

Adhyayana-vidhiḥ

A Manual of Sanskrit

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Chapter I

Phonology

§I. Basic concepts

The speech-sounds of Sanskrit were called वर्णः (“colors”) or अक्षरः (“indestructible”). These words referred both to the distinct speech-sounds of Sanskrit (that is, roughly, its phonemes) and to its syllables. That is because, in the scripts in which Sanskrit has historically been written, each letter corresponds to a syllable.

Sanskrit is written in a wide variety of scripts. Nowadays it is generally written in the Devanagari script, although historically each region of South and Southeast Asia had a different script for writing Sanskrit. All of these regionally-distinct scripts derive from the ancient Brāhmī script, which was used in inscriptions — although not for Sanskrit — from around the fourth century BCE. The Brāhmī script, and its descendants, were specifically designed to capture the distinctions in the speech-sounds of Sanskrit and related languages. For that reason, Sanskrit has always been **written exactly as it is pronounced**.

NOTE: The circumstances in which writing arose and spread in South Asia are still somewhat unknown. It used to be thought that the edicts of Aśōka (third century BCE), which were written

in a Middle Indic language related to Sanskrit, were the earliest examples of the Brāhmī and Kharoṣṭhī scripts. The Kharoṣṭhī script, which was used in the northwest of the subcontinent, was based on the Aramaic script, which the Achaemenids had introduced in those regions in previous centuries. Evidence is accumulating, however, that Brāhmī was used before Aśoka, and surprisingly, in the far south of the subcontinent (Tamil Nadu and Sri Lanka).

Sanskrit is also sometimes written in a *transliteration* of these Indic scripts into Roman letters. The principle behind these transliterations is representing the same speech-sounds that are represented in Indic scripts. But because Sanskrit makes distinctions that European languages generally do not make, such as aspiration and retroflexion, the Roman letters have to be supplemented with diacritics. There are two prevalent systems of transliterating Indic scripts: the ISO-15919 system, which I prefer because of its compatibility with other South Asian languages, and the IAST (International Alphabet of Sanskrit Transliteration), which is specifically designed for Sanskrit. Sometimes Sanskrit is written “informally” in Roman letters, without diacritics, as in “Yudhishtira,” “Rama,” “Lakshmana,” and so on.

§1.1. Phonemes

Phonemes are the fundamental sounds out of which words in a language are constructed. They are discrete and contrastive units of speech. They are discrete in the sense that, within a given language, there are stable criteria that distinguish each phoneme from each of the others and therefore divide up the continuum of speech-sounds into a specified number of phonemes. They are contrastive in the sense that, within a given language, replacing one phoneme in a word with another at the same position will result in an altogether different word. In English, for example, we know that /b/ and /k/ are phonemes because “bar” [bar] and “car” [kar] form a “minimal pair.” By contrast, we can guess that /k^h/ is not an English phoneme because [k^har] and [kar] do not contrast with each other.

Phonemes are sometimes called **segments** to call attention to their linear sequence.

Sanskrit’s phonemes, like those of most other languages, are distinguished into vowels and consonants.

NOTE: Sanskrit has no unambiguous word for “phoneme.” The words अक्षरम् “indestructible” and वर्णः “color” are often used with reference to phonemes, but often, also, with reference to syllables, whether spoken or written.

NOTE: Linguists and philologists often distinguish between at least three kinds of representation. The phonemic representation of a word, contained between slashes, represents the phonemes that the word comprises, for example /kæt/. The phonetic representation of a word, contained between square brackets, represents the way it is pronounced, for example [kʰæt]. The latter is especially useful when orthography is not a reliable guide to pronunciation, as is usually the case in English. Both of these types of representation use the International Phonetic Alphabet. The graphemic representation of a word, contained between angle brackets, represents the way it is written, for example ⟨cat⟩. Sanskritists, however, rarely distinguish between these three kinds of representation, because Sanskrit is already written in a fashion that closely approximates its pronunciation. The choice, rather, is between representing Sanskrit in an Indian script, such as Devanagari, or *transliterating* it into Roman letters.

