right pitch and pace	Delivery quality

A modern analogy, not a claim about the ancient text.

Rāma's judgement is an evaluation rubric: accuracy, clarity, concision and delivery. Teams that evaluate AI-generated text and speech use similar criteria today. And the epic makes the stakes clear. Hanumān's flawless speech is what makes Rāma trust a stranger. For any speaker, human or machine, correctness is the beginning of credibility.

IN BRIEF

- He has learned all of grammar
- Not one *apaśabda*
- Trust begins with correct speech

Rāma heard Hanumān speak, and said: he has learned all of grammar; not one word was wrong. He praised the speech by the faults it lacked, in the categories of phonetics. Trust begins with correct speech.

CHAPTER 58

The Struck Jaw

Hanumān

हनुमान्

Now the name itself. Why is he called Hanumān? The answer is a childhood story, a thunderbolt, and one small suffix.

The Child and the Sun

Rāmāyaṇa, Kiṣkindhākāṇḍa

At the shore, before the great leap to Laṅkā, the old bear Jāmbavān tells Hanumān the story of his own birth. As an infant, the son of the wind god woke hungry and saw the rising sun. Thinking it was a ripe red fruit, he sprang into the sky to seize it. He flew higher and higher toward the sun. To stop him, Indra hurled his thunderbolt, the vajra. It struck the child on the jaw, and he fell to the mountain.

The Wind Stops

the gods make amends

Grieving and angry, Vāyu, the wind, withdrew from the world, and every living being began to suffocate. The gods came to appease him, and each granted the child a boon. Because his jaw, his hanu, had been struck, he would be called Hanumān. The name records the injury.

Building the Name

hanu + matup

hanu	jaw
hanu + matup	possession suffix
hanumat	having a jaw
hanumat + s	nominative
hanumān	num, lengthening
Hanumān	he of the jaw

5.2.94 tad asyāsty asminn iti matup

Start with the noun hanu, the jaw. Pāṇini's rule 5.2.94 adds the suffix matup in the sense 'this belongs to him'. tad *asyāsty* asminn iti matup. hanu plus mat gives hanu-

mat: he who has the jaw, the one marked by the jaw. Then the nominative. Rule 7.1.70 inserts an n, rule 6.4.14 lengthens the vowel, and the final consonants fall away. The result is *hanumān*, formed exactly like *bhagavān*, the one possessing fortune. A whole biography is compressed into one suffix.

The Possession Suffix

> **5.2.94**
> तदस्यास्त्यस्मिन्निति मतुप्
>
> *tad asyāsty asminn iti matup*
>
> The suffix matup comes in the sense 'this belongs to him' or 'this is in it'.
>
> AṢṬĀDHYĀYĪ 5.2.94

The suffix matup is used in the sense: this is his, or this is in him. The same suffix gives buddhimat, intelligent, and *śrīmat*, glorious. Here, it gives the hero of the Sundarakāṇḍa his name.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
The jaw is struck	hanu, the base
It marks him for life	matup: possession
He is the one of the jaw	hanumat
The name is spoken	*hanumān*, nominative

The injury is the base word. The lifelong mark is the possession suffix. And the name the gods give is the grammatical form that results. Every time the epic says Hanumān, it retells, in miniature, the story of the thunderbolt.

The AI Lesson

names that carry history

SANSKRIT	AI
Base word plus suffix	Subword tokens
hanu + mat	Root + affix pieces
Meaning is recoverable	Morphology aids understanding
One rule, many names	Generalising to new words

A modern analogy, not a claim about the ancient text.

Language models break words into smaller pieces, subword tokens. A model that sees hanu and mat as separate pieces can, in principle, recover the meaning of a name it has never seen. Pāṇini's suffix rules make that structure explicit: one rule, many names, each one decomposable. Morphology is compressed meaning, for a reader or a machine.

IN BRIEF

- The thunderbolt struck his jaw
- hanu + matup = hanumat
- The name tells the story

The thunderbolt struck the child's jaw, and the gods named him for it. hanu plus the possession suffix matup: hanumat, Hanumān. The name tells the story.

CHAPTER 59

Which Language to Speak?

Hanumān and Sītā

हनुमान् सीता च

Now Hanumān has crossed the ocean and found Sītā in the aśoka grove. Before he says a word, he faces a question no other epic hero faces: which language should he speak?

In the Grove

Rāmāyaṇa, Sundarakāṇḍa

Hidden among the leaves of a tree, Hanumān watches Sītā, surrounded by the *rākṣasī* guards of Rāvaṇa. She is grieving, frightened, and close to despair. If he speaks the wrong way, she will cry out, the guards will come, and the mission will fail. So the epic lets us hear him think.

Hanumān's Dilemma

> यदि वाचं प्रदास्यामि
> द्विजातिरिव संस्कृताम्
> रावणं मन्यमाना मां
> सीता भीता भविष्यति
>
> *yadi vācaṃ pradāsyāmi*
> *dvijātir iva saṃskṛtām*
> *rāvaṇaṃ manyamānā māṃ*
> *sītā bhītā bhaviṣyati*
>
> If I speak refined Sanskrit, like a brahmin, Sītā will take me for Rāvaṇa, and she will be afraid.
>
> RĀMĀYAṆA · SUNDARAKĀṆḌA

If I speak refined speech, *saṃskṛtā vāk*, like a twice-born brahmin, Sītā will think I am Rāvaṇa in disguise, and she will be terrified. Rāvaṇa had come to her once before disguised as a brahmin ascetic. Learned speech was now the voice of her abductor.

The Choice

ordinary human speech

So Hanumān decides against the speech of the learned. He will speak plain human language, *mānuṣaṃ vākyam*, but full of meaning. He begins softly, from the tree, by telling the story of Rāma. Sītā looks up, and listens. The plan works.

What 'Saṃskṛta' Means

sam + s + kṛ + ta

sam + kṛ	together + make
sam + s + kṛ	*suṭ* augment: adorning
saṃskṛta	+ kta: made perfect
saṃskṛtā vāk	refined speech

6.1.137 saṃparibhyāṃ karotau bhūṣaṇe

The word Hanumān uses is *saṃskṛta*. In the epic it is still an adjective: refined, perfected. It is sam plus the root *kṛ*, to make. But Pāṇini's rule 6.1.137 inserts an extra s, the augment *suṭ*, when *kṛ* after sam or pari means to adorn. sam, s, *kṛ*, plus the participle suffix ta: *saṃskṛta*, adorned, perfected. Without the s, *saṃkṛta* would mean merely 'put together'. One sound turns 'assembled' into 'refined'.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Refined speech, like a brahmin	*saṃskṛtā vāk*
The extra s of adorning	*suṭ*, rule 6.1.137
Plain human speech instead	*mānuṣaṃ vākyam*
Register chosen for the listener	Speech fits context

Hanumān has two registers. The refined speech whose very name contains the rule of adorning, and plain human speech. Chapter 57 showed he has mastered the first. Here he chooses the second, because of who is listening. The greatest grammarian among the monkeys knows when not to sound like one.

The AI Lesson

register and trust

HANUMĀN	AI
Models the listener's fear	Modelling the user
Avoids the abductor's register	Avoiding alarming tone
Plain words, full of meaning	Plain-language answers
Trust before information	Rapport before content

A modern analogy, not a claim about the ancient text.

A good assistant, human or machine, adapts its register to the listener. Hanumān models what Sītā fears, and avoids sounding like it. Conversational AI faces the same choice: the most formal answer is not always the one that is heard. Correctness, from Chapter 57, must be joined by judgement about the listener.

IN BRIEF

- Refined speech would frighten her
- *saṃskṛta*: sam + s + *kṛ*
- He chose plain words, full of meaning

Hanumān knew that refined speech, in that grove, was the voice of Rāvaṇa. saṃskṛta: sam, the s of adorning, and kṛ. He chose plain words, full of meaning, and won her trust.

CHAPTER 60

Guarded by Birds

Śakuntalā

शकुन्तला

Now we move from the Rāmāyaṇa to the Mahābhārata, and to a girl found alone in the forest. She was guarded by birds, and the birds gave her a name.

The Child in the Forest

Mahābhārata, Ādiparvan 66

The sage Viśvāmitra and the celestial nymph Menakā have a daughter. Menakā leaves the newborn on the bank of the river Mālinī in a lonely forest, and returns to heaven. Birds gather around the child and guard her from the beasts of the forest. The sage Kaṇva comes to the river, finds the infant among the birds, and takes her to his hermitage. Years later, when King Duṣyanta asks who she is, Kaṇva's answer explains her name.

Kaṇva Names Her

निर्जने च वने यस्माच्
छकुन्तैः परिरक्षिता
शकुन्तलेति नामास्याः
कृतं चापि ततो मया

nirjane ca vane yasmāc
chakuntaiḥ parirakṣitā
śakuntaleti nāmāsyāḥ
kṛtaṃ cāpi tato mayā

Because in the lonely forest she was guarded by śakunta birds, I gave her the name Śakuntalā.

MAHĀBHĀRATA 1.66

Because in the lonely forest she was guarded by the *śakunta* birds, therefore I named her Śakuntalā.

Reading the Sentence

who guarded whom

śakuntaiḥ	by birds: instrumental
parirakṣitā	guarded: passive, feminine
yasmāt ... tataḥ	because ... therefore
śakuntalā iti	the name quoted

Agent in the instrumental, quoted name with iti

Look at the grammar of Kaṇva's sentence. *śakuntaiḥ* is instrumental plural: by the birds. As in Chapter 56, the instrumental marks the agent of a passive participle. *parirakṣitā*, guarded, is feminine, agreeing with the girl. *yasmāt* and *tataḥ*: because, and therefore. The sentence states its own reasoning. And the name is quoted with the particle iti: 'Śakuntalā', so to speak. The name is the conclusion of an argument.

A Name Explained by Meaning

the epic's method

The epic does not give a formal derivation, rule by rule. It explains the name by meaning: the word *śakunta*, bird, is heard inside Śakuntalā, and the story supplies the link. This is the method of nirukta, explanation by meaning, which we will meet with Yāska in Chapter 92. The Mahābhārata names many of its heroes this way, and the explanation is always a story.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Birds guard the child	*śakuntaiḥ*: agent, instrumental
She is protected	*parirakṣitā*: feminine passive
Because, therefore	*yasmāt ... tataḥ*
Kaṇva names her	*śakuntalā* iti: the quoted name

Every element of the scene has its case: the birds as agent, the girl as the one guarded, the name as a quotation. And the whole sentence is built as an explanation: because this happened, therefore this name. Her son, Bharata, will give his name to the land and to the epic itself.

The AI Lesson

explanations that cite evidence

KAṆVA	AI
Because guarded by birds	Evidence
Therefore Śakuntalā	Conclusion
Reason stated in the sentence	Explainable output
Name you can check	Verifiable claim

A modern analogy, not a claim about the ancient text.

Kaṇva does not simply announce a name. He gives the evidence and then the conclusion. Explainable AI asks the same of machines: not just an answer, but the reason for it. *yasmāt*, because, and *tataḥ*, therefore, are the two words every explanation needs.

IN BRIEF

- Guarded by *śakunta* birds
- Because ... therefore ... named
- A name that is an explanation

A child was left in the lonely forest, and the śakunta birds guarded her. Because of that, Kaṇva said, I named her Śakuntalā. A name that is an explanation.

CHAPTER 61

The Terrible Vow

Bhīṣma

भीष्मः

Now a prince named Devavrata makes a vow, and the gods rename him on the spot. The new name means 'the terrible one', and it hides a rule about fear.

The Fisherman's Condition

Mahābhārata, Ādiparvan 94

King Śantanu, the father of Devavrata, falls in love with Satyavatī, the daughter of a fisher chief. Her father will give her only on one condition: that her son, and not Devavrata, will be king. Śantanu cannot disinherit his eldest son. He returns to the palace and falls silent with grief. Devavrata learns the reason, and goes to the fisherman himself.

The Vow

Mahābhārata 1.94

Before the elders, Devavrata renounces the throne. The fisherman is still not satisfied: Devavrata's own sons might one day claim it. So Devavrata vows that he will never marry and never have children. Flowers fall from the sky. The gods and seers call out: this is *bhīṣma*, terrible. From that day, the prince is known as Bhīṣma, the one of the terrible vow.

The Root of Fear

bhī, bibheti, bhīṣma

bhī	root: to fear
bibheti	he fears (reduplicated)
bhīṣma	terrible, fear-causing
Bhīṣma	the man of the vow

One root, the source of both the fear and the name

The name comes from the root *bhī*, to fear, listed in the Dhātupāṭha as *bhī* bhaye. Its present tense doubles the root: bibheti, he fears. *bhīṣma* is an adjective from the

same root: terrible, causing fear. The vow was so severe that it inspired awe, so the man is named for the fear he caused.

The Cause of Fear

> **1.4.25**
> **भीत्रार्थानां भयहेतुः**
>
> *bhītrārthānāṃ bhayahetuḥ*
>
> With verbs meaning fear or protection, the cause of fear is the source, *apādāna*, and takes the ablative.
>
> AṢṬĀDHYĀYĪ 1.4.25

And Pāṇini has a rule about fear itself: *sūtra* 1.4.25. With verbs of fearing and protecting, the cause of fear counts as the source, *apādāna*, and stands in the ablative. The standard example: *corād* bibheti, he fears from the thief. Fear is treated as something that comes out of its cause.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
The vow is terrible	*bhīṣma*, from *bhī*
Devavrata becomes Bhīṣma	A name from a root
Kings fear him in battle	*bhīṣmād* bibhyati
Fear flows from its cause	Ablative: *apādāna*, 1.4.25

The name comes from the root of fear. And when, later, the armies fear the old warrior, Sanskrit must say *bhīṣmād* bibhyati: they fear from Bhīṣma. By rule 1.4.25, Bhīṣma stands in the ablative, as the source the fear flows from. The name and the case agree: he is the origin of fear.

The AI Lesson

semantic roles

PĀṆINI	AI
Cause of fear = source	Semantic role labelling
Rule assigns the role	Role from verb meaning
Role fixes the case	Role predicts surface form
corād bibheti	Same role, many languages

A modern analogy, not a claim about the ancient text.

In language technology, semantic role labelling asks who did what to whom, and from where. Pāṇini first assigns a role, here the source, on the basis of the verb's meaning, and only then chooses the case. Separating meaning roles from surface endings is still how such systems are designed.

IN BRIEF

- Devavrata vowed never to marry
- *bhī*: to fear → *bhīṣma*
- The cause of fear is its source

Devavrata gave up the throne and vowed never to marry, and the gods called him Bhīṣma, the terrible. The name grows from the root bhī, to fear, and Pāṇini makes the cause of fear its source. He became the origin of fear.

CHAPTER 62

The Coded Warning

Vidura

विदुरः

Now the Pāṇḍavas are leaving for Vāraṇāvata, where a deadly trap has been built for them. Their uncle Vidura knows. But he must warn them in public, in front of the plotters.

The House of Lac

Mahābhārata, Ādiparvan

Duryodhana has a house built for the Pāṇḍavas at Vāraṇāvata by his agent Purocana. It is made of lac, resin and other materials that burn easily. When the Pāṇḍavas and their mother Kuntī are asleep inside, it will be set on fire. As they depart, the whole city sees them off, and the plotters are watching.

Words for One Listener

the warning

Vidura speaks to Yudhiṣṭhira in a speech the epic calls the language of foreigners, intelligible only to the wise. He speaks of a sharp weapon that is not made of iron, which can destroy the body. He says that a fire burns the dry forest, but creatures living in a burrow escape it. Yudhiṣṭhira answers only: I have understood. Later, Vidura sends a miner, who digs a tunnel under the house. When it burns, the Pāṇḍavas escape through the earth.

A Weapon Not of Iron

the riddle in a compound

loha	iron
a + loha	*nañ*: not
alohaṃ śastram	a weapon not of iron
agni	fire: the answer

The riddle hides in a negative compound

The heart of the riddle is a negative compound, the *nañ* compound of Chapter 43. a plus loha: not iron. A weapon not made of iron, yet sharp enough to kill. The

listener must work out what it is: fire. A plain word, agni, would have alerted the plotters. The compound conceals it, and only a trained mind decodes it.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
A weapon not of iron	*naÑ* compound: a-loha
The answer: fire	Meaning by inference
Creatures in burrows escape	Description, not the name
Only Yudhiṣṭhira understands	Shared code between speakers

Vidura never names the danger. He describes it by what it is not, and by what survives it. Meaning is carried by structure and inference, not by a single word. The Pāṇḍavas survive because two speakers shared the same grammar of hints.

The AI Lesson

hidden meaning in plain sight

VIDURA	AI
Fire, never named	Implicit meaning
Description by negation	Inference from context
Plotters miss it	Keyword filters miss it
The wise understand	Models must reason, not match

A modern analogy, not a claim about the ancient text.

A system that only looks for keywords would have missed Vidura's warning completely. The word fire never appears. Understanding it requires inference: what is sharp, not made of iron, and burns the forest? Language models are tested on exactly this: meaning that must be reasoned out, not matched.

IN BRIEF

- A weapon not of iron
- a-loha: a negative compound
- Meaning without the word

In front of the plotters, Vidura warned of a weapon not of iron, and of creatures who escape through burrows. A negative compound concealed the word fire. Meaning without the word.

CHAPTER 63

Steady in Battle

Yudhiṣṭhira

युधिष्ठिरः

Now the eldest Pāṇḍava, Yudhiṣṭhira. His name means 'steady in battle'. But it breaks two ordinary rules of compounding, and Pāṇini needed two special sūtras to allow it.

The Steady One

Mahābhārata

Yudhiṣṭhira is the son of Dharma, and the epic's model of composure. He loses his kingdom at dice, and does not break his word. He spends thirteen years in exile, and keeps his patience. In eighteen days of war, he stands firm. His name says exactly this: yudhi *sthiraḥ*, steady in battle.

Building the Name

yudhi + sthira

yudh	battle
yudhi	in battle: locative
yudhi + sthira	ending kept: 6.3.9
yudhi + ṣṭhira	s → *ṣ*: 8.3.95
yudhiṣṭhira	steady in battle

Two special rules make one name

Start with yudh, battle, a word ending in a consonant. Its locative is yudhi, in battle. Normally, when two words form a compound, the case ending of the first is dropped. Here it is kept: yudhi, not yudh. Then the s of sthira, steady, becomes the retroflex *ṣ*, and the th that follows becomes *ṭh*. *yudhiṣṭhira*. Both changes need a rule.

Keeping the Locative

6.3.9
हलदन्तात्सप्तम्याः संज्ञायाम्

haladantāt saptamyāḥ saṃjñāyām

In a name, the locative ending after a stem ending in a consonant or in a is not dropped.

AṢṬĀDHYĀYĪ 6.3.9

The first is *sūtra* 6.3.9. In a proper name, after a stem ending in a consonant or short a, the locative ending is not dropped. yudh ends in a consonant, and Yudhiṣṭhira is a name, so yudhi stays.

The Retroflex ṣ

8.3.95
गवियुधिभ्यां स्थिरः

gaviyudhibhyāṃ sthiraḥ

After gavi and yudhi, the s of sthira becomes *ṣ*: *gaviṣṭhira*, *yudhiṣṭhira*.

AṢṬĀDHYĀYĪ 8.3.95

The second is *sūtra* 8.3.95. After gavi and yudhi, the s of sthira becomes *ṣ*. Pāṇini names the word yudhi in the rule itself. The hero's name is written into the grammar.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
He fights in battle	yudhi: locative kept, 6.3.9
He stays steady	sthira
A name, not a phrase	*saṃjñā*: a proper name
yudhi is named in a *sūtra*	8.3.95

The name keeps its locative because it is a name, a *saṃjñā*. And its sound changes because Pāṇini listed yudhi by name. The steadiness of the hero is matched by the stability of the form: it does not reduce like an ordinary compound.

The AI Lesson

named-entity exceptions

PĀṆINI	AI
Names keep their form	Named entities are special
Rule limited to *saṃjñā*	Entity-aware processing
Word listed in the rule	Lexical exceptions
General rule elsewhere	Default behaviour otherwise

A modern analogy, not a claim about the ancient text.

Language systems treat names differently: a name should not be 'corrected' into an ordinary phrase. Pāṇini does the same. The rule applies only in a *saṃjñā*, a name, and some words are listed individually. General rules for ordinary words; scoped exceptions for names.

IN BRIEF

- yudhi *sthiraḥ*: steady in battle
- 6.3.9 keeps the locative
- 8.3.95 turns s into *ṣ*

Yudhiṣṭhira stood steady in battle, and his name says so. Rule 6.3.9 keeps the locative yudhi; rule 8.3.95 turns the s into ṣ. A hero's name, written into the grammar.

CHAPTER 64

Heroes Inside a Sūtra

Vāsudeva and Arjuna

वासुदेवार्जुनौ

Now two heroes of the Mahābhārata appear together, by name, inside a single sūtra of Pāṇini. The rule is about devotion, and it is one of the oldest witnesses to the worship of Kṛṣṇa.

The Charioteer and the Archer

Mahābhārata

Kṛṣṇa is called Vāsudeva, the son of Vasudeva. Arjuna is the great archer of the Pāṇḍavas. The epic calls them inseparable, and at Kurukṣetra they ride one chariot, Kṛṣṇa driving and Arjuna fighting. Their pairing is so famous that it reached the grammar.

Devotees of the Two

> **4.3.98**
> **वासुदेवार्जुनाभ्यां वुन्**
>
> *vāsudevārjunābhyāṃ vun*
>
> After Vāsudeva and Arjuna, the suffix vuN forms a word for ‘one whose devotion is to him’.
>
> AṢṬĀDHYĀYĪ 4.3.98

In the section on devotion, bhakti, Pāṇini says: after the words Vāsudeva and Arjuna, use the suffix vun. The two heroes appear as a dual compound, side by side in a *sūtra*, just as they sit side by side on the chariot.

The Devotee's Name

vun → aka

vāsudeva + vun	devotion suffix
vāsudeva + aka	vu → aka: 7.1.1
vāsudevaka	devotee of Vāsudeva
arjunaka	devotee of Arjuna

7.1.1 yuvor anākau

The suffix vun carries a marker n. Its vu is replaced by aka, by rule 7.1.1, yuvor *anākau*. So a devotee of Vāsudeva is a *vāsudevaka*. And a devotee of Arjuna is an arjunaka. Pāṇini records that people were called by the hero they were devoted to.

Patañjali's Question

Mahābhāṣya on 4.3.98

Patañjali asks a sharp question. Vāsudeva is a *kṣatriya* name, and the very next rule already covers *kṣatriya* names. So why does Pāṇini mention Vāsudeva separately? Patañjali answers that here the word is not merely a clan name. It is the name of the revered one, tatrabhavat. A grammarian's question about redundancy becomes a witness to devotion.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Kṛṣṇa and Arjuna together	*vāsudevārjunau*: a dual pair
People devoted to them	bhakti section
Devotee of Vāsudeva	*vāsudevaka*, by vun
The revered one	Patañjali's answer

The epic pair appears as a pair in the *sūtra*. The devotion they inspired becomes a suffix. And the commentator's reasoning shows that, by his time, Vāsudeva was worshipped. Grammar preserves history that no chronicle recorded.

The AI Lesson

reading data for history

PĀṆINI'S RULE	AI
Rule exists for real usage	Data reflects its world
Why list it separately?	Anomaly detection
Redundancy explained by meaning	Explaining outliers
History inferred from grammar	Provenance from patterns

A modern analogy, not a claim about the ancient text.

Patañjali noticed a redundancy, and asked why it was there. Data scientists do the same: an unexpected entry in a dataset is often the most informative one. Explaining the outlier revealed a fact about the world that produced the data.

IN BRIEF

- *vāsudevārjunābhyāṃ* vun
- *vāsudevaka*, arjunaka
- Devotion preserved in a *sūtra*

Kṛṣṇa and Arjuna ride one chariot, and stand in one sūtra. Their devotees are vāsudevaka and arjunaka, and Patañjali explains why Vāsudeva is named apart. Devotion, preserved in a sūtra.

CHAPTER 65

Names of a Lineage

Janamejaya

जनमेजयः

Now the king for whom the whole Mahābhārata is recited: Janamejaya, great-grandson of Arjuna. His name and his family title are both built by rules that Pāṇini states, with his very name as the example.