§1.2. Features

Features are what distinguish phonemes from each other. Linguists in ancient India discussed a number of distinctive features, and the phoneme inventory of Sanskrit is typically organized in terms of distinctive features (see alphabetical order and the *Śivasūtras* below). These include:

Sonority: the degree of openness of the stream of air exhaled through the lungs. Linguists recognize a hierarchy of sonority from highest (completely open) to lowest (completely closed), which groups the speech-sounds of any language into the following categories, which also represent distinctive **manners of articulation**:

- **vowels** (स्वराः) (air flows out continuously, and the sound is made by the shape of

the tongue in the mouth);

- **approximants** (अन्तःस्थाः) (air flows out continuously, but the tongue nearly comes into contact with part of the mouth);
- **nasals** (air flows out continuously through the nose, the oral cavity being blocked by the tongue or lips);
- **fricatives** (ऋष्माणः) (air flows out through a small aperture formed by the tongue within the mouth); and
- **stops** (स्पर्शाः) (the tongue or lips completely blocks the flow of air).

Length: the relative duration with which a phoneme is pronounced. A phoneme is either **short** (ह्रस्वः) or **long** (दीर्घः). In Sanskrit this distinction applies, for most purposes, only to vowels.

Voicing (घोषः): If the vocal cords vibrate when the phoneme is pronounced, it is **voiced** (घोषवान्); otherwise it is **unvoiced** (अघोषः). All vowels are voiced. Voicing is thus contrastive only for consonants.

Aspiration (प्राणः): This feature is only present in consonants. If a burst of air is released at the same time that the consonant is pronounced, then it is **aspirated** (महाप्राणः); otherwise it is **unaspirated** (अल्पप्राणः).

Place of articulation (स्थानम्): The place in the vocal apparatus where the phoneme is pronounced. Ancient Indian linguists recognized the following places:

- **velum** (कण्ठः): the back of the throat, near the soft palate.
- **palate** (तालु): the hard palate, at the top of the mouth.
- **alveolar ridge** (मूर्धा): where the roots of the front teeth begin to descend from the hard palate (in fact this is slightly behind the alveolar ridge).

- **teeth** (दन्ताः): behind the top front teeth.

- **lips** (ओष्ठौ): the lips.

Pitch (स्वरः): whether the phoneme is pronounced with a certain pitch. This only applies to vowels. Generally the options are high pitch (उदात्तः) and non-high pitch (अनुदात्तः); see the discussion of accent below. In this textbook, a high pitch will generally be marked with an acute accent, but only in the transliterated version of the text.

§2. Vowels

Sanskrit has the following vowel sounds (note that the English equivalents are only loose approximations: please listen to examples of these sounds and try to reproduce them yourself):

Letter	IPA	English
अ	[ɐ]	but
आ	[a:]	mom
इ	[i]	beat
ई	[i:]	bean
उ	[u]	boot
ऊ	[u:]	boon
ऋ	[ɹ]	teacher (American); see below
ॠ	[ɹ:]	—
ऌ	[l]	little
ॡ	[l:]	—
ए	[e:]	may
ऐ	[aɪ]	eye
ओ	[o:]	go
औ	[aʊ]	vowel

NOTE: The sound ऋ/ॠ is pronounced in different ways in different regions. In Central, North, and East India (Rajasthan, Punjab, Haryana, Madhya Pradesh, and points east), it is generally pronounced as [ri], while in West and South India (Gujarat, Maharashtra, Telangana, Andhra Pradesh, and points south) it is pronounced as [ru]. English speakers do not generally think of *r* as a vowel, but try extending the final syllable of the word *teacher* (in the General American pronunciation). In the ancient phonetics literature, the vowel is described as a combination of the neutral vowel [ə] and the consonant [r], followed again by the neutral vowel [ə] in quick succession. You should model your pronunciation of this vowel on that of a good Sanskrit speaker.