The Serpent Sacrifice

Mahābhārata, Ādiparvan

King Parīkṣit, grandson of Arjuna, dies from the bite of the serpent Takṣaka. His son Janamejaya performs a great sacrifice to draw every serpent into the fire. Serpents fall by the thousand into the flames. The young sage Āstīka persuades the king to stop. And during the pauses of that sacrifice, Vaiśampāyana recites to Janamejaya the story of his ancestors: the Mahābhārata.

One Who Makes People Tremble

janam + ej + khaś

jana + ejaya	people + make tremble
+ khaś	3.2.28
janam-ejaya	m inserted: 6.3.67
janamejaya	he who makes men tremble

3.2.28 ejeḥ khaś

The root ej means to tremble. Its causative, ejayati, means to make tremble. Pāṇini's rule 3.2.28, *ejeḥ khaś*, adds the suffix *khaś* after this causative, with its object in front: one who makes something tremble. Before a suffix marked with kh, rule 6.3.67 inserts an m after the first word: jana becomes janam. janamejaya: he who makes people tremble. The commentary on this very rule gives janamejaya as its example.

Son of Parīkṣit

the lineage title

parīkṣit	the father
+ *aṇ*	patronymic: 4.1.114
pārīkṣita	first vowel lengthened
Pārīkṣita Janamejaya	the king's full title

4.1.114 ṛṣyandhakavṛṣṇikurubhyaś ca

The epic often calls him Pārīkṣita, son of Parīkṣit. Rule 4.1.114 gives the patronymic suffix *aṇ* for descendants in the families of seers, the Andhakas, the Vṛṣṇis and the Kurus. Parīkṣit is a Kuru, so *aṇ* applies, and the first vowel is strengthened: *pārīkṣita*. The same rule gives *vāsudeva* for the Vṛṣṇi Kṛṣṇa, and *nākula* for the son of Nakula. One rule maps the epic's families.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
A king who makes serpents tremble	janamejaya: 3.2.28
m between the words	6.3.67
Son of Parīkṣit	*pārīkṣita*: 4.1.114
A Kuru, like Vāsudeva a Vṛṣṇi	Clan names in one rule

The king who made the serpents tremble carries a name that means exactly that. And his family title comes from a rule that lists the very clans of the Mahābhārata: Kurus, Vṛṣṇis and Andhakas. The epic's genealogy is written in Pāṇini's suffixes.

The AI Lesson

structured knowledge

PĀṆINI	AI
Patronymic suffix	Relation: child-of
Clan list in the rule	Entity types
pārīkṣita = son of Parīkṣit	A knowledge-graph edge
Name decodes to relation	Extracting facts from text

A modern analogy, not a claim about the ancient text.

A knowledge graph stores facts as relations: this person is the child of that one. Sanskrit patronymics encode the relation in the word itself. *pārīkṣita* already

means: son of Parīkṣit. Reading Sanskrit names, a system could extract a family tree from the forms alone.

IN BRIEF

- janamejaya: he makes men tremble
- *pārīkṣita*: son of Parīkṣit
- Lineage written in suffixes

Janamejaya, who made the serpents tremble, heard the epic of his ancestors. His name is built by rule 3.2.28, and his title Pārīkṣita by rule 4.1.114. Lineage, written in suffixes.

CHAPTER 66

Arjuna's Ten Names

Nāmahetavaḥ

नामहेतवः

Now Arjuna, in disguise at the court of Virāṭa, must prove who he is. He does it by listing his ten names, and giving the reason for each one.

The Eunuch Charioteer

Mahābhārata, Virāṭaparvan

In the thirteenth year of exile, the Pāṇḍavas must live unrecognised. Arjuna serves at Virāṭa's court as Bṛhannaḍā, a eunuch dance teacher. When the Kauravas raid the kingdom's cattle, he drives the chariot for the young prince Uttara. Seeing the enemy army, Uttara panics. Arjuna takes up his bow, the Gāṇḍīva. Uttara asks: who are you really? Arjuna answers with ten names.

The Ten Names

each with its reason

Dhanañjaya, because he conquered kings and won their wealth. Vijaya, because he always returns victorious. Śvetavāhana, because white horses draw his chariot. Kirīṭin, because Indra placed a crown on his head. Savyasācin, because he draws the bow with his left hand as well as his right. Jiṣṇu, the conqueror; Bībhatsu, because he never does a loathsome deed in battle; Phalguna, born under the Phalgunī stars; Kṛṣṇa, for his dark complexion; and Arjuna, the bright one. Uttara now believes him. Each name was proof, because each came with its reason.

Jiṣṇu: The Conqueror

ji + gsnu

ji	to conquer
ji + gsnu	tendency suffix
ji + ṣṇu	s → *ṣ*, n → *ṇ*
jiṣṇu	one who conquers

3.2.139 glājisthaś ca gsnuḥ

Three of the names show Pāṇini at work. First, Jiṣṇu. Rule 3.2.139, *glājisthaś* ca *gsnuḥ*, adds the suffix gsnu, 'having the habit of', after the roots *glā*, ji and *sthā*. The s becomes *ṣ* after i, and the n becomes *ṇ*: *jiṣṇu*, one whose nature is to conquer.

Dhanañjaya and Bībhatsu

two more rules

dhanam + *ji* + *khac*	3.2.46: in names
dhanañjaya	winner of wealth
badh → *bībhats-*	desiderative: 3.1.6
bībhatsu	+ u: 3.2.168

Names built by rule, explained by story

Dhanañjaya: rule 3.2.46 allows the root ji with the suffix khac in names, with its object in front, and again an m is inserted: dhanam, jaya. Bībhatsu: rule 3.1.6 forms a desiderative from badh with a lengthened reduplication, *bībhatsa*, to feel aversion. Rule 3.2.168 then adds u: *bībhatsu*, one who shrinks from what is loathsome.

Story and Grammar

the missing link

ARJUNA'S REASON	THE GRAMMAR
He conquers	*jiṣṇu*: 3.2.139
He won kings' wealth	*dhanañjaya*: 3.2.46
He shuns loathsome deeds	*bībhatsu*: 3.1.6, 3.2.168
Each name has a cause	*nāmahetu*

Set Arjuna's explanations beside the grammar. Every reason he gives matches the meaning that Pāṇini's rules build into the form. The epic offers the story behind each name; the grammar offers the structure. Together they make the names transparent.

The AI Lesson

identity by evidence

ARJUNA	AI
Ten names, one person	Entity resolution
A reason for each	Evidence for each alias
Uttara is convinced	Verified identity
Names built by rule	Interpretable features

A modern analogy, not a claim about the ancient text.

One hero, ten names. Systems that read text must work out that different names refer to one entity. Arjuna does it explicitly: each alias, with the evidence that links it to him. Identity is established not by assertion, but by reasons that can be checked.

IN BRIEF

- Ten names, ten reasons
- *jiṣṇu*, *dhanañjaya*, *bībhatsu*
- Identity proved by explanation

Arjuna proved who he was by explaining each of his ten names. Jiṣṇu, Dhanañjaya, Bībhatsu: each is built by a rule of Pāṇini, and each matches its reason. Identity, proved by explanation.

CHAPTER 67

Of Compounds I Am the Dvandva

Gītā 10.33

द्वन्द्वः सामासिकस्य च

Now, on the battlefield, Kṛṣṇa describes his own presence in the world, and he reaches for grammar. Among letters, he says, I am the letter a. Among compounds, I am the dvandva.

The Vision of Glories

Bhagavad Gītā 10

In the tenth chapter of the Bhagavad Gītā, Arjuna asks: in what forms should I contemplate you? Kṛṣṇa answers with his *vibhūtis*, his glories: in each class of things, he is the foremost. Among mountains he is Meru; among rivers, the Gaṅgā; among seers, Bhṛgu. And then, among the elements of language itself.

Kṛṣṇa's Grammar

> अक्षराणामकारोऽस्मि
> द्वन्द्वः सामासिकस्य च
>
> *akṣarāṇām akāro 'smi*
> *dvandvaḥ sāmāsikasya ca*
>
> Among letters I am the letter a, and among compounds, the dvandva.
>
> BHAGAVAD GĪTĀ 10.33

Among letters, I am the letter a; and of the compound kinds, I am the dvandva, the copulative compound.

The Dvandva

> **2.2.29**
> **चार्थे द्वन्द्वः**
>
> *cārthe dvandvaḥ*
>
> Words joined in the sense of 'and' form a dvandva compound.
> AṢṬĀDHYĀYĪ 2.2.29

Pāṇini defines it in *sūtra* 2.2.29. In the sense of ca, 'and', the compound is a dvandva. Rāma and Kṛṣṇa: *rāmakṛṣṇau*. Every member stands as an equal. No word is subordinate to another.

Why the Dvandva?

equality of members

tatpuruṣa	last member chief
avyayībhāva	first member chief
bahuvrīhi	an outside thing chief
dvandva	all members chief

Only in the dvandva are all members equal

The grammar of compounds shows what is special about it. In a *tatpuruṣa*, the last member is the main one. In an *avyayībhāva*, the first. In a *bahuvrīhi*, the meaning lies outside the compound altogether. Only in the dvandva does every member keep its full meaning. It is the compound of equality, and that is the one Kṛṣṇa names.

Story and Grammar

the missing link

IN THE GĪTĀ	IN THE GRAMMAR
I am the letter a	a: first sound, a i *uṆ*
I am the dvandva	*cārthe dvandvaḥ*, 2.2.29
Foremost of each class	The compound of equals
God in the grammar	Language as *vibhūti*

The letter a opens the first of the Śiva Sūtras, and, as Chapter 27 showed, the Āraṇyaka declares that a is all speech. The dvandva is the compound in which all

parts are equally present. Kṛṣṇa's two choices describe the same idea: presence in everything, without hierarchy.

The AI Lesson

coordination versus modification

COMPOUNDS	AI PARSING
tatpuruṣa: X modifies Y	Head–modifier relation
dvandva: X and Y	Coordination
bahuvrīhi: refers outside	Exocentric reference
Type decides meaning	Structure decides meaning

A modern analogy, not a claim about the ancient text.

Parsers must tell apart a modifier from a coordinate: 'steel bridge' is not 'steel and bridge'. Sanskrit names the alternatives exactly, and the dvandva is the coordinate case. Getting the compound type wrong changes the meaning, for an ancient reader or a modern model.

IN BRIEF

- Among letters, the a
- Among compounds, the dvandva
- The compound of equals

Among letters, Kṛṣṇa is the a; among compounds, the dvandva. Pāṇini defines it in four syllables: cārthe dvandvaḥ, in the sense of 'and'. The compound of equals.

CHAPTER 68

The Unborn Critic

Aṣṭāvakra

अष्टावक्रः

Now a child who corrects his father's Vedic recitation, while still in the womb. He is cursed for it, and the curse becomes his name, with a vowel that only a special rule allows.

The Voice from the Womb

Mahābhārata 3.132

The student Kahoḍa sits up through the night reciting the Veda, while his wife Sujātā is pregnant. From inside the womb, the child speaks: father, all night long you have been reciting incorrectly. He has learned the Veda in the womb, and he hears the mistakes. Insulted before his students, Kahoḍa curses him: since you speak while still in the womb, you will be born bent in eight places. The child is born with eight crooked limbs.

The Contest at Janaka's Court

Mahābhārata 3.133–134

Kahoḍa goes to King Janaka's court and is defeated in debate by the court scholar Bandin. The losers are drowned. Twelve years later, Aṣṭāvakra learns what happened and goes to the court himself. The gatekeepers mock the crooked boy. Janaka is won over by his answers. Bandin and Aṣṭāvakra duel in verses on the numbers, from one to thirteen. Bandin falls silent at thirteen. He is defeated, and Kahoḍa and the drowned scholars return from the waters.

Eight Bends

aṣṭan + vakra

aṣṭau vakrāṇi yasya	whose bends are eight
aṣṭan + vakra	*bahuvrīhi*
aṣṭa + vakra	final n drops
aṣṭāvakra	a → *ā*: 6.3.125

6.3.125 aṣṭanaḥ saṃjñāyām

The name is a *bahuvrīhi*: *aṣṭau vakrāṇi* yasya, he whose bends are eight. *aṣṭan*, eight, loses its final n in the compound, giving *aṣṭa*. But the name is not *aṣṭavakra*. It is *aṣṭāvakra*, with a long *ā*. That long vowel needs a rule: 6.3.125, *aṣṭanaḥ saṃjñāyām*. In a name, *aṣṭan* lengthens its final vowel. The commentary gives *aṣṭāvakra* as an example.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
He hears wrong recitation	Correct form matters
Bent in eight places	*aṣṭau vakrāṇi* yasya
The curse becomes a name	*saṃjñā*: a proper name
A special long *ā*	6.3.125

The boy was cursed for caring about correct form, and his name carries an irregular form that is perfectly correct. Because it is a name, rule 6.3.125 lengthens the vowel. An ordinary description would be *aṣṭavakra*. The name is *aṣṭāvakra*. The critic of wrong recitation bears a name that only a precise grammar can justify.

The AI Lesson

the small error detector

AṢṬĀVAKRA	AI
Hears every slip	Error detection
The expert resents it	Feedback can be unwelcome
Yet he is right	Small models catch real errors
He wins the debate	Verification beats authority

A modern analogy, not a claim about the ancient text.

The smallest voice in the room, unborn, found the errors that the reciter missed. In AI, smaller verifier models are often used to check the output of larger ones. Being correct does not depend on size or seniority, and the epic sides with the critic.

IN BRIEF

- He corrected his father from the womb
- *aṣṭau vakrāṇi* yasya
- A name with a special vowel

From the womb, Aṣṭāvakra heard his father's mistakes, and was cursed with eight bends. His name is a bahuvrīhi, and its long ā comes from rule 6.3.125. A name with a special vowel.

CHAPTER 69

“Oh, Don’t!”

Umā

उमा

Now a mother’s cry becomes the name of a goddess. Pārvatī wants to undertake severe austerities. Her mother calls out two syllables: u, mā. Oh, don’t!

The Daughter of the Mountain

Kālidāsa, Kumārasambhava 1

In the first canto of Kālidāsa’s Kumārasambhava, the goddess is born as the daughter of the mountain king Himālaya and Menā. She is called Pārvatī, daughter of the mountain. From childhood her heart is set on Śiva, and she wishes to win him by austerity. Her mother, fearing for her delicate daughter, tries to stop her.

The Name from a Cry

> उमेति मात्रा तपसो निषिद्धा
> पश्चादुमाख्यां सुमुखी जगाम
>
> *umeti mātrā tapaso niṣiddhā*
> *paścād umākhyāṃ sumukhī jagāma*
>
> Forbidden from austerity by her mother with the words ‘u mā’, ‘oh, don’t’, the fair-faced one later came to be called Umā.
>
> KUMĀRASAMBHAVA 1.26

Held back from austerity by her mother saying ‘u *mā*’, ‘oh, don’t’, the fair-faced girl afterwards came to be called Umā.

Two Syllables

u + mā

u	oh! (a call)
mā	don’t (prohibition)
u mā iti	‘oh, don’t’, quoted
Umā	the name

A sentence frozen into a name

u is an interjection, a call to the child. *mā* is the particle of prohibition, the same *mā* we met with Vālmīki in Chapter 47. The mother's words are quoted with iti: umeti, 'u *mā*', so she said. A complete sentence, two syllables long, freezes into a proper name.

Warding Off

> **1.4.27**
> **वारणार्थानामीप्सितः**
>
> *vāraṇārthānām īpsitaḥ*
>
> With verbs of preventing, the thing one is kept away from is the source, *apādāna*, in the ablative.
>
> AṢṬĀDHYĀYĪ 1.4.27

Now look at the case of tapas. Kālidāsa writes tapaso *niṣiddhā*: forbidden from austerity, in the ablative. Pāṇini's rule 1.4.27: *vāraṇārthānām īpsitaḥ*. With verbs of warding off, the thing that is desired, and from which one is kept away, counts as the source, *apādāna*. The standard example: yavebhyo *gāṃ vārayati*, he keeps the cow from the barley. Pārvatī is kept from austerity, as the cow is kept from the barley she wants.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
She desires austerity	*īpsita*: the desired thing
Her mother holds her back	*vāraṇa*: warding off
tapasaḥ: from austerity	Ablative, 1.4.27
'u *mā*' becomes Umā	A quoted sentence as a name

The desire, the prevention, and the ablative case all line up exactly with rule 1.4.27. And the words of prevention themselves become her name. She did not obey. She went on to the austerities that won Śiva, as the poem goes on to tell.

The AI Lesson

when a phrase becomes a token

UMĀ	AI
u + *mā*: a sentence	A frequent phrase
Frozen as a name	Merged into one token
Origin still recoverable	Etymology in the data
Meaning shifts	Usage defines the token

A modern analogy, not a claim about the ancient text.

Tokenizers merge sequences that occur together often until they become a single unit. 'U *mā'* was a sentence; then it became one word, a name, used without thought of its origin. Language keeps freezing phrases into words, and every model inherits those frozen histories.

IN BRIEF

- 'u *mā'*: oh, don't
- *tapasaḥ*: ablative, 1.4.27
- A prohibition became a name

Her mother cried 'u mā', oh, don't, and the cry became the name Umā. She was kept from austerity in the ablative, exactly as rule 1.4.27 requires. A prohibition became a name.

CHAPTER 70

Milking the Earth

Dvikarmaka

द्विकर्मकः

Now the opening of the same poem, where the mountains milk the Earth like a cow. In Sanskrit, you milk the cow, and you milk the milk. The verb takes two objects.

King Pṛthu and the Cow Earth

the Purāṇic story

In the old story, the Earth hid her riches and the people starved. King Pṛthu pursued her with his bow, and she took the form of a cow. She agreed to give, if each kind of being would milk her with a calf and a milker of its own. Gods, seers, serpents and mountains each milked from her what they needed. And the Earth was called Pṛthvī, after Pṛthu.

The Mountains Milk

> यं सर्वशैलाः परिकल्प्य वत्सं
> मेरौ स्थिते दोग्धरि दोहदक्षे
> भास्वन्ति रत्नानि महौषधीश्च
> पृथूपदिष्टां दुदुहुर्धरित्रीम्
>
> *yaṃ sarvaśailāḥ parikalpya vatsaṃ*
> *merau sthite dogdhari dohadakṣe*
> *bhāsvanti ratnāni mahauṣadhīś ca*
> *pṛthūpadiṣṭāṃ duduhur dharitrīm*
>
> Making Himālaya the calf, with Meru, skilled at milking, as the milker, all the mountains milked the Earth, as Pṛthu had taught, for shining gems and great herbs.
>
> KUMĀRASAMBHAVA 1.2

Kālidāsa opens the Kumārasambhava with this story. Making Himālaya the calf, with Meru, skilled in milking, as the milker, all the mountains milked the Earth, as Pṛthu had taught, for shining gems and great healing herbs.

Two Objects

duduhuḥ: they milked

duduhuḥ	they milked
dharitrīm	the Earth: object 1
ratnāni, mahauṣadhīḥ	gems, herbs: object 2
both accusative	two karmas

One verb, two accusatives

Look at the verb: *duduhuḥ*, they milked. What did they milk? *dharitrīm*, the Earth, in the accusative. And what did they milk out? *ratnāni* and *mahauṣadhīḥ*, the gems and the herbs, also in the accusative. One verb, two objects. The poet's grammar is as exact as his image.

The Unstated Object

> **1.4.51**
> अकथितं च
>
> *akathitaṃ ca*
>
> A participant not otherwise classified is also treated as karma, the object: *gāṃ* dogdhi *payaḥ*.
>
> AṢṬĀDHYĀYĪ 1.4.51

Pāṇini's rule is 1.4.51, two words long: *akathitaṃ* ca. A participant that is not otherwise specified is also called karma, the object. The commentators list the verbs that take this second object, with duh, to milk, at their head. The classic example: *gāṃ* dogdhi *payaḥ*, he milks the cow for milk. The cow, strictly a source, is treated as an object.

Story and Grammar

the missing link

IN THE POEM	IN THE GRAMMAR
The Earth as a cow	*gām*: the source as object
Gems and herbs as milk	*payaḥ*: the main object
duduhuḥ dharitrīm ratnāni	Two accusatives
Rule for the cow	*akathitaṃ* ca, 1.4.51

The Earth stands exactly where the cow stands in Pāṇini's example; the gems stand where the milk stands. Kālidāsa turns the grammarian's textbook sentence into the opening image of an epic poem.

The AI Lesson

argument structure

SANSKRIT	AI
duh takes two objects	Verb valency
Same case, different roles	Form ≠ role
Rule assigns the role	Semantic parsing
List of such verbs	Verb lexicons

A modern analogy, not a claim about the ancient text.

Two accusatives, but two different roles: one is the source, one is the thing obtained. A parser that reads case endings alone would confuse them. It needs to know the verb's pattern, its valency. Sanskrit grammarians kept exactly such a list of two-object verbs, the ancestor of modern verb lexicons.

IN BRIEF

- The mountains milked the Earth
- for gems and herbs
- duh: one verb, two objects

The mountains milked the Earth for gems and herbs, as Pṛthu had taught. The verb duh takes two objects, by rule 1.4.51, akathitaṃ ca. One verb, two objects.

CHAPTER 71

Bali and the Milk Ocean

Dvikarmaka

द्विकर्मकः

The grammarians did not stop at milking. They kept a list of sixteen verbs that take two objects. And to teach them, they chose examples from the Purāṇas: Bali and the dwarf, and the churning of the milk ocean.

The Dwarf's Request

the Vāmana story

The asura king Bali has conquered the three worlds, and is famous for never refusing a request. Viṣṇu comes to his sacrifice as Vāmana, a young dwarf student. He asks Bali for the earth, just three steps of it. Bali agrees. The dwarf grows to cosmic size, and with three strides covers earth, sky and heaven.

The Churning

amṛta-manthana

Seeking the nectar of immortality, the gods and asuras churn the ocean of milk. Mount Mandara is the churning rod, and the serpent Vāsuki the rope. Poison, jewels, the goddess Lakṣmī, and at last the nectar, *sudhā*, rise from the ocean.

The Sixteen Verbs

> दुह्याच्पच्दण्ड्रुधिप्रच्छि-
> चिब्रूशासुजिमथ्मुषाम्
> कर्मयुक् स्यादकथितं
> तथा स्यान्नीहृकृष्वहाम्
>
> *duhyācpacdaṇḍrudhipracchi-*
> *cibrūśāsujimathmuṣām*
> *karmayuk syād akathitaṃ*
> *tathā syān nīhṛkṛṣvahām*
>
> With duh, yāc, pac, daṇḍ, rudh, prach, ci, brū, śās, ji, math and muṣ, and likewise nī, hṛ, kṛṣ and vah, the unstated participant joins the object.
>
> SIDDHĀNTAKAUMUDĪ · ON 1.4.51

The grammarians memorised the two-object verbs in a verse quoted in the Siddhāntakaumudī under rule 1.4.51. To milk, to ask, to cook, to fine, to confine, to question, to gather, to tell, to teach, to win, to churn, to rob; and to lead, carry, drag and bear: with these, the unstated participant becomes a second object.

Bali Asked for the Earth

yāc: to ask

baliṃ yācate	asks Bali
vasudhām	for the earth
baliṃ … vasudhām	two accusatives
yāc	a two-object verb

baliṃ yācate vasudhām

The example for *yāc*, to ask, is *baliṃ yācate vasudhām*: he asks Bali for the earth. Bali, the one asked, is in the accusative. The earth, the thing asked for, is also in the accusative. The whole Vāmana story, compressed into a grammar example.

Churning the Ocean for Nectar

math: to churn

kṣīranidhiṃ	the milk ocean
sudhāṃ	the nectar
mathnāti	churns
two accusatives	source and product

sudhāṃ kṣīranidhiṃ mathnāti

The example for math, to churn, is *sudhāṃ kṣīranidhiṃ mathnāti*: he churns the milk ocean for nectar. Ocean and nectar both stand in the accusative, like the cow and the milk. The churning of the ocean becomes the textbook sentence for one verb of the list.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Vāmana asks Bali	*baliṃ*: the one asked
for the earth	*vasudhām*: the thing asked
Gods churn the ocean	*kṣīranidhim*: the source
for nectar	*sudhām*: the product

Every Indian student of grammar learned these two-object verbs through two of the most famous myths. The stories made the rule memorable, and the rule made the stories exact: who was asked, what was asked for, what was churned, what was won.