NOTE: The sound ऌ/ॡ is very marginal in Sanskrit, effectively occurring in only one verbal root (√क्वृ “be fitting”). The same group of speakers who pronounce ऋ as [ri] generally pronounce ऌ as [lri] (yes, it is difficult), and the same group of speakers who pronounce ऋ as [ru] generally pronounce ऌ as [lru].

§2.1. Vowel gradation

There are many contexts in which vowels alternate with each other. Consider the following three words:

- विश- “settlement”
- वेश- “settler”
- वैश्य- “settler”

These words are related in meaning, and also in formation. We can arrange them in the following way, considering the vowels as “gradations” of each other:

word	gradation
विश-	“zero grade”
वेश-	गुणः, “full grade”
वैश्य-	वृद्धिः, “lengthened grade”

The terms “zero grade,” “full grade,” and “lengthened grade” were invented by scholars of Indo-European to capture the alternation between various forms of the “same” vowel. We will return to these terms later on.

Indian grammarians used the terms गुणः for “full grade” and वृद्धिः for “lengthened grade.” They did not have a term for the first in the series, “zero grade,” because they considered it the simple form from which the other two were derived. In terms of their segmental makeup, the गुणः vowel is identical to the simple vowel, but with a short अ preceding it. Similarly the वृद्धिः vowel is identical to the simple vowel, but with a long आ preceding it. Hence we arrive at the following series:

Simple vowel (zero grade)	गुणः (full grade)	वृद्धिः (lengthened grade)
अ	अ	आ
इ	[अ + इ] = ए	[आ + इ] = ऐ
ई	[अ + ई] = ए	[आ + ई] = ऐ
उ	[अ + उ] = ओ	[आ + उ] = औ
ऊ	[अ + ऊ] = ओ	[आ + ऊ] = औ
ऋ	[अ + ऋ] = अर्	[आ + ऋ] = आर्
ॠ	[अ + ॠ] = अर्	[आ + ॠ] = आर्
ऌ	[अ + ऌ] = अल्	[आ + ऌ] = आल्
ॡ	[अ + ॡ] = अल्	[आ + ॡ] = आल्

NOTE: Do not worry too much about the fact that the गुणः of the vowel अ is अ. This is an artefact of the way the vowel gradation system has been set up by the Indian grammarians. We will return to this topic from a historical perspective later on.

§2.2. Vowel length

Sanskrit vowels are either **long** (दीर्घः) or **short** (ह्रस्वः). Five vowels have both long and short variants:

Short (ह्रस्वः)	Long (दीर्घः)
अ	आ
इ	ई
उ	ऊ
ऋ	ॠ
ऌ	ॡ

Generally speaking, the long version is pronounced the same as the short version, except for twice as long. There is one important exception: अ is pronounced as more “closed” (संवृतः) than आ, hence it is pronounced as [ɐ], while its long version is pronounced as [aː].

The following vowels are long, and have no corresponding short vowels, because they are analyzable into two vowel segments, as noted above.

Vowel	Segments
ए	अ + इ/ई
ऐ	आ + इ/ई
ओ	अ + उ/ऊ
औ	आ + उ/ऊ

There is a third category of length, used only in very specific contexts. This is traditionally called **prolation** (ध्रुतिः), and the vowels are called **prolated** (ध्रुताः). They are simply “extra-long” vowels, and they are written with the numeral “3” after them: आ३, ई३, ऊ३, रू३, लृ३, ए३, ओ३, ऐ३, औ३.

§2.3. Vowel pitch

As noted above, vowels can either have a high pitch, a non-high pitch, or a falling pitch. See the section on accent below.

§3. Consonants

Consonants (व्यञ्जनानि) are those speech-sounds that cannot form a syllable on their own. They are phonetically distinguished by a relatively more restricted flow of air than the vowels. The consonants of Sanskrit are traditionally divided up based on their **manner of**

articulation, and within those broad categories, based on their **place** of articulation, and within those categories, based on other features, such as **voicing**, **aspiration**, and **nasality**.