The AI Lesson

memorable training examples

GRAMMARIANS	AI
A verse listing sixteen verbs	A compact specification
Famous myths as examples	Canonical test cases
One example per verb	Coverage of each case
Learned by every student	Shared benchmarks

A modern analogy, not a claim about the ancient text.

The tradition paired a compact list with memorable examples, one per verb. AI benchmarks are built the same way: a specification, and canonical test cases that

everyone knows. Good examples are part of the rule. They teach what the definition alone cannot.

IN BRIEF

- *baliṃ yācate vasudhām*
- *sudhāṃ kṣīranidhiṃ mathnāti*
- Myths as grammar examples

He asks Bali for the earth. He churns the milk ocean for nectar. Two accusatives each time, by the sixteen-verb list under rule 1.4.51. Myths as grammar examples.

Part IV

Purāṇas and Story Literature

How grammar came down

Chapters 72–91

CHAPTER 72

The Waters' Abode

Nārāyaṇa

नारायणः

Now we turn to the Purāṇic and Smṛti stories, beginning at the very beginning of creation. Before anything else existed, there were the waters, and one who rested on them.

In the Beginning

Manusmṛti 1

The first chapter of the Manusmṛti describes the world before creation: darkness, unknowable, without distinguishing marks. The self-existent Lord appears, dispelling the darkness. Wishing to create, he first creates the waters. He places his seed in them, and it becomes a golden egg, bright as the sun. The text then pauses to explain one of his names.

Why He Is Nārāyaṇa

> आपो नारा इति प्रोक्ता
> आपो वै नरसूनवः
> ता यदस्यायनं पूर्वं
> तेन नारायणः स्मृतः
>
> *āpo nārā iti proktā*
> *āpo vai narasūnavaḥ*
> *tā yad asyāyanaṃ pūrvaṃ*
> *tena nārāyaṇaḥ smṛtaḥ*
>
> The waters are called nārāḥ, for the waters are the offspring of Nara. Because they were his first abode, ayana, he is known as Nārāyaṇa.
>
> MANUSMṚTI 1.10

The waters are called *nārāḥ*, because the waters are the offspring of Nara. Since they were his first resting place, his ayana, he is called Nārāyaṇa.

Three Steps to the Name

nara → nāra → nārāyaṇa

nara + aṇ	offspring of Nara
nāra	the waters
nāra + ayana	abode of the waters
nārāyaṇa	n → *ṇ*: 8.4.3

8.4.3 pūrvapadāt saṃjñāyām agaḥ

The verse itself gives a derivation in three steps. First, nara plus the descendant suffix *aṇ*, by rule 4.1.92, *tasyāpatyam*: with the first vowel strengthened, *nāra*, offspring of Nara. The waters. Second, *nāra* plus ayana, abode: the one whose abode is the waters. Third, the n of ayana becomes retroflex *ṇ*, because an r stands in the first member. Rule 8.4.3 makes this change in names: *nārāyaṇa*.

The Retroflex ṇ in Names

> **8.4.3**
> **पूर्वपदात्संज्ञायामगः**
>
> *pūrvapadāt saṃjñāyām agaḥ*
>
> In a name, after an r or *ṣ* in the first member, n becomes *ṇ*, unless a g intervenes.
>
> AṢṬĀDHYĀYĪ 8.4.3

In a name, an r or *ṣ* in the first member turns a following n into *ṇ*, unless a g comes between. So *nāra* plus ayana gives Nārāyaṇa, not *nārāyana*.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Waters born of Nara	nara + *aṇ* = *nāra*
His first abode	ayana
He rests on the waters	*nāra* + ayana
The name Nārāyaṇa	*ṇ* by 8.4.3

The creation story is told through a derivation: who the waters are, what the abode is, and how the name is built. Even the retroflex *ṇ* of the name follows a rule for names. Every sound of Nārāyaṇa is accounted for.

The AI Lesson

compositional meaning

NĀRĀYAṆA	AI
nara → *nāra*	Derived feature
nāra + ayana	Composition
n → *ṇ* in names	Context-sensitive rule
Meaning = parts + rules	Compositional generalisation

A modern analogy, not a claim about the ancient text.

Compositional generalisation is a hard test for AI: can a system build the meaning of a new whole from known parts? The verse does exactly this: a derived word, plus another word, plus a sound rule, yields a name and its meaning. Meaning is built, not just memorised.

IN BRIEF

- The waters are *nārāḥ*
- Their abode: *nārāyaṇa*
- Creation told as derivation

The waters were the offspring of Nara, and their first abode was the Lord. nara, nāra, nāra plus ayana, and the ṇ of rule 8.4.3: Nārāyaṇa. Creation, told as a derivation.

CHAPTER 73

The Two-Letter Instruction

Tapa

तप

Now Brahmā, born on the lotus from that Lord, wants to create the world, and does not know how. He hears a word of two syllables, spoken twice. The Bhāgavata does not say the word. It gives its address in the alphabet.

Brahmā on the Waters

Bhāgavata Purāṇa 2.9

In the second book of the Bhāgavata Purāṇa, Brahmā sits on his lotus seat, the first being, wishing to create. But he cannot find the vision by which the world could be made. As he reflects, he hears from the waters a word of two syllables, spoken twice. The Purāṇa tells us which syllables, in a riddle.

The Riddle

> स्पर्शेषु यत् षोडशमेकविंशं
> निष्किञ्चनानां नृप यद्धनं विदुः
>
> *sparśeṣu yat ṣoḍaśam ekaviṃśaṃ*
> *niṣkiñcanānāṃ nṛpa yad dhanaṃ viduḥ*
>
> The sixteenth and the twenty-first among the stops: that which, O king, is known as the wealth of those who own nothing.
>
> BHĀGAVATA PURĀṆA 2.9.6

The sixteenth and the twenty-first among the *sparśas*, the stop consonants: that which, O king, is called the wealth of those who own nothing.

Counting the Stops

five rows of five

k kh g gh ṅ	1 to 5
c ch j jh ñ	6 to 10
ṭ ṭh ḍ ḍh ṇ	11 to 15
t th d dh n	16: t
p ph b bh m	21: p
t + p	tapa

16th = ta, 21st = pa: tapa

The *sparśas* are the twenty-five stops, arranged in five rows of five, from the throat to the lips. Count them: the velars are one to five, the palatals six to ten, the retroflexes eleven to fifteen. The sixteenth is t, the first dental. The twenty-first is p, the first labial. Ta and pa: tapa. Austerity. The wealth of those who own nothing.

Naming a Row

> **1.1.69**
> अणुदित्सवर्णस्य चाप्रत्ययः
>
> *aṇudit savarṇasya cāpratyayaḥ*
>
> A vowel, a semivowel or h, or a sound marked with u, stands for its whole class: tu means t, th, d, dh, n.
>
> AṢṬĀDHYĀYĪ 1.1.69

Pāṇini also addresses the rows of stops as units. A sound marked with u, like tu or pu, stands for its whole row: tu means the five dentals, pu the five labials. The Purāṇa and the grammar share the same map of sounds, a fixed grid where every consonant has a position.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
The sixteenth stop	t: first of the tu row
The twenty-first stop	p: first of the pu row
Spoken twice: tapa tapa	A command: practise austerity
Brahmā obeys and creates	Sound grid as an index

The first instruction of creation is given as two positions in the ordered alphabet. Brahmā performs austerity for a thousand divine years, and then sees the vision of creation. To decode the word of creation, you must know the grid of phonetics.

The AI Lesson

vocabulary indices

THE PURĀṆA	AI
Sounds in a fixed order	A fixed vocabulary
16 and 21	Token IDs
Decode by position	Lookup in the vocabulary
Ordered by articulation	Structured embeddings

A modern analogy, not a claim about the ancient text.

A language model never sees letters directly. It sees numbers: the positions of tokens in a fixed vocabulary. The Bhāgavata speaks the same way: sixteen and twenty-one, decoded through an agreed order. And the Sanskrit order is not arbitrary. It follows the place of articulation, so position itself carries information.

IN BRIEF

- The 16th and 21st stops
- ta + pa = tapa
- Creation begins with an index

Brahmā heard the sixteenth and the twenty-first of the stops: ta, pa. tapa, austerity, given as positions in the phonetic grid. Creation begins with an index.

CHAPTER 74

Brahmā's Body of Letters

Sparśa and Svara

स्पर्शः स्वरश्च

Now the Bhāgavata goes further. It describes Brahmā's own body as made of the sounds of language. Each class of sounds becomes a part of the creator: his life, his body, his senses, his strength.

The Creator Made of Sound

Bhāgavata Purāṇa 3.12

In the third book of the Bhāgavata, Brahmā creates the world, and from his four mouths come the four Vedas. The metres arise from his skin, his hair and his flesh. And then the Purāṇa assigns each class of speech sounds to a part of his being. The creator's body is the alphabet.

Life and Body

> स्पर्शस्तस्याभवज्जीवः
> स्वरो देह उदाहृतः
>
> *sparśas tasyābhavaj jīvaḥ*
> *svaro deha udāhṛtaḥ*
>
> The stop consonants became his life; the vowels are declared to be his body.
>
> BHĀGAVATA PURĀṆA 3.12

The stops became his life-breath; the vowels are called his body. The verse continues: the sibilants are his senses, the semivowels his strength, and from his play come the seven musical notes.

The Map of Sounds

Purāṇa and grammar

sparśa: stops	his life
svara: vowels	his body
ūṣman: sibilants	his senses
antaḥstha: semivowels	his strength

Four classes, four parts of the creator

The Purāṇa uses the four classes of the phonetic manuals. *sparśa*, the stops, made with full contact: his life. svara, the vowels, which sound by themselves: his body. *ūṣman*, the hot breaths, *ś*, *ṣ*, s and h: his senses. And *antaḥstha*, the in-between sounds, y, r, l and v: his strength. A complete classification of Sanskrit sounds, mapped onto a body.

Pāṇini's Classes

> **1.1.71**
> आदिरन्त्येन सहेता
>
> *ādir antyena sahetā*
>
> A first sound with a final marker names the whole stretch between: ac = vowels, *yaṇ* = semivowels, *śar* = sibilants.
>
> AṢṬĀDHYĀYĪ 1.1.71

Pāṇini names the same classes with short codes, by *sūtra* 1.1.71. A first sound together with a final marker names everything between them in the Śiva Sūtras. ac: all vowels, the Purāṇa's svara. *yaṇ*: the semivowels, its *antaḥstha*. *śar*: the sibilants, its *ūṣman*.

Story and Grammar

the missing link

BRAHMĀ'S BODY	PĀṆINI'S CODE
Vowels: his body	ac
Semivowels: his strength	*yaṇ*
Sibilants: his senses	*śar*
Stops: his life	the five rows: ku cu *ṭu* tu pu

The same four classes appear in both: in the Purāṇa as parts of a body, in Pāṇini as abbreviations. One tradition personifies the sound system; the other compresses it. Both agree on its structure.

The AI Lesson

features of sounds

SANSKRIT	SPEECH AI
Stops, vowels, sibilants	Phonetic classes
Classified by articulation	Articulatory features
ac, *yaṇ*, *śar*	Feature bundles
One body of sounds	One acoustic model

A modern analogy, not a claim about the ancient text.

Speech recognition and synthesis systems group sounds by how they are produced: stops, vowels, fricatives, glides. The Sanskrit tradition had the same classes, defined by contact, openness and breath. Whether described as a creator's body or a feature table, the structure of speech is the same.

IN BRIEF

- Stops: life · Vowels: body
- Sibilants: senses · Semivowels: strength
- The creator made of sound

In the Bhāgavata, the stops are Brahmā's life and the vowels his body. The same classes Pāṇini names ac, yaṇ and śar. The creator, made of sound.

CHAPTER 75

The Ordered Sounds of Creation

Akṣara-Samāmnāya

अक्षरसमाम्नायः

In its last book, the Bhāgavata tells where those letters came from. First a sound in the heart; then Oṃ; then, from Oṃ, the whole ordered alphabet.

The Sound in the Heart

Bhāgavata Purāṇa 12.6

In the twelfth book of the Bhāgavata, the sage Sūta explains how the Vedas came to be. From the space of Brahmā's heart, as he concentrated, a subtle sound arose: *nāda*, heard only in stillness. From that sound came *oṃkāra*, the syllable Oṃ, self-luminous. It has three measures, a, u and m, which the Purāṇa connects with the three qualities, the three Vedas and the three worlds.

From Oṃ, the Alphabet

Bhāgavata Purāṇa 12.6

From Oṃ, Brahmā created the *akṣara-samāmnāya*, the ordered recitation of the sounds. The Purāṇa lists its classes: the semivowels, the sibilants, the vowels and the stops. It distinguishes them by length, short and long. Only with this ordered alphabet in hand did Brahmā utter the four Vedas from his four mouths. The alphabet comes before scripture. Sound must be ordered before it can carry the Veda.

The Same Word in Grammar

akṣara-samāmnāya

nāda	unmanifest sound
oṃ: a + u + m	three measures
akṣara-samāmnāya	the ordered sound list
Śiva Sūtras	Pāṇini's version

The tradition calls Pāṇini's fourteen sūtras by this same name

The term *akṣara-samāmnāya* is a technical word of grammar. The fourteen Śiva Sūtras that open Pāṇini's grammar, the subject of Chapter 78, are called by exactly

this name. The Purāṇa places that same object at the beginning of creation: after Oṃ, before the Vedas.

Short, Long, Prolonged

> **1.2.27**
> ऊकालोऽज्झ्रस्वदीर्घप्लुतः
>
> *ūkālo 'j jhrasvadīrghaplutaḥ*
>
> A vowel lasting the time of u, of *ū*, or of the prolonged u3 is called short, long or prolonged.
>
> AṢṬĀDHYĀYĪ 1.2.27

The Purāṇa speaks of short and long sounds. Pāṇini defines them in *sūtra* 1.2.27. A vowel with the duration of u is short, hrasva; of *ū*, long, *dīrgha*; of the three-measure u, prolonged, pluta. Time is measured in *mātrās*, the same measures into which Oṃ is divided.

Story and Grammar

the missing link

IN THE PURĀṆA	IN THE GRAMMAR
Oṃ with three measures	*mātrā*: unit of length
The ordered sound list	*akṣara-samāmnāya*: Śiva Sūtras
Short and long	hrasva, *dīrgha*, pluta: 1.2.27
Alphabet before Veda	Inventory before rules

Both begin with an ordered inventory of sounds and a measure of time. In the Purāṇa, the Veda can be spoken only after the sounds are ordered. In Pāṇini, rules can be stated only after the sounds are listed. Creation and grammar start the same way.

The AI Lesson

vocabulary first

THE PURĀṆA	AI
Ordered sound list first	Vocabulary built first
Then the Vedas	Then training on text
Sound units measured	Audio frames, durations
Oṃ: the seed	A minimal starting set

A modern analogy, not a claim about the ancient text.

Before a language model can learn anything, its vocabulary must be fixed. The Purāṇa has the same order: first the inventory of sounds, then the texts made from them. Every language system, ancient or modern, rests on its alphabet.

IN BRIEF

- *nāda* → Oṃ → the alphabet
- *akṣara-samāmnāya* before the Veda
- Creation begins with order

From the sound in Brahmā's heart came Oṃ, and from Oṃ the ordered alphabet. The Purāṇa calls it the akṣara-samāmnāya, the grammarians' name for the Śiva Sūtras. Creation begins with order.

CHAPTER 76

Move, Move!

Sarpa, Sarpa

सर्प सर्प

Now a king who rose to the throne of heaven, and fell because of one word. He shouted it as a command, and the sage heard it as a sentence.

A Mortal on Indra's Throne

Devībhāgavata Purāṇa 6

When Indra goes into hiding after killing Vṛtra, the gods need a ruler. They choose a mortal king, Nahuṣa. Power makes him proud, and he demands Indra's queen, Śacī. To delay him, Śacī sets a condition: come to me in a palanquin that no one has ever used, carried by the seers. Nahuṣa yokes the great sages to his palanquin.

The Kick and the Curse

Devībhāgavata Purāṇa 6.9

The sages, unused to such work, move slowly. Eager to reach Śacī, Nahuṣa urges them on: sarpa, sarpa! Move, move! He even touches the sage Agastya with his foot. Agastya takes up the very word: sarpo bhava, be a serpent! Nahuṣa falls from heaven and lives on earth as a great python.

One Root, Two Words

sṛp: to creep, to move

sṛp	to creep, glide
sarpa + hi	imperative, 2nd person
sarpa	hi dropped: 6.4.105
sarpa	noun: the creeper, a serpent

6.4.105 ato heḥ

Both words come from the root *sṛp*, to creep or glide, whose present is sarpati. The imperative 'you, move!' is sarpa plus the ending hi. Rule 6.4.105, ato *heḥ*, drops hi after a stem in short a. So the command is simply sarpa: move! And the same root, with an agent suffix, gives the noun sarpa: the one that creeps, a snake.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
'sarpa!' the king commands	Imperative of *sṛp*
Agastya hears 'serpent'	Noun from *sṛp*
sarpo bhava	Noun + imperative of *bhū*
The command becomes the curse	Homonymy by derivation

Nahuṣa used sarpa as a verb. Agastya returned it as a noun, and added a verb of his own: bhava, become. Because ato *heḥ* makes the imperative identical to the noun, the king's command already contained his punishment. He told the sages to creep; he became the creeper.

The AI Lesson

ambiguous tokens

SARPA	AI
One form, two words	Part-of-speech ambiguity
Verb or noun?	Context decides
Agastya re-reads it	Reinterpretation
Meaning flips the outcome	Disambiguation matters

A modern analogy, not a claim about the ancient text.

In English, 'duck' can be a bird or a command. Taggers in language technology must decide which. sarpa is the Sanskrit case: same form, verb or noun, and the story turns on which reading is chosen. Getting the part of speech right is not a detail. Here it decided a king's fate.

IN BRIEF

- 'sarpa, sarpa': move, move!
- 'sarpo bhava': be a serpent!
- One form, two words

Nahuṣa shouted 'sarpa', move, and Agastya answered 'sarpo bhava', be a serpent. Rule 6.4.105 made the command identical to the noun. One form, two words, and a fall from heaven.

CHAPTER 77

Saved by a Name

Ajāmila

अजामिलः

Now one word saves a man from death. He called out to his little son. But his son was named Nārāyaṇa.

The Fallen Brahmin

Bhāgavata Purāṇa 6.1

Ajāmila was a brahmin of Kānyakubja who abandoned his duties and lived by deceit and theft. He had ten sons. The youngest, whom he loved most, was named Nārāyaṇa. In old age, at the hour of death, three terrifying messengers of Yama came to drag him away. In fear, he cried out to the child playing nearby: Nārāyaṇa!

The Two Messengers

Bhāgavata Purāṇa 6.1–2

At once, the messengers of Viṣṇu appear and stop Yama's servants. Yama's messengers protest: this man is a sinner, and he called only his son. Viṣṇu's messengers answer that the name was uttered, and that is enough, whatever he intended. Ajāmila is released. He spends the rest of his life in devotion at Haridvāra.

Any Way It Is Said

> साङ्केत्यं पारिहास्यं वा
> स्तोभं हेलनमेव वा
> वैकुण्ठनामग्रहणम्
> अशेषाघहरं विदुः
>
> *sāṅketyaṃ pārihāsyaṃ vā*
> *stobhaṃ helanam eva vā*
> *vaikuṇṭhanāmagrahaṇam*
> *aśeṣāghaharaṃ viduḥ*
>
> Uttering the name of Vaikuṇṭha, whether to refer to someone else, in jest, as a musical filler, or even in contempt, is known to remove all sin.
>
> BHĀGAVATA PURĀṆA 6.2.14

Viṣṇu's messengers state the principle. Saying the name of the Lord, even to indicate something else, in jest, as a filler syllable in a chant, or in contempt, removes every sin.

A Word Means Its Own Form

> **1.1.68**
> स्वं रूपं शब्दस्याशब्दसंज्ञा
>
> *svaṃ rūpaṃ śabdasyāśabdasaṃjñā*
>
> In the grammar, a word stands for its own form, unless it is a technical term.
>
> AṢṬĀDHYĀYĪ 1.1.68

The grammar has its own version of this distinction between a word and what it refers to. Sūtra 1.1.68: *svaṃ rūpaṃ śabdasyāśabdasaṃjñā*. In a rule, a word refers to its own form, not to its meaning. When a rule says agni, it means the word agni, not fire. The form itself is the object.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
He means his son	Intended referent
He says 'Nārāyaṇa'	The form of the word
The name still works	*svaṃ rūpaṃ*: the form counts
sāṅketya: used for another	Reference ≠ form

Ajāmila's intention pointed to his son. But the sound he uttered was the Lord's name. The Purāṇa says the form is effective regardless of the referent, just as Pāṇini's rule makes a word stand for its own form. The Bhāgavata even uses the grammarians' word *saṅketa*, the convention linking a word to its meaning.

The AI Lesson

use and mention

AJĀMILA	AI
Calling a son named Nārāyaṇa	Same string, different entity
The form vs the referent	Use vs mention
1.1.68: the word itself	Quoting a token
Context resolves reference	Entity linking

A modern analogy, not a claim about the ancient text.

Philosophers distinguish using a word from mentioning it. AI systems must distinguish a string from the entity it names. 'Nārāyaṇa' the boy and 'Nārāyaṇa' the Lord share a string. Entity linking decides which one is meant. The Bhāgavata makes a striking choice: here, the string itself is what matters.

IN BRIEF

- He called his son, Nārāyaṇa
- The name saved him
- The form itself is effective

Ajāmila called his son, and the son's name was Nārāyaṇa. Like a word in Pāṇini's rules, the form itself counted, not the intention. Saved by a name.

CHAPTER 78

Fourteen Drumbeats

Śiva Sūtras

शिवसूत्राणि

Now the most famous story of Sanskrit grammar. At the end of his cosmic dance, Śiva beats his drum fourteen times, and the sounds become the first fourteen lines of grammar.

The End of the Dance

Nandikeśvara's Kāśikā

Śiva, as Naṭarāja, the king of dancers, completes his dance. The sages Sanaka and his companions stand waiting for wisdom. To uplift them, Śiva sounds his drum, nine and five times: fourteen beats. In the later tradition, Pāṇini hears in those beats the fourteen sound lists that open his grammar.

The Drum Verse

> नृत्तावसाने नटराजराजो
> ननाद ढक्कां नवपञ्चवारम्
> उद्धर्तुकामः सनकादिसिद्धान्
> एतद्विमर्शे शिवसूत्रजालम्
>
> *nṛttāvasāne naṭarājarājo*
> *nanāda ḍhakkāṃ navapañcavāram*
> *uddhartukāmaḥ sanakādisiddhān*
> *etad vimarśe śivasūtrajālam*
>
> At the end of the dance, the king of dancers sounded his drum nine and five times, wishing to uplift Sanaka and the other sages: this is the web of Śiva Sūtras I examine.
>
> NANDIKEŚVARAKĀŚIKĀ 1

The story is told in the first verse of Nandikeśvara's commentary on the *sūtras*. At the end of the dance, the king of dancers sounded his drum nine and five times, to uplift Sanaka and the sages. This web of Śiva Sūtras I now examine.

The Fourteen Lines

sounds + a marker

a i u Ṇ	1
ṛ ḷ K · e o Ṅ · ai au C	2–4
ha ya va ra Ṭ · la Ṇ	5–6
ña ma ṅa ṇa na M	7
jha bha Ñ · gha ḍha dha Ṣ	8–9
ja ba ga ḍa da Ś	10
kha pha cha ṭha tha ca ṭa ta V	11
ka pa Y · śa ṣa sa R · ha L	12–14

1.3.3 halantyam: the final consonant is a marker

Each line lists some sounds and ends with a consonant in capitals. First the vowels: a, i, u, then *ṛ*, *ḷ*, then the diphthongs. Then the semivowels and the nasals. Then the stops, grouped not by place of articulation but by the way they behave in the rules. The final consonant of each line is not a sound of the list. By rule 1.3.3, halantyam, it is a marker, an it.

Codes for Classes

> **1.1.71**
> आदिरन्त्येन सहेता
>
> *ādir antyena sahetā*
>
> A sound followed by a marker names itself and everything between: ac = a to C, all vowels; hal = ha to L, all consonants.
>
> AṢṬĀDHYĀYĪ 1.1.71

The markers make abbreviations possible, by *sūtra* 1.1.71. Take a first sound and a later marker: the pair names everything in between. ac, from a to the marker c: every vowel. hal, from ha in line five to the final marker l: every consonant. Fourteen lines yield over forty such codes, the *pratyāhāras*.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Fourteen beats of the drum	Fourteen *sūtras*
Each beat ends with a stroke	Each line ends with a marker
The sages are uplifted	Rules become compact
Sound from the god of dance	The alphabet as a code

The drum gives fourteen beats; the grammar has fourteen lines, each closed by a marker like the final stroke of a beat. The ordering is not the order of the mouth, but the order the rules require. The tradition gave the most ingenious part of the grammar the most divine origin.

The AI Lesson

designed encodings

ŚIVA SŪTRAS	AI
Order chosen for the rules	Encoding designed for the task
Markers as delimiters	Special tokens
ac, hal: ranges	Masks over a vocabulary
Fourteen lines, 40+ classes	Compact representation

A modern analogy, not a claim about the ancient text.

An engineer who must refer to sets of symbols often lays them out so that every useful set is a contiguous range. The Śiva Sūtras do exactly that: the sounds are ordered so that the classes the rules need fall into ranges. The markers work like delimiter tokens, and each *pratyāhāra* is a mask over the vocabulary.

IN BRIEF

- Fourteen beats of Śiva's drum
- Fourteen lines, each with a marker
- An alphabet designed for rules

At the end of his dance, Śiva beat his drum fourteen times. The fourteen Śiva Sūtras, each with its marker, make codes like ac and hal possible. An alphabet designed for rules.

CHAPTER 79

Śiva Decides the Contest

Pāṇini

पाणिनिः

Now the story literature tells how Pāṇini himself began: as the slowest student in his class. He was losing a public debate, when Śiva intervened, and an older grammar vanished.

The Dull Student

Kathāsaritsāgara, Book 1

In Somadeva's Kathāsaritsāgara, the ocean of the streams of story, the teacher Varṣa has many pupils. Among them is Pāṇini, the dullest of all. Weary of service and sent away by the teacher's wife, he goes to the Himālaya to perform austerities. Pleased, Śiva reveals to him a new grammar, the source of all learning.

The Debate

Kathāsaritsāgara, Book 1

Pāṇini returns and challenges the brilliant student Vararuci to debate. They argue for seven days. On the eighth day, Vararuci is about to win. At that moment, Śiva appears in the sky and utters a terrible sound. With it, the Aindra grammar, the older system that Vararuci and his fellows followed, is destroyed on earth. Vararuci is defeated, and later studies Pāṇini's grammar himself.

Older Grammars

the voices Pāṇini kept

Aindra school	lost, in the story
Āpiśali, Gārgya, Śākaṭāyana...	named in the *sūtras*
vā ... āpiśaleḥ	'optionally, per Āpiśali'
Aṣṭādhyāyī	the grammar that survived

Pāṇini names ten earlier grammarians

The story says an older grammar was swept away. The Aṣṭādhyāyī itself shows that Pāṇini had predecessors. He names ten of them in his rules, among them Āpiśali, Gārgya, Śākaṭāyana and Śākalya. He cites their views where usage varies, as the au-

thority for an option. Their own grammars are lost. What survives of them, survives mostly inside Pāṇini.

A Rival Quoted

> **6.1.92**
> **वा सुप्यापिशलेः**
>
> *vā supy āpiśaleḥ*
>
> Before a nominal word, according to Āpiśali, the vowel combination is optional.
> AṢṬĀDHYĀYĪ 6.1.92

Optionally, in this sandhi, in the opinion of Āpiśali. Pāṇini does not erase his predecessors. He records where their usage differs, and makes it an option.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Pāṇini receives grammar from Śiva	A new, complete system
The Aindra grammar is lost	Earlier works do not survive
Vararuci studies Pāṇini	Kātyāyana's *vārttikas*
Rivals live on inside	Āpiśali in 6.1.92

The legend explains a real historical fact: Pāṇini's system replaced the grammars before it, which are now lost. Vararuci, identified in the tradition with Kātyāyana, did become a student of Pāṇini's work, and wrote the *vārttikas* on it. And the defeated schools survive as named opinions within the winning grammar.

The AI Lesson

the winning standard

PĀṆINI	AI
A complete, compact system	A dominant architecture
Older grammars fade	Earlier models abandoned
Rival views kept as options	Ideas absorbed, credited
Commentary builds on it	An ecosystem of extensions

A modern analogy, not a claim about the ancient text.

In AI, one architecture can displace others quickly, and earlier approaches are forgotten. Pāṇini's grammar did the same, but it preserved its rivals' views inside it, with their names attached. A good standard does not erase its predecessors. It absorbs them, and credits them.

IN BRIEF

- The dull student, taught by Śiva
- The older grammar vanished
- Rivals live on, named in the rules

The slowest student won the contest, when Śiva's roar swept away the older grammar. But inside Pāṇini's rules, Āpiśali and the other predecessors are still quoted by name. Rivals live on, named in the rules.

CHAPTER 80

The Boy Who Heard Once

Vararuci

वररुचिः

Now Vararuci's own story, as the Kathāsaritsāgara tells it, from his childhood. He could repeat anything perfectly after hearing it just once.

The Play Repeated

Kathāsaritsāgara 1.2

Vararuci, also called Kātyāyana, is a child living with his widowed mother. A troupe of actors performs a play in the town, and the boy watches. Back home, he recites the entire play to his mother, word for word, having heard it only once.

The Three Students

Kathāsaritsāgara 1.2

Two travelling students, Vyāḍi and Indradatta, arrive at the house. They have been told to find someone who retains a text after a single hearing, a *śrutadhara*. To test the boy, Vyāḍi recites a *prātiśākhya*, a phonetic manual of the Veda. The boy repeats it perfectly. The three go together to study under the teacher Varṣa: Vararuci remembers after one hearing, Vyāḍi after two, Indradatta after three.

Kātyāyana's First Vārttika

सिद्धे शब्दार्थसम्बन्धे
लोकतोऽर्थप्रयुक्ते शब्दप्रयोगे
शास्त्रेण धर्मनियमः

siddhe śabdārthasambandhe
lokato 'rthaprayukte śabdaprayoge
śāstreṇa dharmaniyamaḥ

Since word, meaning and their relation are established, and words are used from common usage to convey meaning, grammar regulates which usage is meritorious.

MAHĀBHĀṢYA · PASPAŚĀ

The grown Vararuci, as Kātyāyana, wrote the *vārttikas*, critical notes on Pāṇini. Patañjali opens the Mahābhāṣya with the first of them. Word, meaning and their connection are given. People use words from everyday life, to convey meaning. Grammar does not create language; it lays down which usage is correct.

What a Vārttika Does

Kātyāyana on Pāṇini

uktam	what is said
anuktam	what is not said
duruktam	what is wrongly said
vārttika	a note on all three

Checking a grammar against usage

The tradition defines a *vārttika* as a note that considers what a rule says, what it leaves unsaid, and what it says imperfectly. ukta, anukta, durukta: stated, unstated, misstated. Kātyāyana tested Pāṇini's rules against the language of his own time, and proposed additions and corrections. The boy with the perfect memory became the grammar's first systematic critic.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Hears once, repeats exactly	Faithful to usage
Repeats the *prātiśākhya*	Mastery of phonetics
Defeated by Pāṇini, then his student	Commentator on the Aṣṭādhyāyī
'siddhe *śabdārthasambandhe*'	Language comes first

A boy who could reproduce what he heard exactly would naturally insist that grammar must follow real usage. That is what his first *vārttika* says: language is already established, and grammar only regulates it. Memory, phonetics and critique come together in one figure.

The AI Lesson

one-shot learning

VARARUCI	AI
Learns after one hearing	One-shot learning
Vyāḍi twice, Indradatta thrice	Sample efficiency
Usage first, rules second	Data-driven, then constrained
Notes on gaps and errors	Evaluation and correction

A modern analogy, not a claim about the ancient text.

Machine learning measures how many examples a system needs: one, two, or thousands. The three students are a scale of sample efficiency, with Vararuci at one-shot. And his *vārttika* states a principle modern practice shares: start from real usage, then decide what is correct.

IN BRIEF

- He heard once, and remembered
- He became Kātyāyana, critic of Pāṇini
- Usage first; grammar regulates

Vararuci repeated a whole play, and a whole phonetic manual, after one hearing. As Kātyāyana, he tested Pāṇini against usage: language first, and grammar to regulate it. Usage first; grammar regulates.

CHAPTER 81

Water or Sweets?

Modakaiḥ

मोदकैः

Now a king who could not hear one vowel change, and was laughed at by his own queen. She said modakaiḥ. Did she mean water, or sweets?

Play in the Water

Kathāsaritsāgara, Book 1

King Sātavāhana is playing in a pool with his queens, splashing them with water. One queen, tired of it, says in Sanskrit: modakair *mā tāḍaya*. The king hears *modakaiḥ*, with sweets, and has trays of sweet modakas brought. The queen laughs at him in front of everyone.

Splitting the Sandhi

mā + udakaiḥ

mā + udakaiḥ	don't + with water
ā + u → o	*guṇa*: 6.1.87
modakaiḥ	the joined form
modakaiḥ ≠ 'with sweets'	here

6.1.87 ād guṇaḥ

The queen's sentence is *mā udakaiḥ tāḍaya*: don't strike me with water. When *mā* meets *udakaiḥ*, the long *ā* and the u combine. Rule 6.1.87, *ād guṇaḥ*, replaces them with the single vowel o. *mā* plus *udakaiḥ* becomes *modakaiḥ*. And *modakaiḥ* is also a perfectly good word: with sweets. Only knowledge of sandhi tells you which was meant.

The Guṇa Sandhi

> **6.1.87**
> आद्गुणः
>
> *ād guṇaḥ*
>
> When a or *ā* is followed by a vowel, both are replaced by the *guṇa* vowel: a + u → o, a + i → e.
>
> AṢṬĀDHYĀYĪ 6.1.87

The rule is three syllables long: *sūtra* 6.1.87, *ād guṇaḥ*. After a or *ā*, a following vowel and the a together are replaced by the *guṇa* vowel: e for i, o for u. It is one of the first rules every student learns, as in *gaṅgā* plus udakam, giving *gaṅgodakam*, Ganges water.

The King's Shame

and its consequence

The queen tells him: you do not even know the sandhi of *mā* and udaka. Ashamed, the king shuts himself away and resolves to learn grammar, or die. His ministers argue over how long it would take. One of them, Śarvavarman, promises to teach him in six months. The tradition connects this promise with the Kātantra, a shorter grammar, and with a rival vow that Chapter 82 will tell.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Queen: '*mā udakaiḥ*'	Two words
Spoken as '*modakaiḥ*'	*ād guṇaḥ*, 6.1.87
King hears 'sweets'	A false split
Shame leads to study	Why grammar is needed

The joined sound has two possible splits. The king chose the wrong one. This is the practical reason for grammar: speech joins words, and only rules let you separate them again.

The AI Lesson

segmentation

MODAKAIḤ	AI
Joined speech	Unsegmented input
mā + *udakaiḥ* or *modakaiḥ*	Multiple valid splits
Context: they are splashing	Context disambiguates
The king ignores context	Model errors

A modern analogy, not a claim about the ancient text.

Sanskrit sandhi splitting is a hard problem for language technology, because one joined form can have several valid analyses. The context should have decided it: in a pool, a queen being splashed means water. Rules give the candidates; context chooses among them.

IN BRIEF

- *mā* + *udakaiḥ* = *modakaiḥ*
- Water, not sweets
- Sandhi must be undone

The queen said 'don't splash me with water'; the king brought sweets. mā plus udakaiḥ, by ād guṇaḥ, becomes modakaiḥ. Sandhi must be undone, and only grammar undoes it.

CHAPTER 82

The Vow to Give Up Sanskrit

Guṇāḍhya

गुणाढ्यः

Now the king wants to learn grammar fast, and two scholars make rival promises. One says six months. The other says it cannot be done, and stakes his languages on it.

The Wager

Kathāsaritsāgara 1.6

The minister Guṇāḍhya tells King Sātavāhana that grammar normally takes twelve years, though for the king he could manage it in six years. Śarvavarman says: I will teach him in six months. Guṇāḍhya replies: if you do, I will give up Sanskrit, Prakrit and the local language, all three. Śarvavarman stakes his own pride on the other side.

The Short Grammar

Kathāsaritsāgara 1.7

Śarvavarman goes to Kārttikeya, the god of war, and fasts. The god appears and begins to recite a grammar. Śarvavarman, too eager, interrupts with words of his own, and so the grammar remains shorter than the god intended. This is the Kātantra, the short system. With it, the king learns grammar in six months. Guṇāḍhya has lost the wager.

The First Sūtra of the Kātantra

> **1.1.1**
> सिद्धो वर्णसमाम्नायः
>
> *siddho varṇasamāmnāyaḥ*
>
> The ordered list of sounds is established: it is taken from usage, not created by the grammar.
>
> KĀTANTRA 1.1.1

The Kātantra opens with a famous first *sūtra*. The alphabet is established. The short grammar does not build its own sound list with markers, as the Śiva Sūtras of

Chapter 78 do. It takes the familiar alphabet as given. Simplicity was the point: a grammar for a king in a hurry.

The Book in the Forest

Kathāsaritsāgara 1.8

True to his vow, Guṇāḍhya gives up all three languages and goes to the forest of the Vindhyas. There he learns Paiśācī, the language of the forest spirits, which his vow did not forbid. In it he writes the Bṛhatkathā, the great story, in his own blood, for lack of ink. The king rejects a book in such a language. Guṇāḍhya burns it leaf by leaf, reading each aloud to the animals, who weep and stop eating. The king, learning the cause, rescues the last part. From it, the tradition says, came the stories of the Kathāsaritsāgara.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Twelve years, or six months?	Full grammar vs short
Kārttikeya's *sūtra*	The Kātantra
'siddho *varṇasamāmnāyaḥ*'	Alphabet taken as given
The vow: three languages	Saṃskṛta, Prākṛta, Deśabhāṣā

The wager is between two ideas of grammar: complete and long, or short and practical. The Kātantra's first *sūtra* shows the short way: accept the ordinary alphabet and move on. And the loser's vow names the three language registers of the time.

The AI Lesson

distilled systems

KĀTANTRA	AI
Short grammar for a king	A distilled model
Six months, not twelve years	Faster to learn and run
Covers common usage	Good enough for most tasks
Less than the god intended	Smaller than the teacher

A modern analogy, not a claim about the ancient text.

A distilled AI model is smaller and faster than the model that taught it, and covers most practical needs. The Kātantra is described the same way: shorter than the god

intended, but sufficient for the king. Completeness and speed pull in different directions, and both have their uses.

IN BRIEF

- Six months: the Kātantra
- Guṇāḍhya gives up three languages
- A great story in Paiśācī

Śarvavarman won the wager with the Kātantra, the short grammar. Guṇāḍhya kept his vow, and wrote the great story in Paiśācī. Two ways to love language.

CHAPTER 83

Skanda's Grammar

Agni Purāṇa

अग्निपुराणम्

The same god appears again, as Skanda, as a teacher of grammar inside a Purāṇa. The Agni Purāṇa, an encyclopaedia of knowledge, devotes a whole group of chapters to grammar, in his voice.

An Encyclopaedia Purāṇa

the Agni Purāṇa

The Agni Purāṇa is presented as the teaching of Agni, the fire god, to the sage Vasiṣṭha. Unlike most Purāṇas, it is an encyclopaedia: it covers temple building, medicine, politics, poetics, metre and lexicography. And in chapters 348 to 358, it gives a summary of grammar.

Kumāra Teaches Kātyāyana

Agni Purāṇa, grammar chapters

In these chapters, the speaker is Skanda, also called Kumāra, the youthful son of Śiva. He teaches the sage Kātyāyana, the same Vararuci we met in Chapter 80. He offers not the whole of grammar, but its essence, for the understanding of correct forms. The god of war becomes the teacher of grammar, a role the tradition gives him again and again.

The Contents

grammar in summary

saṃdhi	joining sounds
sup	noun endings
tiṅ	verb endings
kāraka	roles in the sentence
kṛt, taddhita	suffixes
samāsa	compounds

The whole architecture in a few chapters

The Agni Purāṇa's grammar moves through the standard topics. *saṃdhi*, the joining of sounds; then the noun endings, sup, and the verb endings, *tiṅ*. Then the *kārakas*, the roles that participants play in an action, and the primary and secondary suffixes, *kṛt* and taddhita. And the compounds, *samāsa*. The whole architecture of grammar, condensed for the reader of a Purāṇa.

What Counts as a Word

> **1.4.14**
> सुप्तिङन्तं पदम्
>
> *suptiṅantaṃ padam*
>
> A word, pada, is what ends in a noun ending (sup) or a verb ending (*tiṅ*).
>
> AṢṬĀDHYĀYĪ 1.4.14

At the centre of every such summary is Pāṇini's definition of a word, *sūtra* 1.4.14. A word is that which ends in sup or *tiṅ*: a noun ending or a verb ending. Every Sanskrit word in a sentence is inflected. The Purāṇa's chapters on sup and *tiṅ* are built on this foundation.

Story and Grammar

the missing link

IN THE PURĀṆA	IN THE GRAMMAR
Skanda teaches	The Kaumāra tradition
Kātyāyana listens	The critic of Pāṇini
Chapters on sup and *tiṅ*	*suptiṅantaṃ* padam, 1.4.14
Essence, not the whole	Grammar as a summary

The tradition links Skanda with a lineage of short grammars, called Kaumāra after him, to which the Kātantra of Chapter 82 belongs. The Agni Purāṇa puts the same idea into the Purāṇic world: grammar, in summary form, from the mouth of the young god. Grammar was considered sacred knowledge, worth including in a scripture.

The AI Lesson

summaries of a system

AGNI PURĀṆA	AI
Grammar inside an encyclopaedia	A module in a larger system
Essence of the rules	A compressed specification
Organised by topic	Structured documentation
For the general reader	Accessible interface

A modern analogy, not a claim about the ancient text.

Complex systems need summaries: documentation that gives the essential structure without every rule. The Agni Purāṇa does this for grammar, organising it by topic for readers who are not specialists. A good summary keeps the architecture intact while dropping the detail.

IN BRIEF

- Skanda teaches Kātyāyana
- Grammar in chapters 348 to 358
- A word ends in sup or *tiṅ*

In the Agni Purāṇa, the young god Skanda teaches the essence of grammar to Kātyāyana. At its centre is Pāṇini's definition: suptiṅantaṃ padam. Grammar, inside a scripture.

CHAPTER 84

The Serpent Becomes the Commentator

Śeṣa and Patañjali

शेषः पतञ्जलिश्च

Now the author of the great commentary on Pāṇini, the Mahābhāṣya: Patañjali. Tradition says he was the cosmic serpent Śeṣa, who fell into a woman's cupped hands. His name records the fall, and breaks a sandhi rule.

The Fall into the Hands

the tradition

Śeṣa, also called Ananta, is the thousand-headed serpent on whom Viṣṇu rests. The tradition says that Śeṣa chose to be born on earth to teach. A devout woman stands in a river, offering water to the sun from her cupped hands, her *añjali*. A tiny serpent falls from the sky into her hands. It becomes a child, and she names him for how he came: fallen, pata, into the *añjali*.

Three Purifications

योगेन चित्तस्य पदेन वाचां
मलं शरीरस्य च वैद्यकेन
योऽपाकरोत्तं प्रवरं मुनीनां
पतञ्जलिं प्राञ्जलिरानतोऽस्मि

yogena cittasya padena vācāṃ
malaṃ śarīrasya ca vaidyakena
yo 'pākarot taṃ pravaraṃ munīnāṃ
patañjaliṃ prāñjalir ānato 'smi

With folded hands I bow to Patañjali, foremost of sages, who removed the impurity of the mind by yoga, of speech by grammar, and of the body by medicine.

TRADITIONAL INVOCATION

A traditional verse honours Patañjali for three gifts. He removed the impurity of the mind by yoga, of speech by the science of words, and of the body by medicine.

To him, with folded hands, I bow. The verse ends with *prāñjaliḥ*, with an *añjali*: the gesture of his birth becomes the gesture of devotion.

A Sandhi That Should Not Be

pata + añjali

pata + añjali	fallen + cupped hands
patāñjali	expected: a + a → *ā*
patañjali	actual: *pararūpa*
śakandhvādi	the listed exceptions

Vārttika on 6.1.94: śakandhvādiṣu pararūpaṃ vācyam

Now the grammar. pata plus *añjali*: a final a meets an initial a. The ordinary rule, 6.1.101, merges them into a long *ā*. We would expect *patāñjali*. But the name is *patañjali*, with a short a. The second vowel simply replaces the first, a change called *pararūpa*. Kātyāyana's *vārttika* on rule 6.1.94 allows *pararūpa* in a listed group of words, the *śakandhvādi* group, and *patañjali* is in that list.

The Thousand-Tongued Teacher

the tradition

A later legend says Patañjali taught the Mahābhāṣya from behind a curtain, to a thousand students at once. Behind the curtain, he took his true form, the thousand-headed serpent, answering every student with a separate mouth. He forbade them to look. One student lifted the curtain. The serpent's fiery breath consumed the class. The thousand heads of Śeṣa became the image of a commentary that answers every question.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Fell into the *añjali*	pata + *añjali*
A short a, not long	*pararūpa*
A listed exception	*śakandhvādi gaṇa*
The serpent with a thousand mouths	The Mahābhāṣya's dialogue

The story explains the meaning of the name. The grammar explains its form, which needs an exception listed by Kātyāyana. And the Mahābhāṣya itself is written as a dialogue of questions and answers, as if from many voices at once.

The AI Lesson

exceptions in a list

PATAÑJALI	AI
General rule: a + a → *ā*	Default behaviour
patañjali keeps short a	An observed exception
Listed in a *gaṇa*	An exception lexicon
Rule + list = correct output	Rules plus lookup

A modern analogy, not a claim about the ancient text.

Real language always has exceptions. Grammar handles them with a list: apply the general rule, unless the word is in the group. Language systems still combine general rules with exception dictionaries. Even the name of the great commentator is in the list of exceptions.

IN BRIEF

- Fallen into the *añjali*
- pata + *añjali* = *patañjali*
- *pararūpa*: a listed exception

Śeṣa fell into a woman's cupped hands, and was named Patañjali. His name takes pararūpa, a short a, by the śakandhvādi list. The great commentator is himself an exception.

CHAPTER 85

The Bird and the Soma

Garuḍa

गरुडः

Now the enemy of serpents: Garuḍa, the great bird, who steals the nectar from the gods. In Chapter 22, the metre Gāyatrī flew as a bird to fetch soma. The epic retells the flight with Garuḍa, and names him for his mother.

The Wager

Mahābhārata, Ādiparvan

Kadrū and Vinatā are both wives of the sage Kaśyapa. Kadrū is the mother of the serpents; Vinatā, of Garuḍa. They wager on the colour of the tail of the divine horse Uccaiḥśravas, risen from the churning. Kadrū's serpent sons cling to the white tail and make it look black. Vinatā loses, and becomes Kadrū's slave.

The Theft of the Nectar

Mahābhārata, Ādiparvan

The serpents demand a ransom: bring us the *amṛta*, the nectar of immortality. Garuḍa flies to heaven, defeats the guardian gods, and seizes the nectar. Though he holds it, he does not drink it. Pleased, Viṣṇu makes him his mount and places him on his banner. Garuḍa sets the nectar on *kuśa* grass and frees his mother. While the serpents bathe, Indra takes it back. The serpents lick the sharp grass where it lay, and their tongues are split forever.

Son of Vinatā

vinatā + ḍhak

vinatā	his mother
+ ḍhak	son of a woman: 4.1.120
ḍh → ey	7.1.2
vainateya	first vowel → ai

4.1.120 strībhyo ḍhak

The epic often calls Garuḍa Vainateya, son of Vinatā. His name comes from his mother, as Kārttikeya's did in Chapter 48. Rule 4.1.120, *strībhyo ḍhak*, gives the

suffix *ḍhak* for the offspring of a woman. By rule 7.1.2, its *ḍh* is replaced by ey. And because the suffix carries the marker k, the first vowel is strengthened: i becomes ai. *vinatā* becomes vainateya. The son who freed his mother bears her name.