§3.1. Occlusives (स्पर्शाः)

These sounds are so called for their **occlusive** manner of articulation, wherein the flow of air through the oral cavity is completely occluded. (For some of these consonants, called **stop**, no air at all escapes, whereas for others, called **nasals**, it escapes through the nasal cavity rather than through the oral cavity.) They are traditionally arranged in a grid:

place of articulation (स्थानम्) unspirated (अल्पप्राणः)	voiceless (अघोषः)		voiced (घोषवान्)	
	aspirated (महाप्राणः)	unspirated (अल्पप्राणः)	aspirated (महाप्राणः)	nasal (नासिक्यः)
velar (कण्ठ्यः)	क [k]	ख [k ^h]	ग [g]	घ [g ^h]
palatal (तालव्यः)	च [tʃ]	छ [tʃ ^h]	ज [dʒ]	झ [dʒ ^h]
retroflex (मूर्धन्यः)	ट [ʈ]	ठ [ʈ ^h]	ड [ɖ]	ढ [ɖ ^h]
dental (दन्त्यः)	त [t]	थ [t ^h]	द [d]	ध [d ^h]
labial (ओष्ठ्यः)	प [p]	फ [p ^h]	ब [b]	भ [b ^h]

Sanskrit thus has five series of occlusives, depending on whether their primary organ is the velum, the palate, the alveolar ridge, the teeth, or the lips. Each series is called a **वर्गः**, and they are named in Sanskrit for the first sound in each series, hence **कवर्गः**, **चवर्गः**, **टवर्गः**, **तवर्गः**, and **पवर्गः**, or alternatively for their place of articulation, hence **कण्ठ्यवर्गः**, **तालव्यवर्गः**, **मूर्धन्यवर्गः**, **दन्त्यवर्गः**, and **ओष्ठ्यवर्गः** respectively.

NOTE: The technical term that Pāṇini uses for these series in his *Aṣṭādhyāyī* is the first consonant of each series followed by the vowel *u*, hence **कु**, **चु**, etc.

The first two sounds in each series are voiceless (अघोषः) and the last three are voiced (घोषवन्तः). Voicing is distinctive in English, too, so this distinction should be easy to grasp.

The first and third in each series are unaspirated (अल्पप्राणौ), and the second and fourth in each series are aspirated (महाप्राणौ). Aspiration is not distinctive in English, so if you don't speak a language with distinctive aspiration, you will have to practice these sounds. English speakers will have a tendency to overdo the aspiration in sounds like ख and घ, but that is preferable to losing the distinction of aspiration altogether.

NOTE: Aspiration is not phonemically distinctive in English, but it is an important coarticulatory process. Most speakers aspirate voiceless stops at the beginning of a word. You can test this by saying the word “cat” [kʰæt] while holding the palm of your hand, or an index card, up to your mouth. You should feel a puff of air. You probably will not feel the same puff of air if you pronounce a word beginning with a voiceless stop, like “get,” or a sibilant, like “skate.” You can, however, consciously avoid aspirating initial voiceless stops like the one in “cat,” so that it is pronounced as [kæt]. Hence the first sound in each series, the voiceless unaspirated stop, takes some training for English speakers to pronounce: Sanskrit ख has slightly more aspiration than English /k/ when the latter comes at the beginning of a word (and is pronounced [kʰ]), and Sanskrit क has slightly less. [This advice does not hold for retroflex sounds, because the *ɻ* in words like “stop,” with an initial *s*, is dentalized.]

NOTE: You will sometimes read that the sound थ (for example) is pronounced as in English “hot-house,” but this advice is misleading, because I, and many other English speakers, very often don't release the final stop consonant of a syllable, and hence my pronunciation of this phrase does not contain the sound [tʰ].

NOTE: Voiced stops are never aspirated in English, so the fourth member of each series will require practice to recognize and produce. These sounds are sometimes said to have “breathy voice.”