The Fair-Winged One

su + parṇa

su	good, fair
parṇa	wing, feather
suparṇa	whose wings are fair
bahuvrīhi	names the bird, not the wings

A bahuvrīhi refers outside itself

His other great name is Suparṇa, the fair-winged. su plus *parṇa*: it does not mean ‘a fair wing’. It means ‘one whose wings are fair’, a *bahuvrīhi*. In the Veda, the soma-bringing bird is already called *suparṇa*. The epic inherits the name and gives it to Garuḍa.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
He frees his mother	vainateya: 4.1.120
ḍh becomes ey	7.1.2
The fair-winged bird	*suparṇa*: *bahuvrīhi*
Gāyatrī as bird, Garuḍa as bird	One flight, two retellings

The whole story is about a mother and son, and the name Vainateya is built by the rule for a woman’s offspring. The Vedic bird that fetched soma, the metre Gāyatrī of Chapter 22, and the epic Garuḍa, share the same flight and the same name, *suparṇa*.

The AI Lesson

the agent that does not take

GARUḌA	AI
Holds the nectar	Has access to a resource
Does not drink it	Does not exceed its mandate
Completes the task	Goal achieved within limits
Trusted by Viṣṇu	Earned trust

A modern analogy, not a claim about the ancient text.

Garuḍa had the nectar in his grasp and did not drink it. He did exactly what the task required, and no more. AI agents with access to powerful resources face the same test: complete the task without taking more than it needs. In the epic, that restraint is what earns the highest trust.

IN BRIEF

- He stole the nectar to free his mother
- *vinatā* + *ḍhak* = vainateya
- *suparṇa*: the fair-winged

Garuḍa seized the nectar, did not drink it, and freed his mother. He is Vainateya by rule 4.1.120, and Suparṇa, the fair-winged, by a bahuvrīhi. A son named for his mother.

CHAPTER 86

The Serpent Escapes by Metre

Piṅgala

पिङ्गलः

Now Garuḍa catches a serpent, and the serpent saves himself by reciting metres. The serpent's name is Piṅgala, the name of the author of the science of metre, the Chandaḥśāstra.

Caught by Garuḍa

the commentators' legend

The commentators on Piṅgala's work tell a story about its author. He was a *nāga*, a serpent, and Garuḍa caught him on the seashore. Piṅgala asked for one thing before being eaten: let me teach you what I know. Garuḍa agreed to wait until he finished. Piṅgala began to recite the metres, one after another, defining each.

The Last Metre

two versions

At last he reached a metre whose very name describes a serpent's movement. In one version it is *bhujaṅgaprayāta*, the serpent's going. In the commentary Piṅgalatattvaprakāśikā, it is *bhujaṅgavijṛmbhita*, the serpent's uncoiling. Reciting it, he demonstrated it: he glided away into the sea. Garuḍa had promised to wait for the end of the lesson. Piṅgala had made the lesson the escape.

Listing Every Pattern

> द्विकौ ग्लौ
> मिश्रौ च
> पृथग्ला मिश्राः
>
> *dvikau glau*
> *miśrau ca*
> *pṛthag lā miśrāḥ*
>
> Two, g and l. Mixed. Separately with l, mixed: the procedure that lists every pattern of heavy and light syllables.
>
> CHANDAḤŚĀSTRA 8.20–22

Piṅgala's work ends with counting. Three tiny *sūtras* give a procedure for listing every possible pattern. Two units, g for heavy and l for light. Combine them. Then place the result with g and with l separately, and combine again. Every pattern, in order, with none missed.

The Prastāra

heavy = g, light = l

g · l	1 syllable: 2
gg · lg · gl · ll	2 syllables: 4
ggg … lll	3 syllables: 8
2 × 2 × 2 …	n syllables: 2^n

Each added syllable doubles the list

A syllable is heavy, guru, if its vowel is long, or if the short vowel is followed by a cluster, an *anusvāra* or a visarga. Otherwise it is light, laghu. For one syllable there are two patterns. Combine each with g and with l, and there are four. Then eight. This listing is the *prastāra*. Each added syllable doubles the list: for n syllables, two to the power n. Read g and l as two digits, and the *prastāra* lists the binary numbers in order.

Six Ways to Count

the pratyayas

prastāra	list all patterns
naṣṭa	pattern at position k
uddiṣṭa	position of a pattern
laga-kriyā	how many with r heavies
saṅkhyā	total count
adhvan	space the list occupies

Halāyudha's meru-prastāra: the triangle of counts

Piṅgala gives six such procedures, the pratyayas. List every pattern; find the pattern at a given position; find the position of a given pattern. Count the patterns with a given number of heavy syllables; count them all; and measure the space the list would take. His tenth-century commentator Halāyudha explains the counting with a triangle of numbers, the *meru-prastāra*, the same triangle later known in Europe as Pascal's.

Story and Grammar

the missing link

IN THE STORY	IN THE ŚĀSTRA
A serpent named Piṅgala	The author of the Chandaḥśāstra
Metre after metre	A complete catalogue
The serpent's-gait metre	A metre named by its rhythm
Escape at the end	The work ends in counting

The legend turns the author of metre into a serpent who survives by finishing his catalogue. The work itself really does move from metre to metre, and ends with the counting procedures that guarantee nothing is missing. A complete catalogue was his escape.

The AI Lesson

enumeration and indexing

PIṄGALA	COMPUTING
g and l	Two symbols: bits
prastāra	Enumerating 2^n states
naṣṭa, *uddiṣṭa*	Index ↔ pattern conversion
meru-prastāra	Binomial counts

A modern analogy, not a claim about the ancient text.

Computers represent everything with two symbols, and enumerate states exactly as the *prastāra* does. *naṣṭa* and *uddiṣṭa*, converting between a pattern and its position, are what we would now call encoding and decoding an index. Piṅgala built these tools to catalogue poetry. They describe the arithmetic of every digital system.

IN BRIEF

- The serpent recited every metre
- dvikau glau · *miśrau* ca · *pṛthag lā miśrāḥ*
- Two symbols, 2^n patterns

Caught by Garuḍa, the serpent Piṅgala recited the metres to the last, and glided away. His sūtras list every pattern of heavy and light: two symbols, two to the power n. A catalogue that saved its author.

CHAPTER 87

Eaten by Partridges

Taittirīya

तैत्तिरीयम्

Now a quarrel between a teacher and a pupil, and a Veda that is vomited and eaten by birds. The birds were partridges, tittiri, and the branch of the Veda they kept is called Taittirīya.

The Quarrel

Viṣṇu Purāṇa 3.5

Vaiśampāyana teaches the Yajurveda to many disciples. He incurs a grave sin, and asks his pupils to perform the expiation for him. The pupil Yājñavalkya says: why trouble these weak students? I alone will do it. The teacher takes this as arrogance toward his fellow pupils. In anger he says: give back everything you have learned from me.

The Partridges

Viṣṇu Purāṇa 3.5

Yājñavalkya vomits up the Yajus formulas he had learned, stained with blood. The other disciples, taking the form of partridges, tittiri birds, eat them up. Those formulas, so received, became the Taittirīya branch of the Black Yajurveda. Yājñavalkya then worships the Sun, who in the form of a horse teaches him new Yajus formulas: the White Yajurveda.

From Tittiri to Taittirīya

tittiri + chaṇ

tittiri	the proclaimer, ‘partridge’
+ chaṇ	4.3.102
cha → īya	7.1.2
taittirīya	vowel → ai: of Tittiri’s tradition

4.3.102 tittirivaratantukhaṇḍikokhāc chaṇ

Pāṇini derives the name of the branch from tittiri. In grammar, Tittiri is the name of the teacher who proclaimed this recension. Rule 4.3.102 adds the suffix *chaṇ*

after tittiri, varatantu, *khaṇḍika* and ukha, for those who study what they proclaimed. By rule 7.1.2, cha becomes *īya*. The marker *ṇ* strengthens the first vowel, and tittiri becomes *taittirīya*. The students of Tittiri's Veda are the Taittirīyas.

The Rule Names Tittiri

4.3.102
तित्तिरिवरतन्तुखण्डिकोखाच्छण्

tittirivaratantukhaṇḍikokhāc chaṇ

After Tittiri, Varatantu, Khaṇḍika and Ukha, the suffix *chaṆ* denotes those who study what they proclaimed.

AṢṬĀDHYĀYĪ 4.3.102

Story and Grammar

the missing link

IN THE PURĀṆA	IN THE GRAMMAR
Pupils become partridges	tittiri: partridge
They eat the Yajus	Receiving a recension
The Taittirīya branch	tittiri + *chaṇ*: 4.3.102
A teacher named Tittiri	Named in the *sūtra*

Grammar knows Tittiri as the teacher who proclaimed the recension. The Purāṇa hears the word as tittiri, partridge, and builds a story around it. The name came first, and the story explains it, as the Mahābhārata did with Śakuntalā in Chapter 60. Both are true to the word: one gives its derivation, the other its image.

The AI Lesson

knowledge transfer

THE PURĀṆA	AI
Teacher demands it back	Unlearning a dataset
Others absorb it	Knowledge passes to new models
A new Veda from the Sun	Training from a new source
Two branches survive	Parallel lineages of models

A modern analogy, not a claim about the ancient text.

When a model must forget what it learned, researchers call it machine unlearning. It is hard: knowledge, once absorbed, spreads. In the story, the knowledge Yājñavalkya gives up does not vanish. Others take it in, and it survives in a new lineage. And Yājñavalkya himself learns again from a new source. Two branches, both preserved to this day.

IN BRIEF

- Yājñavalkya gave back the Yajus
- Partridges ate it: Taittirīya
- tittiri + *chaṇ*, rule 4.3.102

Yājñavalkya gave back the Yajus, and his fellow pupils, as partridges, took it in. Grammar derives Taittirīya from the teacher Tittiri, by rule 4.3.102. One word, a derivation and a story.

CHAPTER 88

The Lion That Killed Pāṇini

Pañcatantra

पञ्चतन्त्रम्

Now the Pañcatantra, the book of animal fables, says something startling about Pāṇini. A lion took his life. An elephant killed Jaimini. And a sea monster killed Piṅgala.

Animals Do Not Respect Learning

the context

The Pañcatantra teaches statecraft through animal stories, and it often warns against trusting creatures that cannot reason. To make the point, it cites three of the greatest authors of the *śāstras*. Each, it says, was killed by an animal, which cared nothing for his learning.

Three Authors, Three Animals

> सिंहो व्याकरणस्य कर्तुरहरत् प्राणान् प्रियान् पाणिनेः
> मीमांसाकृतमुन्ममाथ सहसा हस्ती मुनिं जैमिनिम्
> छन्दोज्ञाननिधिं जघान मकरो वेलातटे पिङ्गलम्
> अज्ञानावृतचेतसामतिरुषां कोऽर्थस्तिरश्चां गुणैः
>
> *siṃho vyākaraṇasya kartur aharat prāṇān priyān pāṇineḥ*
> *mīmāṃsākṛtam unmamātha sahasā hastī muniṃ jaiminim*
> *chandojñānanidhiṃ jaghāna makaro velātaṭe piṅgalam*
> *ajñānāvṛtacetasām atiruṣāṃ ko 'rthas tiraścāṃ guṇaiḥ*
>
> A lion took the dear life of Pāṇini, maker of grammar; an elephant suddenly crushed the sage Jaimini, author of the Mīmāṃsā; a sea monster on the shore killed Piṅgala, treasury of metre. What do beasts, minds clouded and full of rage, care for virtues?
>
> PAÑCATANTRA

chandojñānanidhiṃ jaghāna makaro *velātaṭe piṅgalam*, *ajñānāvṛtacetasām atiruṣāṃ* ko 'rthas *tiraścāṃ guṇaiḥ*. A lion took the life of Pāṇini, maker of gram-

mar. An elephant crushed Jaimini, author of the Mīmāṃsā. A sea monster on the shore killed Piṅgala, the treasury of metre. What do beasts, blind and enraged, care for learning?

How the Verse Names Them

by their works

vyākaraṇasya kartuḥ	maker of grammar
mīmāṃsākṛtam	maker of Mīmāṃsā
chandojñānanidhim	treasury of metre-knowledge
ko 'rthaḥ guṇaiḥ	what use are virtues?

Each scholar named by his śāstra

Notice how the verse names each scholar by his work. Pāṇini is *vyākaraṇasya kartā*, the maker of grammar, with *kartṛ* in the genitive construction: maker of something. Jaimini is *mīmāṃsākṛt*, a compound with the root *kṛ* and the suffix kvip: the Mīmāṃsā-maker. Two ways of saying the same thing. Piṅgala is *chandojñānanidhi*, the treasure-store of the knowledge of metre.

Story and Grammar

the missing link

IN THE FABLE	IN THE TRADITION
A lion kills Pāṇini	The maker of grammar
An elephant kills Jaimini	The Mīmāṃsā-sūtras
A makara kills Piṅgala on the shore	Chapter 86: the seashore again
Beasts ignore learning	The fable's moral

The Pañcatantra tells of Pāṇini's death only in passing, as a moral example. Notice Piṅgala: in Chapter 86 he escaped Garuḍa into the sea. Here a sea creature kills him on the shore. The great authors of grammar and metre had become so famous that a fable book could use them as proverbs.

The AI Lesson

capability without understanding

THE FABLE	AI
Strength without reason	Power without judgement
Destroys what it cannot value	Optimises blindly
Learning is not protection	Expertise needs safeguards
ko *'rthaḥ guṇaiḥ*?	Values must be built in

A modern analogy, not a claim about the ancient text.

The fable's point is that power without understanding destroys what it cannot value. AI safety research worries about exactly this: capable systems that pursue a goal without regard for what lies in the way. The answer, then and now, is to build in the capacity to value what matters.

IN BRIEF

- A lion, an elephant, a makara
- Pāṇini, Jaimini, Piṅgala
- Beasts do not value learning

The Pañcatantra says a lion killed Pāṇini, an elephant Jaimini, and a sea monster Piṅgala. Each named by his work: maker of grammar, maker of Mīmāṃsā, treasury of metre. Beasts do not value learning.

CHAPTER 89

The Examination at Pāṭaliputra

Śāstrakāra-Parīkṣā

शास्त्रकारपरीक्षा

Now a tradition about how they became famous in the first place. In the city of Pāṭaliputra, authors of the sciences had to pass an examination before they were honoured.

The Poet's Handbook

Rājaśekhara, Kāvyamīmāṃsā 10

The tenth-century poet and critic Rājaśekhara wrote the Kāvyamīmāṃsā, a handbook on the making of poets. In its tenth chapter he describes how kings should honour learning, by holding assemblies where works are examined. He records two traditions: at Ujjayinī, poets were examined; and at Pāṭaliputra, the authors of the *śāstras*.

Examined, Then Famous

> अत्रोपवर्षवर्षाविह
> पाणिनिपिङ्गलाविह व्याडिः
> वररुचिपतञ्जली इह
> परीक्षिताः ख्यातिमुपजग्मुः
>
> *atropavarṣavarṣāv iha*
> *pāṇinipiṅgalāv iha vyāḍiḥ*
> *vararucipatañjalī iha*
> *parīkṣitāḥ khyātim upajagmuḥ*
>
> Here Upavarṣa and Varṣa, here Pāṇini and Piṅgala, here Vyāḍi, Vararuci and Patañjali, were examined and attained fame.
>
> KĀVYAMĪMĀṂSĀ 10

Here Upavarṣa and Varṣa; here Pāṇini and Piṅgala; here Vyāḍi; Vararuci and Patañjali: here they were examined, and attained fame.

A Roll Call of This Series

the names

Varṣa	Pāṇini's teacher: Chapter 79
Pāṇini, Piṅgala	Chapter 78–79, 86
Vyāḍi	Vararuci's companion: Chapter 80
Vararuci	Kātyāyana: Chapter 80
Patañjali	Chapter 84

The Kathāsaritsāgara's cast, in one verse

Look at the names. They are almost exactly the cast of the stories we have just told. Varṣa, the teacher in whose school Pāṇini was the dullest pupil. Pāṇini himself, and Piṅgala of the metres. Vyāḍi and Vararuci, the two who studied together in Chapter 80. And Patañjali, the serpent commentator. Rājaśekhara puts all of them in one city, under examination.

The Maker of a Śāstra

> **3.2.1**
> **कर्मण्यण्**
>
> *karmaṇy aṇ*
>
> After a root with its object in front, the suffix *aṆ* forms a word for the doer: *kumbhakāra*, potter; *śāstrakāra*, maker of a science.
>
> AṢṬĀDHYĀYĪ 3.2.1

The title of the examination, *śāstrakāra-parīkṣā*, contains a word formed by the first rule of a whole section, *sūtra* 3.2.1. With an object in front, a root takes the suffix *aṇ* to name the doer. kumbha plus *kṛ*: *kumbhakāra*, a pot-maker. *śāstra* plus *kṛ*: *śāstrakāra*, a maker of a science.

Story and Grammar

the missing link

IN THE TRADITION	IN THE GRAMMAR
Authors of *śāstras*	*śāstrakāra*: 3.2.1
Examined at Pāṭaliputra	*parīkṣā*: testing
Then famous	*khyātim upajagmuḥ*
The same names as the stories	A shared memory of the tradition

The stories of Pāṇini, Vararuci and Patañjali, told separately, are gathered here into a single institution: public examination. The tradition remembered these grammarians not as solitary geniuses, but as scholars whose work had been tested.

The AI Lesson

evaluation before trust

PĀṬALIPUTRA	AI
Works examined in public	Public benchmarks
Then honoured	Then deployed
Assembly of experts	Peer review
Fame follows testing	Trust follows evaluation

A modern analogy, not a claim about the ancient text.

Before an AI system is trusted, it is evaluated, ideally in public, by people other than its makers. Rājaśekhara describes the same principle for the sciences: first the examination, then the fame. *parīkṣitāḥ khyātim upajagmuḥ*: examined, they became famous. The order matters.

IN BRIEF

- Examined at Pāṭaliputra
- Pāṇini, Piṅgala, Vararuci, Patañjali
- First the test, then the fame

At Pāṭaliputra, Rājaśekhara records, the authors of the śāstras were examined before they were honoured. Pāṇini, Piṅgala, Vyāḍi, Vararuci and Patañjali: the cast of our stories, in one verse. First the test, then the fame.

CHAPTER 90

The Alphabet of Wisdom

Lalitavistara

ललितविस्तरः

Now a Buddhist story. The young prince Siddhārtha goes to school for the first time. He already knows sixty-four scripts. And as the children recite the alphabet, each letter speaks a truth of the Dharma.

The Writing School

Lalitavistara 10

In the tenth chapter of the Lalitavistara, the young Bodhisattva is taken to the writing school with great ceremony. The schoolmaster, Viśvāmitra, is overwhelmed by his radiance and falls to the ground. The boy takes a writing tablet and asks: which script will you teach me? Then he lists sixty-four, beginning with Brāhmī and Kharoṣṭī. The teacher admits he does not know most of them.

The Letters Speak

Lalitavistara 10

Then the children begin to recite the alphabet, guided by the Bodhisattva. When they say a, a sound goes forth: *anityaḥ sarvasaṃskāraḥ*, all conditioned things are impermanent. At each letter, a teaching beginning with that sound rings out. The alphabet itself becomes a sermon, from the first vowel to the last consonant.

The Letter and Its Word

a: anitya

a	the first letter
a-kāra	the letter a, named
anityaḥ	a word beginning with a
a teaching	the sound becomes meaning

Each letter keyed to a word that begins with it

Grammarians name a letter by adding *kāra*: *akāra*, the letter a. A *vārttika* states it: *varṇāt kāraḥ*. The Lalitavistara keys each letter to a word that begins with it: a for

anitya, impermanent. It is an acrostic alphabet, a list where every sound opens a doctrine.

Story and Grammar

the missing link

IN THE STORY	IN THE TRADITION
The prince knows 64 scripts	Many scripts, one language
Children recite the letters	The ordered alphabet
a: anitya	*akāra*, *varṇāt kāraḥ*
Every letter teaches	Sound as the root of meaning

Like the Bhāgavata in Chapter 75, the Lalitavistara puts the ordered alphabet at the start of wisdom. And like the Śiva Sūtras of Chapter 78, the sounds come in a fixed order, recited aloud. Hindu and Buddhist traditions alike treat the alphabet as the first sacred text a child learns.

The AI Lesson

scripts and tokens

LALITAVISTARA	AI
Sixty-four scripts	Many writing systems
One alphabet of sounds	One underlying language
Letters keyed to words	Associations in embeddings
Recited in order	Sequence matters

A modern analogy, not a claim about the ancient text.

A multilingual AI must handle many scripts, and learn that different scripts can write the same language. The Bodhisattva's sixty-four scripts make the same point: the sounds are one; the writing varies. Beneath every script lies the ordered inventory of sounds.

IN BRIEF

- Sixty-four scripts
- a: all things are impermanent
- The alphabet as a sermon

At school, the young Bodhisattva named sixty-four scripts. And as the children recited the alphabet, the letter a proclaimed: all conditioned things are impermanent. The alphabet became a sermon.

CHAPTER 91

History Written in Grammar

Dvyāśraya

द्व्याश्रयम्

Now a poem with two purposes at once. It tells the history of a royal dynasty, and it illustrates the rules of a grammar, in order. Its name says so: it rests on two supports.

Hemacandra's Grammar

Gujarat, twelfth century

In twelfth-century Gujarat, King Siddharāja Jayasiṃha wanted a grammar for his own kingdom. The Jain scholar Hemacandra composed it, and named it after the king and himself: the Siddhahemaśabdānuśāsana. It covers both Sanskrit and the Prakrits.

The Poem on Two Supports

the Dvyāśrayakāvya

Hemacandra then wrote the Dvyāśrayakāvya, a poem on the history of the Caulukya kings of Gujarat, beginning with Mūlarāja. Its Sanskrit cantos illustrate his own grammar of Sanskrit, and its Prakrit cantos his grammar of Prakrit. The verses follow the rules in the order the grammar gives them. Reading the history, the student also works through the grammar. An earlier poet, Bhaṭṭi, had done the same with the story of Rāma and the rules of Pāṇini. Hemacandra did it with history.

Two Supports

dvi + āśraya

dvi + āśraya	two + support
i + ā → yā	*yaṇ* sandhi: 6.1.77
dvyāśraya	resting on two
history + grammar	the two supports

6.1.77 iko yaṇ aci

The title is dvi plus *āśraya*: two supports. When i meets a different vowel, rule 6.1.77, iko *yaṇ* aci, turns it into the semivowel y. dvi plus *āśraya* becomes

dvyāśraya: that which rests on two. The two supports are history and grammar, and every verse leans on both.

Story and Grammar

the missing link

IN THE POEM	IN THE GRAMMAR
The Caulukya kings	Hemacandra's rules
Verse after verse	Rule after rule
History told	Grammar illustrated
dvi + *āśraya*	iko *yaṇ* aci, 6.1.77

In this whole book, we have looked for grammar hidden in stories. The Dvyāśraya does it on purpose, verse by verse. It is the clearest proof that Sanskrit authors saw story and grammar as two sides of the same text.

The AI Lesson

multi-task data

DVYĀŚRAYA	AI
One text, two purposes	Multi-task training
Story + rule examples	Content + structure
Ordered by the grammar	Curriculum learning
Readers learn both	Models learn both

A modern analogy, not a claim about the ancient text.

Training data can teach more than one thing at a time: content and structure together. The Dvyāśraya is a curriculum in that sense: ordered so that, as the story advances, the rules advance too. A good example teaches its subject and its grammar at the same time.

IN BRIEF

- A history of the Caulukya kings
- Every verse illustrates a rule
- *dvyāśraya*: on two supports

Hemacandra's Dvyāśraya told the history of the Caulukya kings, and illustrated his grammar rule by rule. Its name, by iko yaṇ aci, means resting on two. History written in grammar.

Part V

Śāstra Tales

Stories inside grammar

Chapters 92–108

CHAPTER 92

Seers Who Saw

Sākṣātkṛtadharmāṇaḥ

साक्षात्कृतधर्माणः

Now the final group: the stories told inside the śāstras themselves, beginning with Yāska's Nirukta. Yāska tells, in three sentences, why the Vedic auxiliary sciences had to be written at all.

Three Generations

साक्षात्कृतधर्माण ऋषयो बभूवुः
तेऽवरेभ्योऽसाक्षात्कृतधर्मभ्य उपदेशेन मन्त्रान्सम्प्रादुः
उपदेशाय ग्लायन्तोऽवरे बिल्मग्रहणायेमं ग्रन्थं समाम्नासिषुर्वेदं च वेदाङ्गानि च

sākṣātkṛtadharmāṇa ṛṣayo babhūvuḥ
te 'varebhyo 'sākṣātkṛtadharmabhya upadeśena mantrān samprāduḥ
upadeśāya glāyanto 'vare bilmagrahaṇāyemaṃ granthaṃ samāmnāsiṣur
vedaṃ ca vedāṅgāni ca

There were seers who had directly seen the Dharma. They passed the mantras by instruction to later ones who had not. These later ones, wearying of instruction, compiled this work, the Veda and its auxiliaries, for the sake of comprehension.

NIRUKTA 1.20

upadeśāya glāyanto 'vare *bilmagrahaṇāyemaṃ granthaṃ samāmnāsiṣur vedaṃ* ca *vedāṅgāni* ca. First there were seers who had seen the Dharma directly. They handed the mantras down by teaching, to those who had not seen. And those later ones, wearying of teaching, compiled this work, the Veda and the Vedāṅgas, so that the meaning could be grasped.

From Seeing to Writing

three stages

Yāska describes a decline in three stages. First, direct vision of the Dharma. Then, instruction passed from mouth to ear. Then, a generation for whom even instruc-

tion was a strain. For them, the knowledge had to be organised into texts. Grammar, etymology and the other auxiliary sciences exist because direct vision was lost.

Why a Seer Is a Seer

ṛṣir darśanāt

ṛṣi	seer
darśanāt	from seeing
stomān dadarśa	he saw the hymns
sākṣāt-kṛta-dharman	who made the Dharma visible

Nirukta 2.11 ṛṣir darśanāt

Yāska also explains the word *ṛṣi* itself: *ṛṣir darśanāt*, a seer is so called from seeing. He quotes the teacher Aupamanyava: *stomān dadarśa*, he saw the hymns. This is nirukta, explanation by meaning, the method we noted with Śakuntalā in Chapter 60. And the compound *sākṣātkṛtadharman*: one by whom the Dharma has been made present to the eyes.

Story and Grammar

the missing link

IN YĀSKA'S STORY	IN THE ŚĀSTRA
Seers saw the mantras	*ṛṣir darśanāt*
Taught by instruction	*upadeśa*
Later ones grow weary	*glāyantaḥ*
Texts compiled for understanding	Vedāṅgas: grammar, nirukta...

Yāska explains the origin of his own discipline with a story, and explains the key word of the story with an etymology. Every science in this book, from Pāṇini to Piṅgala, belongs to the third stage: knowledge written down so it would not be lost.

The AI Lesson

from intuition to specification

YĀSKA	AI
Direct vision	Expert intuition
Oral instruction	Apprenticeship
Written *śāstras*	Documentation and datasets
For those who did not see	For systems that must learn

A modern analogy, not a claim about the ancient text.

Experts often know more than they can say. To teach a machine, that knowledge must be written down explicitly. Yāska describes exactly that transition: from seeing, to telling, to systematic texts. Every dataset is a *granthaṃ samāmnāsiṣuḥ*: knowledge compiled for those who were not there.

IN BRIEF

- Seers saw the Dharma
- Teachers handed it down
- Later ones wrote the sciences

The seers saw; their pupils were taught; and the later ones, wearying of teaching, wrote the Veda and its sciences. A seer, says Yāska, is named from seeing: ṛṣir darśanāt. The sciences began when vision had to be written down.

CHAPTER 93

Not the Post's Fault

Kautsa

कौत्सः

Now a challenge to the whole enterprise. A teacher named Kautsa says the Vedic mantras have no meaning at all. Yāska answers him with arguments, and with one memorable image: a blind man and a post.

Kautsa's Objection

Nirukta 1.15

Yāska reports the view of Kautsa: *anarthakā* hi *mantrāḥ*, the mantras are without meaning. His reasons: their wording and order are fixed and cannot be changed, as if the sound alone mattered. Some are obscure, some seem to contradict each other, and some state the obvious. If so, the whole science of etymology, which explains the meaning of Vedic words, would be pointless.

Yāska's Reply

Nirukta 1.16

Yāska replies: *arthavantaḥ śabdasāmānyāt*. The mantras are meaningful, because their words are the same as the words of ordinary language. He answers each of Kautsa's points in turn. And for the charge of obscurity, he gives an image.

The Blind Man and the Post

> नैष स्थाणोरपराधो
> यदेनमन्धो न पश्यति
> पुरुषापराधः स भवति
>
> *naiṣa sthāṇor aparādho*
> *yad enam andho na paśyati*
> *puruṣāparādhaḥ sa bhavati*
>
> It is not the fault of the post that the blind man does not see it. It is the fault of the man.
>
> NIRUKTA 1.16

It is not the fault of the post that the blind man does not see it. The fault is the man's. If a mantra seems meaningless, the failure is in the reader, not in the text.

Meaning Defines a Stem

> **1.2.45**
> अर्थवदधातुरप्रत्ययः प्रातिपदिकम्
>
> *arthavad adhātur apratyayaḥ prātipadikam*
>
> A meaningful form, not a root and not a suffix, is a nominal stem, *prātipadika*.
> AṢṬĀDHYĀYĪ 1.2.45

Pāṇini's grammar takes Yāska's side at its foundation. Sūtra 1.2.45: A form that has meaning, arthavat, and is neither a root nor a suffix, is a nominal stem, a *prātipadika*. Meaning is the first condition for being a word-stem at all. Yāska's word, *arthavantaḥ*, is Pāṇini's first criterion.

Story and Grammar

the missing link

IN THE DEBATE	IN THE GRAMMAR
Kautsa: *anarthakāḥ*	Without meaning
Yāska: *arthavantaḥ*	arthavat: 1.2.45
Same words as ordinary speech	One grammar for Veda and speech
The blind man's fault	Analysis must be learned

Kautsa says 'without meaning'; Yāska says 'with meaning', and Pāṇini builds his definition of the stem on that same word. Yāska's argument, that Vedic words are ordinary words, is also Pāṇini's method: one grammar covers both. The blind man and the post is the reason this whole book exists: the meaning is there, for those who learn to see it.

The AI Lesson

meaning or noise?

YĀSKA	AI
'Meaningless' text	Data dismissed as noise
Same words as speech	Shared vocabulary
Fault of the reader	Limits of the model
Learn to see	Better models find structure

A modern analogy, not a claim about the ancient text.

When a model fails on difficult text, it is tempting to blame the text: noisy, archaic, obscure. Yāska's answer applies: the failure may be in the reader. Better analysis often reveals structure that was always there. Not the post's fault.

IN BRIEF

- Kautsa: mantras are meaningless
- Yāska: they are meaningful
- Not the post's fault

Kautsa said the mantras had no meaning. Yāska said they did, for their words are the words of ordinary speech. And if a blind man does not see the post, it is not the post's fault. The meaning is there.

CHAPTER 94

The Story Behind a Hymn

Devāpi

देवापिः

Now he shows one way to find that meaning: tell the story behind the hymn. Two Kuru princes, a kingdom without rain, and a hymn for the rain to return.

Two Brothers

Nirukta 2.10

Yāska introduces the hymn with the words *tatretihāsam ācakṣate*: here they tell a story. Devāpi, son of Ṛṣṭiṣeṇa, and Śantanu were brothers of the Kuru line. Śantanu, the younger, had himself consecrated king. Then for twelve years the god did not rain on his kingdom. The brahmins told him: you have done wrong. You were consecrated passing over your elder brother.

The Rain Hymn

Ṛgveda 10.98

Śantanu offered the kingdom to Devāpi. Devāpi declined, and said: let me be your purohita, your priest, and perform the sacrifice for you. He performed the rite, and the hymn he chanted for rain is preserved as Ṛgveda ten, ninety-eight. The rains came. The elder brother served the kingdom without ruling it.

Itihāsa: ‘So It Was’

iti + ha + āsa

iti	thus
ha	indeed
āsa	it was
itihāsa	an account of what was

aitihāsikāḥ: the interpreters by story

The word Yāska uses for such a story is *itihāsa*. Traditionally it is analysed as iti ha *āsa*: thus indeed it was. Yāska often contrasts two schools of interpretation: the nairuktas, who explain by etymology, and the *aitihāsikas*, who explain by story.

For this hymn, the story school supplies the setting that makes the words intelligible.

Story and Grammar

the missing link

IN THE STORY	IN THE NIRUKTA
Two Kuru brothers	Ārṣṭiṣeṇa: son of Ṛṣṭiṣeṇa
Drought and a wrong	Context of the hymn
Devāpi chants for rain	Ṛgveda 10.98
'Here they tell a story'	The *aitihāsika* method

The hymn itself calls Devāpi Ārṣṭiṣeṇa, the son of Ṛṣṭiṣeṇa, a patronymic like Pārīkṣita in Chapter 65. And Śantanu is the same name as the father of Bhīṣma in Chapter 61: the Kuru line runs from the Veda into the epic. Yāska shows that a hymn can need a story to be understood, just as a story can need grammar.

The AI Lesson

context windows

YĀSKA	AI
A hymn alone is obscure	A passage without context
The story supplies context	Retrieved background
Then the words make sense	Better interpretation
Etymology or story	Two complementary methods

A modern analogy, not a claim about the ancient text.

A language model given a passage without its background will often misread it. Retrieval systems add the missing context before the model answers. Yāska did the same: first the story, then the hymn. Meaning depends on what surrounds the words.

IN BRIEF

- Śantanu ruled; the rain stopped
- Devāpi chanted Ṛgveda 10.98
- *itihāsa*: so it was

The younger brother ruled, and the rain stopped. The elder became his priest, and chanted the hymn that brought it back. Yāska introduced it with: here they tell a story, an itihāsa. Some hymns need a story to be understood.

CHAPTER 95

The Rivers Speak

Viśvāmitra

विश्वामित्रः

Now a hymn that is itself a story, a conversation between a seer and two rivers. Yāska explains it, and explains the word 'river': rivers are the ones that roar.

At the Confluence

Ṛgveda 3.33; Nirukta 2.24

Yāska tells the setting. Viśvāmitra was the priest of King Sudās, and received rich gifts. Carrying his wealth, he came to the confluence of two rivers, the Vipāś and the Śutudrī, now the Beas and the Sutlej. They were in flood, and he could not cross. So he spoke to them, asking them to become fordable.

The Rivers Answer

Ṛgveda 3.33

Viśvāmitra praises the rivers as mothers, rushing like two mares let loose, like two cows licking their calf. He asks them to pause, just for a moment, at his words. The rivers answer: Indra, wielder of the thunderbolt, dug our course, and we flow at his command. Yet we will listen to you, poet. They bow low, like a mother to her child, and Viśvāmitra crosses. A Vedic hymn, in the form of a dialogue.

Why Rivers Are Nadī

nadanāt: from roaring

nad	to roar, resound
nada + *ṭ*	a *ṭ-marked* agent noun
nadī	feminine *ī*: 4.1.15
nadanāḥ	Yāska: the roaring ones

Nirukta 2.24 nadyaḥ … nadanā imā bhavanti

Explaining this hymn, Yāska asks why rivers are called *nadī*. His answer: *nadanā imā* bhavanti, they are the roaring ones, full of sound. Grammar agrees. From the root nad, to resound, comes an agent noun marked with *ṭ*, and by rule 4.1.15, the

rule we met with Jāhnavī in Chapter 50, its feminine takes *ī*: *nadī*. The rivers in the hymn speak, and their very name means the ones that make sound.

Story and Grammar

the missing link

IN THE HYMN	IN THE ŚĀSTRA
The rivers speak	nad: to resound
nadī, the roaring one	*nadanāt*, Nirukta 2.24
Feminine rivers, mothers	Feminine *ī*, 4.1.15
A dialogue hymn	Yāska supplies the setting

The poem gives the rivers voices; the etymology says they were always the sounding ones. Yāska's two tools, story and etymology, meet in one hymn.

The AI Lesson

negotiating with constraints

THE HYMN	AI
The rivers follow Indra's course	Systems follow their design
The poet asks politely	A well-framed request
They yield, within limits	Flexible within rules
Then resume their flow	Defaults restored

A modern analogy, not a claim about the ancient text.

The rivers say: our course was set by Indra. Yet they bend for a well-made request, and then flow on. Well-designed AI systems behave similarly: they follow their fundamental constraints, but respond flexibly to a clear, legitimate request. Firm in purpose, responsive in practice.

IN BRIEF

- Viśvāmitra asked the rivers to pause
- The rivers answered
- *nadī*: the roaring ones

At the confluence, Viśvāmitra asked the rivers to pause, and the rivers answered him. Yāska explains: they are called nadī because they roar, nadanāt. The rivers that speak are named for sound.

CHAPTER 96

Making the Past Present

Kaṃsaṃ Ghātayati

कंसं घातयति

Now Patañjali asks a puzzling question about performance. People say 'he makes Kaṃsa be killed', in the present tense, about an event long past. How can grammar allow it?

The Old Stories

Kṛṣṇa and Kaṃsa, Viṣṇu and Bali

Kṛṣṇa killed his tyrant uncle Kaṃsa at Mathurā. Viṣṇu as Vāmana bound the asura king Bali, as in Chapter 71. By Patañjali's time, these were stories of the remote past. Yet people said *kaṃsaṃ ghātayati*, he has Kaṃsa killed, and *baliṃ* bandhayati, he has Bali bound, in the present tense.

The Causative

> **3.1.26**
> **हेतुमति च**
>
> *hetumati ca*
>
> When there is an instigator, a causer of the action, the suffix ṆiC forms the causative verb.
>
> AṢṬĀDHYĀYĪ 3.1.26

The discussion comes in the Mahābhāṣya on *sūtra* 3.1.26. When there is a hetu, an instigator who makes the action happen, the verb takes the causative suffix *ṇic*: *ghātayati*, he causes to kill. But who, today, is causing Kaṃsa's death?

Patañjali's Answer

Mahābhāṣya on 3.1.26

Patañjali answers with the performers of his day. The *śobhanikas*, the actors, present Kaṃsa before the audience, and show him being killed. They really do cause the killing, on stage. The granthikas, the narrators, tell the story from its beginning to its end, and make the events present in the minds of the listeners. Even

in paintings, people point and say: look, Kaṃsa is being struck. The performance makes the past present, so the present causative is correct.

He Makes Kaṃsa Be Killed

han + ṇic

han	to kill
han + ṇic	causative: 3.1.26
ghāti	han → *ghāt*
ghātayati	present, 3rd singular

The actor is the hetu, the causer

han, to kill, with the causative *ṇic*, gives the stem *ghāti*, by the special replacement of han. With the present ending: *ghātayati*, he causes to kill. The actor is the hetu. The present tense is justified because the performance is happening now.

Story and Grammar

the missing link

ON STAGE	IN THE GRAMMAR
Kṛṣṇa's ancient deed	A past event
Actors perform it now	Present tense
The actor makes it happen	hetu: the causer
kaṃsaṃ ghātayati	*ṇic*, 3.1.26

Patañjali's answer is our oldest evidence for actors and story-narrators performing the Kṛṣṇa legend. And it states something every storyteller knows: telling a story makes it happen again, now. That is what this whole book has done, one hundred and eight times.

The AI Lesson

simulation and tense

PATAÑJALI	AI
Past event, present tense	Narrative vs real time
Actors cause it now	Simulation
Pictures depict it	Generated images and video
Grammar tracks who causes	Agency in generated content

A modern analogy, not a claim about the ancient text.

When AI generates a scene of a historical event, who is the agent of what happens in it? Patañjali's answer for theatre: the performer causes it, now, so the present causative is right. Grammar keeps track of agency even in performance. So should we.

IN BRIEF

- *kaṃsaṃ ghātayati*, *baliṃ* bandhayati
- Actors, narrators, pictures
- Performance makes the past present

People said 'he has Kaṃsa killed', in the present, about a deed long past. Patañjali explained: actors, narrators and painters make it happen again, now. Performance makes the past present.

CHAPTER 97

The Charioteer Corrects the Grammarian

Prājitā

प्राजिता

Now one of his most famous anecdotes: a grammarian meets a charioteer. The grammarian corrects the charioteer's word. The charioteer corrects the grammarian, twice.

Who Drives This Chariot?

Mahābhāṣya on 2.4.56

A grammarian asks: who is the driver of this chariot? He uses the word *pravetā*. The charioteer answers politely: sir, I am the *prājitā*. The grammarian says: *apaśabdaḥ*, that is a wrong word. The charioteer replies: you know what the rules yield, *prāptijña*, but not what is accepted in usage, *iṣṭijña*. This form is accepted.

The Rule Behind the Quarrel

> **2.4.56**
> **अजेर्व्यघञपोः**
>
> *ajer vy aghañapoḥ*
>
> The root aj, to drive, is replaced by *vī*, except before the suffixes *ghañ* and ap.
>
> AṢṬĀDHYĀYĪ 2.4.56

The quarrel is about *sūtra* 2.4.56. The root aj, to drive, is replaced by *vī*, except before the suffixes *ghañ* and ap. So with pra and the agent suffix, the rule gives *pravetā*. The grammarian is following Pāṇini. But Kātyāyana's comment allows the form with aj in this position too: *prājitā* is also correct.

The Second Correction

Mahābhāṣya on 2.4.56

Annoyed, the grammarian mutters: I am plagued by this duruta, this bad weaver, punning on *sūta*, charioteer, as if from ve, to weave. The charioteer answers: *sūta* is not from ve, to weave. It is from *sū*, to impel. If you want to insult me, the correct word is *duḥsūta*. The charioteer corrected the grammarian's grammar, and his insult.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Grammarian says *pravetā*	aj → *vī*: 2.4.56
Charioteer says *prājitā*	Allowed by the *vārttika*
prāptijña vs *iṣṭijña*	What rules give vs what is used
sūta from *sū*, not ve	Correct etymology

Patañjali tells this story against grammarians, inside a grammar. The rule says one thing; usage, recorded by Kātyāyana, adds another. The lesson is the one stated in Kātyāyana's first *vārttika* in Chapter 80: language comes from usage; grammar must follow it. The man who drives the chariot every day knows the word for it.

The AI Lesson

rules versus usage

THE CHARIOTEER	AI
prāptijña: knows the rules	Rule-based system
iṣṭijña: knows the usage	Data-driven system
Rule gives *pravetā* only	Over-strict output
Usage accepts *prājitā*	Real-world variation

A modern analogy, not a claim about the ancient text.

A system that knows only the rules will reject forms that real speakers use correctly. One that learns from usage, like the charioteer, knows what is actually accepted. The best grammars, then and now, combine both: rules, corrected by usage.

IN BRIEF

- 'I am the *prājitā*, sir'
- *prāptijña*, not *iṣṭijña*
- Usage corrects the rule

The grammarian said pravetā, by the rule. The charioteer said prājitā, by usage, and he was right. He knew what is accepted, not only what the rules produce. Usage corrects the rule.

CHAPTER 98

The Caravan Unseen

Śākaṭāyana

शाकटायनः

Now another grammarian, so absorbed in his work that a whole caravan of carts passed by him unnoticed. Patañjali tells it to explain a tense: the past that one did not witness.

The Absorbed Grammarian

Mahābhāṣya on 3.2.115

Śākaṭāyana was one of the great grammarians before Pāṇini, who cites him by name. Patañjali reports a story about him: he was sitting by the road, absorbed in thought. A long caravan of carts went past him, with all its noise. He did not perceive it at all. The event happened in front of him, and yet he did not witness it.

The Unwitnessed Past

> **3.2.115**
> **परोक्षे लिट्**
>
> *parokṣe liṭ*
>
> For a past action not witnessed by the speaker, the perfect tense, *liṬ*, is used.
>
> AṢṬĀDHYĀYĪ 3.2.115

The story illustrates *sūtra* 3.2.115. For a past event beyond the speaker's perception, use the perfect tense, *liṭ*: as in *cakāra*, he did, or *jagāma*, he went. The question is: can I use it about myself? Can I fail to witness my own action?

I Lamented, It Seems

the first-person perfect

parokṣa	beyond the eyes
1st person?	I always witness myself?
absent-mindedness	not if asleep or absorbed
supto 'haṃ kila vilalāpa	asleep, I lamented, it seems

The unwitnessed can include one's own acts

The commentators answer yes: when the mind is absent. The example given is supto '*haṃ* kila *vilalāpa*: I was asleep, and, so they say, I cried out. Asleep, or absorbed like Śākaṭāyana, a person does not perceive even what happens around him or through him. For such events, even in the first person, the perfect tense is correct.

Śākaṭāyana's Legacy

named by Pāṇini and Yāska

Pāṇini names him in rules such as 3.4.111, *laṅaḥ śākaṭāyanasyaiva*, recording a form only Śākaṭāyana allowed. Yāska reports his famous thesis: all nouns are derived from verbal roots. Like Āpiśali in Chapter 79, his own grammar is lost. He survives in others' rules, and in one story about not noticing a caravan.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
Carts pass before him	A past event
He does not perceive them	*parokṣa*: unwitnessed
Absorption, like sleep	First-person *liṭ* allowed
The grammarian as example	3.2.115

A grammarian's absent-mindedness becomes the textbook case for a subtle point of tense: being present is not the same as witnessing. Sanskrit grammar marks not just when an event happened, but whether the speaker perceived it.

The AI Lesson

evidentiality

SANSKRIT	AI
liṭ: not witnessed	Second-hand information
Witnessed past	Direct observation
kila: so it is said	Hedging
Grammar marks the source	Models should mark provenance

A modern analogy, not a claim about the ancient text.

Some languages mark in the grammar how the speaker knows something: seen directly, or heard from others. Sanskrit's *parokṣe liṭ*, and the particle kila, 'so they say',

do this. AI systems should do the same: distinguish what they observed in a source from what they are inferring.

IN BRIEF

- A caravan passed, unseen
- *parokṣe liṭ*: the unwitnessed past
- Present, yet not witnessing

Absorbed in thought, Śākaṭāyana did not see the caravan that passed before him. His story explains parokṣe liṭ: the perfect tense for what one did not witness, even about oneself. Present, yet not witnessing.

CHAPTER 99

No Sound Is Idle

Pāṇini Facing East

प्राङ्मुखः पाणिनिः

Now Patañjali describes Pāṇini at the moment of composing his grammar. The picture is brief, and from it Patañjali draws the principle that governs every interpretation of the sūtras.

The Master at Work

> प्रमाणभूत आचार्यो दर्भपवित्रपाणिः
> शुचाववकाशे प्राङ्मुख उपविश्य
> महता यत्नेन सूत्रं प्रणयति स्म
>
> *pramāṇabhūta ācāryo darbhapavitrapāṇiḥ*
> *śucāv avakāśe prāṅmukha upaviśya*
> *mahatā yatnena sūtraṃ praṇayati sma*
>
> The authoritative teacher, holding the purifying darbha grass in his hand, seated facing east in a pure place, composed the sūtras with great effort.
>
> MAHĀBHĀṢYA ON 1.1.1

The teacher, himself an authority, with the purifying darbha grass in his hand, seated facing east in a clean place, composed the *sūtras* with great effort.

Therefore, Not One Idle Sound

Mahābhāṣya on 1.1.1

Patañjali draws the conclusion at once. In a work composed this way, it is impossible that even a single sound should be without purpose. How much less, then, a whole *sūtra*. This becomes the commentators' method: if a sound in a *sūtra* seems unnecessary, they must find what it does.

The First Sūtra

> **1.1.1**
> **वृद्धिरादैच्**
>
> *vṛddhir ādaic*
>
> *ā*, ai and au are called *vṛddhi*.
>
> AṢṬĀDHYĀYĪ 1.1.1

The discussion begins at the very first *sūtra*. The sounds *ā*, ai and au are called *vṛddhi*. Three syllables of definition, and each sound counts. The final c is a marker from the Śiva Sūtras of Chapter 78: aic means ai and au. The t of *āt* limits it to long *ā* alone.