The **velar** (कण्ठ्याः) occlusives are similar to corresponding sounds in English:

- क skate
- ख kate, with slightly more aspiration
- ग gate

- घ [no English equivalent]
- ङ **sing**

The **palatal** (तालव्याः) occlusives are similar to the English palatal affricates:

- च **cheap**
- छ [the same, but with more aspiration]
- ज **jeep**
- झ [no English equivalent]
- ञ **canyon** (cf. Spanish *ñ*)

The occlusives called मूर्धन्याः in Sanskrit are called **retroflex** in English, which refers to the “curling backward” of the tongue right behind the alveolar ridge. (This place of contact, slightly behind the alveolar ridge, is called मूर्धा in Sanskrit, which has led to the English calque “cerebrals” for मूर्धन्याः in older scholarship.) English does not distinguish between dental and retroflex consonants, and most English speakers pronounce the sounds *t*, *d* and *n* somewhere in between a retroflex and dental articulation. As a result, the English sounds *t* and *d* are generally borrowed into Indian languages as retroflex sounds (e.g., डाक्टर for *doctor*). Retroflexion does, however, occur in English as a coarticulatory process: the sounds *t*, *d*, and *n* are more retroflexed when they are preceded by the consonant *r*, in those varieties of English (like General American) that pronounce this syllable-final *r*.

- ढ **hurt**
- ढ [the same, but with more aspiration]
- ण **yard**
- ढ [no English equivalent]
- ण **varnish**

The **dental** (दन्त्याः) occlusives, as just noted, do not contrast with retroflex occlusives in English, and most English speakers will pronounce *t*, *d* and *n* somewhere between a retroflex and dental articulation. If you grew up in New York City, however, there is a good chance that you dentalize these sounds. For the English equivalents here, just imagine Christopher Walken saying them:

- त् stop
- थ top [with slightly more aspiration]
- द् dog
- ध [no English equivalent]
- न् nine

The **labial** (ओष्ठाः) occlusives are basically the same as those in English:

- प spit
- फ pit [with slightly more aspiration]
- ब bit
- भ [no English equivalent]
- म mine

§3.2. Approximants (अन्तःस्थाः)

The Sanskrit word for these sounds means “in-between,” because their sonority is midway between that of vowels and occlusives. They are essentially the consonantal versions of the vowel sounds इ, ऋ, वृ and ए, with which they alternative:

Approximant	Pronunciation	Corresponding vowel
य	[j] as in yet	इ/ई
र	[ɻ] as in red	ऋ/ॠ
ल	[l] as in let	ऌ/ॡ
व	[v] as in vote	उ/ऊ

The place of articulation of these sounds is as follows: य, palatal (तालव्यः); र, retroflex (मूर्धन्यः); ल, dental (दन्त्यः); व, labial (ओष्ठ्यः).

The sound र is somewhere between the English *r*, i.e., an alveolar or retroflex approximant, [ɻ], and the Spanish or Italian trilled *r*, i.e., [r]. Some degree of friction or trill is implied by the common Sanskrit name for this sound (रेफः “tearing sound”), although the phonetics literature warns against excessive trilling. It is not a uvular trill (as in French, German, Hebrew, etc.), or a tap (as in Spanish *pero*). Since the pronunciation of *r* varies widely in English (and since *r* has complex coarticulatory effects on neighboring vowel sounds in English) you should take care to pronounce Sanskrit र properly in all positions.

Note that the sound व is somewhere in between the English sounds *w* and *v*, which are, respectively, a labiovelar approximant and a labiodental fricative. In fact most English speakers pronounce it as *v* when it appears on its own (as in वातः “wind”) and *w* when it appears after another consonant (as in अश्वः “horse”). You are safe pronouncing it as a less strongly articulated *v* (i.e., hold your mouth in the position of *v*, but pronounce it as an approximant rather than a fricative, i.e., without buzzing between the teeth and the lips).