Every Sound Has a Job

ā + t + aic

vṛddhiḥ	the term defined
āt	long *ā* only: t-marker
aic	ai, au: *pratyāhāra*
ādaic	*ā* + ai + au

Markers, codes, nothing wasted

Take *ādaic* apart. *āt*: the t marks that only the long *ā* is meant, by rule 1.1.70, taparas *tatkālasya*. aic: the abbreviation from the Śiva Sūtras, covering ai and au. Every letter carries information. Remove one, and the rule changes its meaning.

Story and Grammar

the missing link

IN THE SCENE	IN THE GRAMMAR
Facing east, darbha in hand	Composition as a rite
With great effort	*mahatā* yatnena
No sound without purpose	Every marker matters
vṛddhir ādaic	1.1.1: three sounds, two markers

The scene presents grammar as a sacred act, composed with ritual purity and effort. The principle drawn from it is technical: assume every sound is meaningful. Later

grammarians said it in a proverb: grammarians rejoice at saving half a measure as at the birth of a son.

The AI Lesson

minimal description

PĀṆINI	AI
No idle sound	No redundant parameter
Half a measure saved	Compression
Markers carry information	Every bit encodes something
Interpret every element	Interpretability

A modern analogy, not a claim about the ancient text.

Information theory and machine learning value minimal descriptions: the shortest model that explains the data. Pāṇini's grammar is famous for exactly this economy, and Patañjali makes it a rule of reading. And interpretability research asks of neural networks what the commentators asked of *sūtras*: what does each part do?

IN BRIEF

- Facing east, darbha in hand
- Composed with great effort
- No sound is idle

Pāṇini composed his sūtras facing east, with darbha grass in his hand, with great effort. So, said Patañjali, not one sound in them can be idle, as vṛddhir ādaic shows. No sound is idle.

CHAPTER 100

The Lost Tradition Recovered

Vākyapadīya

वाक्यपदीयम्

This is the hundredth part, and its story is about survival: how the great commentary of Patañjali was nearly lost. The philosopher of language Bhartṛhari tells it in his Vākyapadīya.

The Tradition Breaks

Vākyapadīya 2.484–486

Bhartṛhari, writing several centuries after Patañjali, looks back on the history of the Mahābhāṣya. He says that later teachers, naming Baiji, Saubhava and Haryakṣa, followed dry reasoning and neglected it. The living line of teaching was broken. Among the southerners, the work survived only as a book.

Recovered from the Mountain

> पर्वतादागमं लब्ध्वा
> भाष्यबीजानुसारिभिः
> स नीतो बहुशाखत्वं
> चन्द्राचार्यादिभिः पुनः
>
> *parvatād āgamaṃ labdhvā*
> *bhāṣyabījānusāribhiḥ*
> *sa nīto bahuśākhatvaṃ*
> *candrācāryādibhiḥ punaḥ*
>
> Obtaining the tradition from the mountain, Candrācārya and others, following the seed of the Bhāṣya, again made it many-branched.
>
> VĀKYAPADĪYA 2

Then the recovery. Having obtained the tradition from the mountain, Candrācārya and others, following the seed of the Bhāṣya, made it branch out widely once again.

Seed and Branches

the image

bīja	seed: the text
āgama	the received tradition
bahuśākhatva	many-branchedness
Candrācārya	revives the school

A text survives; a tradition must be regrown

Bhartṛhari uses the image of a plant. The written commentary is a *bīja*, a seed. It contains everything, but it does not grow by itself. Only with an *āgama*, a living transmission, does it become *bahuśākha*, many-branched, a school again. Candrācārya, the founder of the Cāndra grammar, is credited with regrowing it.

No Thought Without Words

न सोऽस्ति प्रत्ययो लोके
यः शब्दानुगमादृते
अनुविद्धमिव ज्ञानं
सर्वं शब्देन भासते

na so 'sti pratyayo loke
yaḥ śabdānugamād ṛte
anuviddham iva jñānaṃ
sarvaṃ śabdena bhāsate

There is no cognition in the world that is not accompanied by words. All knowledge shines as if interwoven with words.

VĀKYAPADĪYA 1

Why did the tradition matter so much to Bhartṛhari? His most famous verse gives the answer. There is no cognition in the world without the accompaniment of words. All knowledge appears as if threaded through with language. If thought itself is woven with words, then the science of words must not be lost.

Story and Grammar

the missing link

IN THE STORY	IN THE GRAMMAR
The line of teaching breaks	The Mahābhāṣya neglected
Survives as a book	*bīja*: the seed text
Recovered from the mountain	*āgama*: transmission
Many branches again	Later schools of grammar

Everything in this book, Patañjali's anecdotes, Kātyāyana's notes, the stories of Pāṇini, reached us through that fragile line. Bhartṛhari's account is a reminder that a text can survive and still be lost, if no one can read it.

The AI Lesson

knowledge preservation

BHARTṚHARI	AI
Text survives, school lost	Data kept, expertise lost
Seed must be regrown	Models must be re-trained
Following the seed	Faithful reconstruction
Thought woven with words	Language as the medium of knowledge

A modern analogy, not a claim about the ancient text.

Digital archives preserve texts, but understanding them still needs living expertise, and increasingly, AI. Bhartṛhari describes both risks: a text with no readers, and a recovery that must follow the seed faithfully. Language models trained on Sanskrit are, in a small way, another attempt to regrow the branches.

IN BRIEF

- The tradition was broken
- Recovered from the mountain
- No thought without words

The Mahābhāṣya survived only as a book, until Candrācārya and others regrew its tradition from the mountain. For Bhartṛhari it mattered because all knowledge is woven with words. A tradition recovered.

CHAPTER 101

As the Tigress Carries Her Cubs

Śikṣā

शिक्षा

Now the science of pronunciation, śikṣā, gives a single unforgettable image. How should you hold a sound in your mouth? The way a tigress carries her cubs in her teeth.

The Tigress

the image

A tigress must move her cubs to safety. She lifts each one in her jaws. Her teeth could kill. She grips just firmly enough. Too hard, and she wounds the cub; too loose, and it falls. The phonetic manual sees in this the art of pronunciation.

Pronounce Like the Tigress

> यथा व्याघ्री हरेत्पुत्रान्
> दंष्ट्राभ्यां न च पीडयेत्
> भीता पतनभेदाभ्यां
> तद्वद्वर्णान्प्रयोजयेत्
>
> *yathā vyāghrī haret putrān*
> *daṃṣṭrābhyāṃ na ca pīḍayet*
> *bhītā patanabhedābhyāṃ*
> *tadvad varṇān prayojayet*
>
> As a tigress carries her cubs in her teeth without hurting them, fearing both that they may fall and that they may be pierced, so should one pronounce the sounds.
>
> PĀṆINĪYA ŚIKṢĀ

As a tigress carries her cubs in her teeth, yet does not hurt them, afraid both of dropping them and of piercing them, so should one utter the sounds.

Neither Too Hard nor Too Soft

the two faults

bheda	piercing: too forceful
patana	falling: too slack
sthāna	the right place
prayatna	the right effort

Correct sound = right place + right effort

The verse names two dangers. bheda, piercing: pronouncing too forcefully, distorting the sound. patana, falling: pronouncing too slackly, so the sound is lost or blurred. The phonetic sciences describe every sound by two things: its place, *sthāna*, and the effort, prayatna, with which it is made.

Same Place, Same Effort

> **1.1.9**
> तुल्यास्यप्रयत्नं सवर्णम्
>
> *tulyāsyaprayatnaṃ savarṇam*
>
> Sounds with the same place in the mouth and the same effort are *savarṇa*, homogeneous.
>
> AṢṬĀDHYĀYĪ 1.1.9

Pāṇini's grammar builds on exactly these two features. Sūtra 1.1.9: Sounds that share the same place in the mouth and the same effort are *savarṇa*, of the same class. That is why a and *ā* count as one class in the rules. The tigress's grip, place and pressure, is part of the definition of a sound.

Story and Grammar

the missing link

THE TIGRESS	THE SCIENCE
Teeth that could wound	bheda: over-articulation
Cubs that could fall	patana: under-articulation
Just the right grip	*sthāna* + prayatna
Cubs carried safely	*savarṇa*: 1.1.9

The tigress expresses in one picture what the grammar expresses in technical terms: precise control of place and effort. It also expresses care. The sounds of the Veda are to be carried like living things.

The AI Lesson

speech synthesis

ŚIKṢĀ	SPEECH AI
bheda: too forceful	Harsh, over-emphasised output
patana: too slack	Slurred, blurred output
Place and effort	Articulatory parameters
The tigress's balance	Natural-sounding speech

A modern analogy, not a claim about the ancient text.

Speech synthesis, like the narration of this book, must balance clarity and naturalness. Over-articulate, and the voice sounds harsh. Under-articulate, and words blur. The Śikṣā named both errors, and the balance between them, long before text-to-speech.

IN BRIEF

- The tigress carries her cubs
- Neither piercing nor dropping
- Right place, right effort

As a tigress carries her cubs, neither piercing nor dropping them, so should the sounds be spoken. Place and effort define a sound, and Pāṇini's savarṇa rule rests on them. Right place, right effort.

CHAPTER 102

Śiva's 63 Sounds

Śambhumata

शम्भुमतम्

Now the same phonetic manual counts the sounds of Sanskrit. It says there are sixty-three, or sixty-four, in the doctrine of Śambhu, Śiva, and that they were declared by the Self-born himself.

Sixty-Three or Sixty-Four

> त्रिषष्टिश्चतुःषष्टिर्वा
> वर्णाः शम्भुमते मताः
> प्राकृते संस्कृते चापि
> स्वयं प्रोक्ताः स्वयम्भुवा
>
> *triṣaṣṭiś catuḥṣaṣṭir vā*
> *varṇāḥ śambhumate matāḥ*
> *prākṛte saṃskṛte cāpi*
> *svayaṃ proktāḥ svayambhuvā*
>
> Sixty-three or sixty-four are the sounds in the doctrine of Śambhu, in Prakrit and in Sanskrit, declared by the Self-born himself.
>
> PĀṆINĪYA ŚIKṢĀ 3

Sixty-three or sixty-four are the sounds held in the doctrine of Śambhu, in Prakrit and in Sanskrit alike, declared by the Self-born himself.

Counting Them

the Śikṣā's tally

21 vowels	short, long, prolonged
25 stops	five rows of five
8: y r l v ś ṣ s h	semivowels and spirants
4 yamas	nasal 'twins'
4 more	*ṃ*, *ḥ* and two breaths
1 duḥspṛṣṭa	= 63; + pluta *ḷ* = 64

21 + 25 + 8 + 4 + 4 + 1 = 63

The verses that follow give the count. Twenty-one vowels, counting short, long and prolonged. Twenty-five stops, the five rows of five from Chapter 73. Eight more: the semivowels y, r, l, v and the spirants *ś*, *ṣ*, s and h. And four yamas, the nasal 'twin' sounds of Vedic recitation. Then *anusvāra*, visarga, and the two breath sounds before k and p. And one 'lightly touched' sound, *duḥspṛṣṭa*. That makes sixty-three. Counting the prolonged *ḷ* as well makes sixty-four.

Why 'Śambhu's Doctrine'?

the tradition

Why call it the doctrine of Śambhu? Because in the tradition, as in Chapter 78, the inventory of sounds comes from Śiva's drum, and Pāṇini's grammar from Śiva's grace, as in Chapter 79. The Śikṣā, attributed to Pāṇini's school, continues that lineage and places the whole sound system under Śiva's authority.

Story and Grammar

the missing link

THE ŚIKṢĀ	THE ŚIVA SŪTRAS
Sixty-three sounds	Fourteen lines
Includes yamas and breaths	Lists only rule-relevant sounds
Counts length variants	Length handled by rules
Śambhu's doctrine	Śiva's drum

The Śiva Sūtras list fewer sounds, because the grammar derives the rest by rule: long and prolonged vowels, for instance. The Śikṣā lists every distinct sound a reciter must produce, including subtle Vedic ones. One is a compressed code for rules; the other a complete phonetic inventory. Both are credited to Śiva.

The AI Lesson

phoneme inventories

ŚIKṢĀ	SPEECH AI
63 or 64 sounds	A phoneme set
Vowel length counted	Duration as a feature
Subtle Vedic sounds	Rare phones
Two inventories	Phonemic vs phonetic

A modern analogy, not a claim about the ancient text.

Every speech system starts with a phoneme inventory, and designers must decide what counts as a separate sound. The tradition faced the same choice and kept two lists: a minimal one for the grammar, a full one for pronunciation. Linguists still distinguish the two: phonemic and phonetic.

IN BRIEF

- Sixty-three or sixty-four sounds
- 21 + 25 + 8 + 4 + 4 + 1
- In Śambhu's doctrine

The Śikṣā counts sixty-three or sixty-four sounds, in the doctrine of Śambhu. Vowels, stops, semivowels and spirants, the Vedic twins and breaths: a complete inventory. Every sound, counted.

CHAPTER 103

Barley and the Cuckoo

Yava and Pika

यवः पिकश्च

Now a problem of meaning. The Veda prescribes an offering made of yava. But people disagree about what yava is. The Mīmāṃsā commentator Śabara settles it, with a verse from the Veda, and then asks about a word Sanskrit speakers did not know at all: pika.

Two Meanings of Yava

Śabara on Mīmāṃsā Sūtra, Book 1

The Veda prescribes *yavamayaś caruḥ*, an offering of cooked grain made of yava. Śabara reports that the Āryas use yava for barley, the long-awned grain. Some other speakers use the same word for a kind of millet. The rite depends on the answer. Which grain does the Veda mean?

The Veda Decides

Śabara's argument

Śabara answers from the Veda itself. A Vedic passage says: when the other plants wither, these stand up as if rejoicing. That describes barley, which ripens in spring, when other plants are drying up. Millet does not. So the Veda's own usage fixes the meaning: yava is barley. Where Vedic usage settles a word, it overrides other usage.

Made of Barley

yava + mayaṭ

yava	barley
+ mayaṭ	'made of': 4.3.143
yavamaya	made of barley
yavamayaś caruḥ	an offering of barley

4.3.143 mayaḍ vaitayor bhāṣāyām abhakṣyācchādanayoḥ

The word in the rite, yavamaya, is formed by Pāṇini's rule 4.3.143. The suffix *mayaṭ* means 'made of' or 'a product of': yava plus maya, made of barley. The

grammar builds the form. But the grammar cannot tell you which grain yava refers to. That needs evidence from usage, and here, from the Veda.

The Unknown Word

pika, nema, tāmarasa

Then the opposite problem. Some Vedic words are not used by Sanskrit speakers at all: pika, nema, *tāmarasa*. Śabara says their meaning may be learned from the people who do use them, even if those people are outside the Ārya community. Among them, pika means the cuckoo. That meaning is accepted, because nothing in the Veda contradicts it.

Story and Grammar

the missing link

THE PROBLEM	THE PRINCIPLE
yava: barley or millet?	Conflicting usage
'When others wither, it rises'	Vedic usage decides
yavamaya by 4.3.143	Grammar builds the form
pika from other speakers	Usage outside, if uncontradicted

Grammar gives the form of a word. Meaning comes from usage, and Śabara gives an order of evidence: the Veda's own description first; then the usage of those who know the word. This is the method of a careful lexicographer, stated as interpretive law.

The AI Lesson

grounding word meaning

ŚABARA	AI
One word, two meanings	Word-sense ambiguity
The text describes it	Disambiguate from context
pika from other speakers	Cross-lingual evidence
Accept if not contradicted	Consistency checks

A modern analogy, not a claim about the ancient text.

Language models must decide which sense of a word is meant, and they learn meanings from many communities of speakers. Śabara's method is still a good one: prefer the description in the text itself; borrow from other usage when the text is si-

lent; reject what contradicts it. Meaning is grounded in evidence, ranked by reliability.

IN BRIEF

- yava: barley, by the Veda's own words
- pika: the cuckoo, from other speakers
- Form from grammar, meaning from usage

Śabara fixed yava as barley, from the Veda's own description, and learned pika, cuckoo, from other speakers. Grammar builds yavamaya; usage tells us what yava is. Form from grammar, meaning from usage.

CHAPTER 104

A White One or a Dog?

Śveto Dhāvati

श्वेतो धावति

Now a sentence of just two words, so famous that every student of the śāstras knows it: śveto dhāvati. Does it mean 'a white one is running'? Or 'a dog is running from here'? Sandhi makes both identical.

The Shout in the Street

the classic example

Imagine someone in a street shouting: *śveto dhāvati*! One listener turns, looking for something white, a white horse perhaps, running. Another looks for a dog, running away from this spot. Both have heard every sound correctly. Both are grammatically right.

Reading One: A White One Runs

śvetaḥ + dhāvati

śvetaḥ dhāvati	white one + runs
ḥ → u before dh	6.1.114 *haśi* ca
a + u → o	6.1.87 *ād guṇaḥ*
śveto dhāvati	a white one runs

śvetaḥ dhāvati → śveto dhāvati

First reading: *śvetaḥ*, the white one, and *dhāvati*, runs. Before a voiced consonant like dh, the final *aḥ* changes. Rule 6.1.114, *haśi* ca, turns the visarga into u. Then a plus u becomes o, by *ād guṇaḥ*, the rule of Chapter 81. Result: *śveto dhāvati*. A white one is running.

Reading Two: A Dog Runs from Here

śvā + itaḥ + dhāvati

śvā itaḥ dhāvati	dog + from here + runs
ā + i → e	6.1.87 *ād guṇaḥ*
itaḥ → ito	6.1.114 again
śveto dhāvati	a dog runs from here

śvā itaḥ dhāvati → śveto dhāvati

Second reading: *śvā*, a dog; *itaḥ*, from here; *dhāvati*, runs. *śvā* plus *itaḥ*: *ā* plus i becomes e, by the same rule, *ād guṇaḥ*. That gives *śvetaḥ*. And the same visarga rule gives *śveto* before *dhāvati*. Result: *śveto dhāvati*. A dog is running from here. The same sound, by the same two rules, from different words.

Story and Grammar

the missing link

READING ONE	READING TWO
śvetaḥ: white one	*śvā + itaḥ*: dog + from here
haśi ca, *ād guṇaḥ*	*ād guṇaḥ*, *haśi* ca
śveto dhāvati	*śveto dhāvati*
Context decides	Context decides

The grammar is not ambiguous. Each derivation is exact. But going backwards, from sound to words, there are two answers. Indian logicians called the deliberate misuse of such double meanings *vākchala*, a quibble in words, and the Nyāya Sūtra lists it among unfair tactics in debate. Poets used the same property on purpose, as *śleṣa*, a figure of double meaning.

The AI Lesson

many-to-one mappings

ŚVETO DHĀVATI	AI
Derivation is exact	Forward process is deterministic
Two inputs, one output	Many-to-one mapping
Analysis has two answers	Inverse problem is ambiguous
Context chooses	Prior knowledge chooses

A modern analogy, not a claim about the ancient text.

In computing, a function that maps two inputs to the same output cannot be uniquely reversed. Sandhi is such a function. Sanskrit parsers must therefore return several analyses, and use context to rank them, as in Chapter 81. A white one, or a dog: only the street tells you which.

IN BRIEF

- *śvetaḥ dhāvati*: a white one runs
- *śvā itaḥ dhāvati*: a dog runs from here
- Same sound, two sentences

śveto dhāvati: a white one runs, or a dog runs from here. The same two sandhi rules produce the same sound from different words. Same sound, two sentences.

CHAPTER 105

The Old Woman's Boon

Vṛddhakumārī

वृद्धकुमारी

Now one wish that holds many wishes. An old woman, never married, is granted a single boon. She words it so cleverly that it brings her everything. Patañjali uses her to explain how one rule can do many jobs.

One Wish

the vṛddhakumārī story

A woman has grown old without marrying, living in poverty. Pleased with her, Indra offers her a single boon. She does not ask for a husband, or sons, or cows, or wealth. She asks only this: May my sons eat rice, rich with milk and ghee, from a bronze dish. One sentence. But think what it requires.

What the Wish Contains

one boon, many gifts

'my sons'	a husband, and children
'milk and ghee'	cows
'rice'	grain, fields
'a bronze dish'	wealth

Everything is implied by one sentence

'My sons': for that, she must have a husband, and children. 'Rich with milk and ghee': she must have cows. 'Rice': she must have grain. 'A bronze dish': she must have wealth. A single boon, carefully worded, implies all the others. The tradition calls this the *vṛddhakumārīvara* principle.

One Rule, Several Purposes

8.2.3
न मु ने

na mu ne

The substitution mu (in forms of adas) is not treated as 'not yet done' before the ending *nā*: *amunā*.

AṢṬĀDHYĀYĪ 8.2.3

Patañjali applies the principle in his discussion of *sūtra* 8.2.3. In the pronoun adas, 'that', a substitution produces mu. Normally, a rule in this section counts as not yet applied for the rules before it. Before the ending *nā*, says this rule, it does count: so we get *amunā*, by that. The commentators show how this short rule, worded just so, secures several correct forms at once, like the old woman's single wish.

Story and Grammar

the missing link

THE BOON	THE RULE
Only one wish allowed	Economy: one rule
Worded with care	Worded with care
Husband, sons, cows, wealth	Several forms secured
vṛddhakumārīvara	A principle of interpretation

Pāṇini, as Chapter 99 showed, saves every sound. The old woman saves every wish. Both achieve many results through one well-chosen statement. That is why the story became a principle of the grammarians.

The AI Lesson

specifying goals

THE OLD WOMAN	AI
One wish	One objective
Implies all she needs	Implicit sub-goals
Careful wording	Careful specification
Fulfilled completely	Intended outcome achieved

A modern analogy, not a claim about the ancient text.

In AI, a goal must be specified carefully: a system will pursue exactly what it is asked, and everything that follows from it. The old woman's wish is the ideal case: a single objective whose fulfilment necessarily brings everything she actually wanted. A well-written goal contains its own sub-goals.

IN BRIEF

- 'May my sons eat rice with milk and ghee'
- One boon, every gift
- One rule, many forms

Granted one boon, the old woman asked that her sons eat rice with milk and ghee from a bronze dish, and so received everything. Patañjali used her to show how one rule, well worded, secures many results. One wish, every gift.

CHAPTER 106

Ḍukṛñ Karaṇe

Bhaja Govindam

भज गोविन्दम्

Now the most famous line of grammar in all of Sanskrit devotional poetry. An old man recites a root from the list of verbs: ḍukṛñ karaṇe. And Śaṅkara tells him it will not save him.

The Old Scholar in Kāśī

the traditional setting

Tradition says that Śaṅkara, walking through Kāśī with his disciples, heard an old man reciting the rules of grammar. He was memorising the list of verbal roots, repeating: *ḍukṛñ karaṇe*, the root *kṛ*, in the sense of doing. Moved by the sight of an old life spent on rote learning, Śaṅkara burst into song.

Worship Govinda

भज गोविन्दं भज गोविन्दं
गोविन्दं भज मूढमते
सम्प्राप्ते सन्निहिते काले
नहि नहि रक्षति डुकृञ् करणे

bhaja govindaṃ bhaja govindaṃ
govindaṃ bhaja mūḍhamate
samprāpte sannihite kāle
nahi nahi rakṣati ḍukṛñ karaṇe

Worship Govinda, worship Govinda, worship Govinda, O foolish mind. When the appointed time draws near, ‘ḍukṛñ karaṇe’ will not save you, no, not at all.

BHAJA GOVINDAM 1

Worship Govinda, O deluded mind. When the time of death arrives, ‘*ḍukṛñ karaṇe*’ will not protect you.

Unpacking ḍukṛñ

Dhātupāṭha 8.10

ḍu	marker: 1.3.5
kṛ	the root itself
ñ	marker: 1.3.3
karaṇe	meaning: in doing

One root, two markers, one meaning

And yet the old man's line is a marvel of compression. *ḍukṛñ karaṇe* is entry eight, ten of the Dhātupāṭha. The root itself is only *kṛ*. The *ḍu* before it is a marker, by rule 1.3.5, *ādir ñiṭuḍavaḥ*. The final *ñ* is also a marker, by halantyam. And *karaṇe* gives the meaning: in the sense of doing.

What the Markers Do

kṛtrima, karoti, kurute

ḍu → *ktri*	3.3.88 *ḍvitaḥ ktriḥ*
kṛtrima	artificial, made
ñ → *both voices*	1.3.72
karoti / kurute	does / does for oneself

Markers carry grammar, as in Chapter 99

Each marker switches on rules. Because of *ḍu*, rule 3.3.88, *ḍvitaḥ ktriḥ*, allows the suffix ktri, giving *kṛtrima*, made, artificial. Because of *ñ*, rule 1.3.72 lets the verb take both voices. karoti, he does, for another; kurute, he does, for himself. Two silent letters encode a noun-forming suffix and the whole system of voice. No sound is idle.

Story and Grammar

the missing link

IN THE SONG	IN THE GRAMMAR
An old man repeating a root	Dhātupāṭha 8.10
'It will not save you'	Grammar is not liberation
ḍu and *ñ*	Markers: 1.3.5, 1.3.3
kṛtrima; karoti / kurute	3.3.88, 1.3.72

Śaṅkara does not mock grammar. He chose the most compressed, most ingenious line in the whole system, to make his point. Even the best of techniques is not the goal. *kṛ* means to do; but what we do must be directed somewhere.

The AI Lesson

means and ends

BHAJA GOVINDAM	AI
Memorising the rules	Optimising the technique
Forgetting the purpose	Losing sight of the goal
'It will not save you'	Capability is not wisdom
Bhaja Govindam	Align the means with an end

A modern analogy, not a claim about the ancient text.

A system can master every rule and still be pointed at the wrong goal. Śaṅkara's warning to the old scholar is a warning about technique without purpose. Grammar, and AI, are tools. The question is always what they serve.

IN BRIEF

- *ḍukṛñ karaṇe* will not save you
- *ḍu* and *ñ*: silent, but powerful
- Technique must serve a purpose

An old man recited ḍukṛñ karaṇe, and Śaṅkara sang: it will not save you. Yet in those few sounds, two markers encode kṛtrima, karoti and kurute. Technique must serve a purpose.

CHAPTER 107

The Ghost's Question

Pakvam

पक्वम्

Now a scholar who could not escape it, even after death. A brahmarākṣasa, the ghost of a learned brahmin, waits in a tree and asks every traveller a question of grammar.

The Ghost in the Tree

a traditional tale

In a traditional tale, a learned brahmin who misused his knowledge is reborn as a *brahmarākṣasa*, a scholar-ghost. He lives in a tree by the road. He cannot be released until someone answers his question correctly. He asks every passing traveller about the verb pac, to cook: what is 'cooked'? Those who answer wrongly, he devours.

The Right Answer

the tale's ending

Many travellers answer paktam. It sounds right: pac plus the participle suffix ta, as in *kṛtam*, done. They are wrong, and are devoured. At last a young scholar comes by. Cooked, he says, is pakvam. And he gives the rule. The ghost, hearing correct grammar at last, is released from his curse.

Cooked Is Pakva

> **8.2.52**
> **पचो वः**
>
> *paco vaḥ*
>
> After the root pac, the t of the past participle suffix is replaced by v: pakva, cooked.
>
> AṢṬĀDHYĀYĪ 8.2.52

After pac, the t of the participle suffix kta is replaced by v. So not paktam, but pakvam. Two syllables of *sūtra*, and a life saved.

Deriving Pakva

pac + kta

pac + ta	cook + past participle
c → k	before t
pak + va	t → v: 8.2.52
pakvam	cooked, ripe

The exception beats the general pattern

Start with pac plus the participle suffix ta. The c becomes k before the following consonant, as in *paktṛ*, a cook. Then the special rule: t becomes v. pakva, cooked; also ripe, as a ripe fruit. The general pattern would give pakta. The specific rule overrides it, and in Pāṇini, the specific always wins.

Story and Grammar

the missing link

IN THE TALE	IN THE GRAMMAR
'What is cooked?'	pac + kta
Many say paktam	The general pattern
The scholar says pakvam	paco *vaḥ*: 8.2.52
The ghost is freed	Specific beats general

The ghost's question is a trap built on an exception: the obvious answer follows the general rule, and is wrong. Only someone who knows the specific *sūtra* survives.

The AI Lesson

the obvious answer

THE GHOST'S TEST	AI
Obvious answer: paktam	Pattern-based guess
Correct answer: pakvam	Rule-aware answer
A trap on an exception	Adversarial test
Cite the *sūtra*	Show the reasoning

A modern analogy, not a claim about the ancient text.

Benchmarks for AI often include questions where the obvious, pattern-based answer is wrong. The ghost's test is one: it rewards the specific rule, not the familiar pattern. And the young scholar did not just answer. He cited the rule. Correct answers should come with their reasons.

IN BRIEF

- 'What is cooked?'
- Not paktam, but pakvam
- paco *vaḥ*: the specific rule wins

The ghost asked, what is cooked? Many said paktam, and perished. One said pakvam, by paco vaḥ, and set the ghost free. The specific rule wins.

CHAPTER 108

The Camel Word

Uṣṭra

उष्ट्रः

This is the last story. It is told of Kālidāsa, the greatest poet of Sanskrit, before he was a poet at all. He was exposed by a single mispronounced word: the word for camel.

The Fool and the Princess

the popular legend

The legend tells of a learned princess, often named Vidyottamā, who defeated every scholar who sought to marry her. The humiliated scholars took revenge. They found a simple young man, so foolish he was cutting the branch he sat on. They presented him as a great sage who spoke only in gestures, and interpreted his gestures as profound answers. The princess was convinced, and married him.

The Camel

the popular legend

One day, a camel passed by the palace, and the husband, forgetting his silence, cried out its name. But he could not say *uṣṭra*. He said *uṭra*, dropping the cluster. No scholar could mispronounce so common a word. The princess understood that she had been deceived. Driven out in shame, he went to the temple of the goddess Kālī.

Why Uṣṭra Is Hard

uṣ + tra

uṣ + tra	root + suffix
ṣ + t	retroflex meets dental
ṣ + ṭ	8.4.41 *ṣṭunā ṣṭuḥ*
uṣṭra	camel

8.4.41 ṣṭunā ṣṭuḥ

Why is the word difficult? Because of its cluster, *ṣṭr*. When a dental t follows the retroflex *ṣ*, rule 8.4.41, *ṣṭunā ṣṭuḥ*, makes it retroflex too: *ṭ*. The result is three consonants together, *ṣ*, *ṭ*, r, each made with a different shape of the tongue. An untrained

speaker simplifies it. Correct speech, as Rāma said of Hanumān in Chapter 57, is the sign of learning.

Is There Something Special in Speech?

the legend's ending

The goddess blessed him, and he became Kālidāsa, the servant of Kālī, master of speech. He returned to the princess. She asked: asti *kaścid vāgviśeṣaḥ*? Is there now something special in your speech? The legend says he began a great work with each of her words. asti: the Kumārasambhava opens with 'asti'. *kaścit*: the Meghadūta opens with '*kaścit*'. *vāk*: the Raghuvaṃśa opens with '*vāk*'.

Word and Meaning

> वागर्थाविव संपृक्तौ
> वागर्थप्रतिपत्तये
> जगतः पितरौ वन्दे
> पार्वतीपरमेश्वरौ
>
> *vāgarthāv iva saṃpṛktau*
> *vāgarthapratipattaye*
> *jagataḥ pitarau vande*
> *pārvatīparameśvarau*
>
> For the understanding of word and meaning, I bow to Pārvatī and Parameśvara, the parents of the world, joined like word and meaning.
>
> RAGHUVAṂŚA 1.1

For the understanding of word and meaning, I bow to Pārvatī and Śiva, the parents of the world, united as word and meaning are united.

Story and Grammar

the missing link

IN THE LEGEND	IN THE GRAMMAR
He says '*uṭra*'	The cluster lost
uṣṭra: *ṣ* + *ṭ* + r	*ṣṭunā ṣṭuḥ*, 8.4.41
asti *kaścid vāk*	Three words, three poems
vāgarthāv iva	Word and meaning, inseparable

The story begins with a failure of grammar and ends with the poet whose first verse is about grammar's deepest subject: the union of word and meaning. That union, *vāgarthau*, is what all one hundred and eight stories of this book have tried to show.

The AI Lesson

the last lesson

KĀLIDĀSA	AI
Gestures interpreted as wisdom	Outputs over-interpreted
One word reveals the truth	One test reveals the limits
Real learning, then mastery	Real capability, earned
Word joined to meaning	Language grounded in meaning

A modern analogy, not a claim about the ancient text.

The scholars' trick worked because people read wisdom into gestures. We sometimes read understanding into machines in the same way. A single simple test, a camel's name, revealed the truth. Careful evaluation does the same. And the goal, for poet or machine, is Kālidāsa's: word and meaning, joined as one.

IN BRIEF

- '*uṭra*' revealed the fool
- Kālī made him Kālidāsa
- Word and meaning, united

One mispronounced camel exposed a fool; the goddess made him the greatest of poets. He began the Raghuvaṃśa by honouring word and meaning, united like Pārvatī and Śiva. Word and meaning, united.

Afterword: The Shape of the Hundred and Eight

Read together, the one hundred and eight stories show a few patterns again and again.

Names are derivations. From Indra's epithets in the Veda to Hanumān, Bhīṣma, Janamejaya and Patañjali, a name in Sanskrit is usually a small sentence compressed by rule. The story tells what happened; the suffix records it.

Sound is ordered. The Śiva Sūtras, the Bhāgavata's alphabet of creation, the body of Brahmā made of letters, and the Śikṣā's sixty-three sounds all assume a fixed inventory of sounds in a fixed order. Riddles such as the sixteenth and the twenty-first stop depend on it.

Joining and separating. Sandhi joins words in speech, and analysis must separate them again. The queen's *modakaiḥ*, the white one or the dog of *śveto dhāvati*, and the Saṃhitā and Pada texts of the Veda all turn on this.

Rules and usage. The grammar is exact, but it answers to usage: the charioteer's *prājitā*, Kātyāyana's first vārttika, Śabara's barley and cuckoo. The tradition never forgot that language comes first.

Preservation. Many of the stories are about loss and recovery: the Aindra grammar swept away, the Mahābhāṣya surviving as a book, Guṇāḍhya's great story burned leaf by leaf. Grammar is presented, again and again, as the means by which speech survives.

These are also the themes of language technology today: compression, inventory, segmentation, the balance of rules and data, and the preservation of knowledge. That is why each chapter ends with an AI lesson. The analogies are modern; the problems are old.

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2	The Word List That Never Ends	Mahābhāṣya, Paspaśā; Mahābhāṣya · Paspaśā
3	One Accent, Two Meanings	Taittirīya Saṃhitā 2.4.12 · Śatapatha 1.6.3; Mahābhāṣya · Paspaśā
4	The Asuras Lose Speech	Śatapatha Brāhmaṇa 3.2.1; Śatapatha Brāhmaṇa 3.2.1.23; Mahābhāṣya · Paspaśā
5	The Four-Horned Bull	Ṛgveda 4.58.3; Mahābhāṣya, Paspaśā
6	The Four Divisions of Speech	Ṛgveda 1.164.45; Nirukta 13.9 · Mahābhāṣya
7	Speech Speaks for Herself	Ṛgveda 10.125.1; Ṛgveda 10.125
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11	Seven Rivers, Seven Cases	Ṛgveda 8.69.12; Mahābhāṣya, Paspaśā
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18	Viṣṇu's Three Strides	Ṛgveda 1.22.17; Nirukta 12.19
19	Choosing a Son's Name	Āśvalāyana Gṛhyasūtra 1.15 · Mahābhāṣya, Paspaśā
20	Two Registers of Speech	Mahābhāṣya · Paspaśā; Patañjali's point
21	Oṃ Questioned by Grammarians	Gopatha Brāhmaṇa 1.1.24–27
22	The Metres Fly for Soma	Aitareya Brāhmaṇa 3.25–28 · Śatapatha 4.3.2; Ṛgveda 3.62.10
23	Joined and Separated Speech	Aitareya Āraṇyaka 3.1.3; Aitareya Āraṇyaka 3.1.3; Aitareya Āraṇyaka 3.1.5
24	The Body Made of Sounds	Aitareya Āraṇyaka 3.2.1

25	Days, Nights and Junctions	Aitareya Āraṇyaka 3.2.2
26	The Body as the Gods' Vīṇā	Aitareya Āraṇyaka 3.2.5; Pāṇinīya Śikṣā
27	A Is All Speech	Aitareya Āraṇyaka 2.3.6
28	From Idandra to Indra	Aitareya Upaniṣad 1.3.13–14
29	Meditation on Connection	Taittirīya Upaniṣad 1.3
30	Sounds Belong to Gods	Chāndogya Upaniṣad 2.22.3; Chāndogya Upaniṣad 2.22.5
31	Hiding in the Metres	Chāndogya Upaniṣad 1.4.2; Chāndogya Upaniṣad 1.4.3–4
32	Speech and Breath Make Sāman	Chāndogya 1.7.1 · Bṛhadāraṇyaka 1.3.22; Chāndogya Upaniṣad 1.6–7
33	Speech Pierced by Evil	Chāndogya Upaniṣad 1.2; Chāndogya Upaniṣad 1.2.3
34	Chanting Without Knowing	Chāndogya Upaniṣad 1.10; Chāndogya Upaniṣad 1.10.9; Chāndogya Upaniṣad 1.11
35	The Veda of the Vedas	Chāndogya Upaniṣad 7.1.2; Chāndogya Upaniṣad 7.1.3
36	Grammar Among the Sciences	Muṇḍaka Upaniṣad 1.1.3; Muṇḍaka Upaniṣad 1.1.5; Pāṇinīya Śikṣā
37	The Son Named for His Mother	Chāndogya Upaniṣad 4.4; Chāndogya Upaniṣad 4.4.2
38	The Fire Named After Naciketas	Kaṭha Upaniṣad 1.1; Kaṭha Upaniṣad 1.1.15; Kaṭha Upaniṣad 1.1.16
39	Sleep Explained	Chāndogya Upaniṣad 6.8.1; Chāndogya Upaniṣad 6.8.2
40	That Thou Art	Chāndogya Upaniṣad 6; Chāndogya Upaniṣad 6.8.7
41	Truth in Three Syllables	Chāndogya Upaniṣad 8.3.5; Chāndogya 8.3.5 · Bṛhadāraṇyaka 5.5.1
42	The First Word: I Am	Bṛhadāraṇyaka Upaniṣad 1.4.1
43	The Imperishable Syllable	Bṛhadāraṇyaka Upaniṣad 3.8; Bṛhadāraṇyaka Upaniṣad 3.8.8; Bṛhadāraṇyaka Upaniṣad 3.8.9
44	Da, Da, Da	Bṛhadāraṇyaka Upaniṣad 5.2; Bṛhadāraṇyaka Upaniṣad 5.2.3
45	The Measures of Oṃ	Praśna Upaniṣad 5
46	The Fourth Beyond Sound	Māṇḍūkya Upaniṣad 1; Māṇḍūkya Upaniṣad 9–11; Māṇḍūkya Upaniṣad 12
47	The First Verse and Its Famous Form	Rāmāyaṇa 1.2; Rāmāyaṇa Ce 1.2.14

48	Son of the Kṛttikās	Rāmāyaṇa CE 1.36
49	Born with Poison	Rāmāyaṇa 1.69–70
50	The River Swallowed and Released	Rāmāyaṇa 1.43 (common edition)
51	Found in the Furrow	Rāmāyaṇa CE 1.65
52	Names from the Churning	Rāmāyaṇa CE 1.44
53	The Demoness Who Tests Two Rules	Rāmāyaṇa, Araṇyakāṇḍa
54	The Roar That Named a King	Rāmāyaṇa, Uttarakāṇḍa 16
55	The Boon That Became Sleep	Rāmāyaṇa, Uttarakāṇḍa 10
56	Rāma, the Arrow and Vālin	Rāmāyaṇa, Kiṣkindhākāṇḍa
57	Not One Word Wrong	Rāmāyaṇa, Kiṣkindhākāṇḍa 3; Rāmāyaṇa 4.3; Rāmāyaṇa 4.3
58	The Struck Jaw	Rāmāyaṇa, Kiṣkindhākāṇḍa
59	Which Language to Speak?	Rāmāyaṇa, Sundarakāṇḍa; Rāmāyaṇa · Sundarakāṇḍa
60	Guarded by Birds	Mahābhārata, Ādiparvan 66; Mahābhārata 1.66
61	The Terrible Vow	Mahābhārata, Ādiparvan 94; Mahābhārata 1.94
62	The Coded Warning	Mahābhārata, Ādiparvan
63	Steady in Battle	Mahābhārata
64	Heroes Inside a Sūtra	Mahābhārata; Mahābhāṣya on 4.3.98
65	Names of a Lineage	Mahābhārata, Ādiparvan
66	Arjuna's Ten Names	Mahābhārata, Virāṭaparvan
67	Of Compounds I Am the Dvandva	Bhagavad Gītā 10; Bhagavad Gītā 10.33
68	The Unborn Critic	Mahābhārata 3.132; Mahābhārata 3.133–134
69	"Oh, Don't!"	Kālidāsa, Kumārasambhava 1; Kumārasambhava 1.26
70	Milking the Earth	Kumārasambhava 1.2
71	Bali and the Milk Ocean	Siddhāntakaumudī · On 1.4.51
72	The Waters' Abode	Manusmṛti 1; Manusmṛti 1.10
73	The Two-Letter Instruction	Bhāgavata Purāṇa 2.9; Bhāgavata Purāṇa 2.9.6
74	Brahmā's Body of Letters	Bhāgavata Purāṇa 3.12; Bhāgavata Purāṇa 3.12
75	The Ordered Sounds of Creation	Bhāgavata Purāṇa 12.6
76	Move, Move!	Devībhāgavata Purāṇa 6; Devībhāgavata Purāṇa 6.9
77	Saved by a Name	Bhāgavata Purāṇa 6.1; Bhāgavata Purāṇa 6.1–2; Bhāgavata Purāṇa 6.2.14
78	Fourteen Drumbeats	Nandikeśvara's Kāśikā; Nandikeśvarakāśikā 1

79	Śiva Decides the Contest	Kathāsaritsāgara, Book 1
80	The Boy Who Heard Once	Kathāsaritsāgara 1.2; Mahābhāṣya · Paspaśā
81	Water or Sweets?	Kathāsaritsāgara, Book 1
82	The Vow to Give Up Sanskrit	Kathāsaritsāgara 1.6; Kathāsaritsāgara 1.7; Kathāsaritsāgara 1.8
83	Skanda's Grammar	Agni Purāṇa, grammar chapters
84	The Serpent Becomes the Commentator	Traditional Invocation
85	The Bird and the Soma	Mahābhārata, Ādiparvan
86	The Serpent Escapes by Metre	Chandaḥśāstra 8.20–22
87	Eaten by Partridges	Viṣṇu Purāṇa 3.5
88	The Lion That Killed Pāṇini	Pañcatantra
89	The Examination at Pāṭaliputra	Rājaśekhara, Kāvyamīmāṃsā 10; Kāvyamīmāṃsā 10
90	The Alphabet of Wisdom	Lalitavistara 10
91	History Written in Grammar	Gujarat, twelfth century
92	Seers Who Saw	Nirukta 1.20
93	Not the Post's Fault	Nirukta 1.15; Nirukta 1.16; Nirukta 1.16
94	The Story Behind a Hymn	Nirukta 2.10; Ṛgveda 10.98
95	The Rivers Speak	Ṛgveda 3.33; Nirukta 2.24; Ṛgveda 3.33
96	Making the Past Present	Kṛṣṇa and Kaṃsa, Viṣṇu and Bali; Mahābhāṣya on 3.1.26
97	The Charioteer Corrects the Grammarian	Mahābhāṣya on 2.4.56
98	The Caravan Unseen	Mahābhāṣya on 3.2.115
99	No Sound Is Idle	Mahābhāṣya On 1.1.1; Mahābhāṣya on 1.1.1
100	The Lost Tradition Recovered	Vākyapadīya 2.484–486; Vākyapadīya 2; Vākyapadīya 1
101	As the Tigress Carries Her Cubs	Pāṇinīya Śikṣā
102	Śiva's 63 Sounds	Pāṇinīya Śikṣā 3
103	Barley and the Cuckoo	Śabara on Mīmāṃsā Sūtra, Book 1; Śabara's argument
104	A White One or a Dog?	
105	The Old Woman's Boon	
106	Ḍukṛñ Karaṇe	Bhaja Govindam 1
107	The Ghost's Question	
108	The Camel Word	Raghuvaṃśa 1.1

Glossary

akṣara
syllable; also “imperishable”

anubandha / it
a marker letter in a sūtra or suffix, not pronounced, that triggers rules

apādāna
the source or point of departure; expressed by the ablative

apaśabda
an incorrect word-form

Aṣṭādhyāyī
Pāṇini’s grammar in eight books

bahuvrīhi
a compound that refers to something outside itself: “whose bends are eight”

Dhātupāṭha
the list of verbal roots with their meanings

dvandva
a copulative compound: “X and Y”

gaṇa
a listed group of words to which a rule applies

guṇa
the vowel grade e, o, ar; also the sandhi of a + i, u

guru / laghu
heavy and light syllables in metre

hetu
the instigator in a causative

itihāsa
narrative history, “thus it was”

kāraka
a role in an action: agent, object, instrument, recipient, source, location

kartṛ

the agent

karaṇa
the instrument

karma
the object of an action

kṛt
a primary suffix added to a root

Mahābhāṣya
Patañjali's great commentary on Pāṇini

mātrā
a unit of vowel length

nañ
the negative particle in compounds: a-, an-

nirukta
explanation of words by meaning; Yāska's work

pada
an inflected word; also the word-by-word text of the Veda

parokṣa
beyond the speaker's perception

pluta
a prolonged vowel of three measures

prastāra
Piṅgala's listing of all metrical patterns

prātipadika
a nominal stem

pratyāhāra
an abbreviation such as ac or hal formed from the Śiva Sūtras

saṃdhi
the joining of sounds at boundaries

saṃhitā
continuous text; a Vedic collection

saṃjñā
a name or technical term

samāsa
compound

savarṇa
sounds of the same place and effort

Śikṣā
the science of pronunciation

Śiva Sūtras
the fourteen sound-lists that open Pāṇini's grammar

sup / tiṅ
noun endings / verb endings

sūtra
a compressed rule

taddhita
a secondary suffix added to a noun

tatpuruṣa
a determinative compound

vārttika
Kātyāyana's critical note on a sūtra

vṛddhi
the vowel grade ā, ai, au

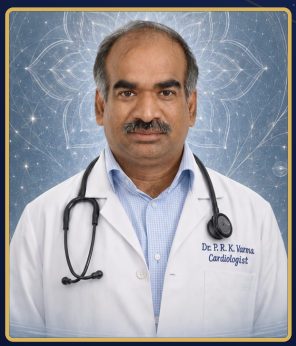
yaṇ
the semivowels y, v, r, l

Grammar, hidden in the stories

Why is Hanumān named for his jaw? Why does Yudhiṣṭhira's name keep its locative? Why did a queen's "modakaiḥ" bring a king sweets instead of water, and why did a ghost in a tree free the one traveller who said *pakvam*?

This book gathers 108 stories from the Vedas, the Upaniṣads, the epics, the Purāṇas and the śāstras, and shows the precise rule of Pāṇini's grammar that each one carries: the story, the text in Devanagari and transliteration, the derivation, the sūtra, and a modern lesson for artificial intelligence, clearly marked as analogy.

One story per chapter. One rule per story. One hundred and eight missing links between Sanskrit narrative and Sanskrit grammar.



Dr.P.R.K.Varma, M.D., D.M.

Cardiologist; Chairman of Varma Hospitals and Imperial Hospitals, Bhimavaram, Andhra Pradesh. Concept creator of Techno-Mythological Systems, working across Sanskrit and Vedantic scholarship, clinical medicine and artificial intelligence.

His books include works on the Aṣṭāvakra Gītā and the Yogavāsiṣṭham, *The Art of Healing*, *The Art of AI Filmmaking*, *The Bottlenecks from Silicon to Intelligence*, the *100 Bottlenecks* series and the Cosmic AI Project.