§3.3. Fricatives (ऊष्माणः)

Fricatives are sounds where air is passed through a relatively narrow passage in the articulatory organs, resulting in a turbulent airflow, which is probably the meaning of the

Sanskrit term ऊष्माणः (literally “heat”). In principle, Sanskrit has the following fricative sounds:

Place of articulation (स्थानम्)	Sound	Pronunciation
Velum (कण्ठः)	x	[x]
Palate (तालु)	श्	[ʃ] as in ship
Alveolar ridge (मूर्ध)	ष	[ʂ]
Teeth (दन्ताः)	स	[s] as in sip
Lips (ओष्ठौ)	f	[f]

You will notice, however, that some of the sounds — represented as x and f are represented in gray. That is because they are not phonemes of the Sanskrit language, because they do not form minimal pairs with other speech-sounds. Rather, they are variants of the sound स in certain phonological contexts, just like the विसर्गः introduced below, where you will find further discussion of these sounds.

The three sibilants contrast with each other. While English also distinguishes s [s] from $ʃ$ [ʃ], it does not distinguish a retroflex sibilant, [ʂ]. The same is true of most modern Indian languages. Hence many speakers pronounce श् and ष in very similar ways. However, the latter is retroflex, and the distinction can be heard if sufficient attention is paid to it.

Sanskrit also has one **pseudo-fricative** sound, namely ह्. This sound is very similar to the English h (e.g. **hat**), but with one major difference: it is *voiced* rather than *voiceless* (hence pronounced as [ɦ] rather than [h]). The closest way to approximate this sound, if you don't have it in your language, is to learn how to pronounce the voiced aspirated (घ, ध, etc.), and simply leave out the part where the flow of air is occluded in the oral cavity.

§3.4. Dependent sounds (अयोगवाहः)

The final class of speech-sounds are “dependent” sounds, or अयोगवाहः in ancient phonetics literature (the literal meaning of the word, “non-juncture-bearing,” has been interpreted in different ways). They are “dependent” because they never constitute a syllable — and hence, in the syllabic scripts in which Sanskrit was written, a letter — on their own. Rather, they always occur at the end a syllable, and specifically, after the vowel that constitutes the nucleus of a syllable (see syllables below). There are two main types of dependent sounds: the विसर्गः and the अनुस्वारः. Unlike most of the other consonants, they do not have place of articulation features of their own (there is a tendency cross-linguistically to eliminate place of articulation contrasts at the end of a syllable).

NOTE: Because the signs for these sounds are considered diacritical marks that cannot be written independently in the Unicode representation of Indic scripts, I will use the simple vowel sign अ to “host” them here.

The विसर्गः (“letting loose,” also विसर्जनीयः) is written as अः. It is a voiceless fricative without a specified place of articulation. It is an allophone, or positional variant, of the sounds स and र. It is pronounced as a slight puff of air, like the English *h* [h], although the latter never occurs at the end of a syllable, whereas विसर्गः always occurs in that position. It generally takes English speakers some practice to master this sound, although many simply pronounce it as *h* with a short echo of the preceding vowel (e.g., रामः as [raː.mə.hə]).

The विसर्गः has two close relatives, which are very rarely written in printed Sanskrit books, but which used to be relatively common in Sanskrit inscriptions. They are the sounds called उपध्मानीयः and जिह्वामूलीयः (meaning “puff of air” and “base of the tongue” respectively). The उपध्मानीयः was the allophone of विसर्गः before voiceless labial stops (i.e., before प and फ), and it was pronounced as [ɸ], i.e., a voiceless labial fricative. The जिह्वामूलीयः was the allophone of विसर्गः before voiceless velar stops (i.e., before क and ख), and it was pronounced as [x], i.e., a voiceless velar fricative. These pronunciations of the विसर्गः are still in common

use among Sanskrit speakers, especially in South India, although specific letters for the उपध्मानीयः and जिह्मामूलीयः are no longer commonly used.

The अनुस्वारः (“after-sound”) is written as अं. It represents a nasal phoneme without a specified place of articulation. While its original position is before fricatives (श्च, ष, स, and ह), it came to be used before approximants as well (य, र, ल, व), and it has gained ground as a way of writing (and perhaps of pronouncing) a nasal consonant before any occlusive. Hence अनुस्वारः is pronounced in two distinct ways:

- as a nasalization of the preceding vowel (which also makes the vowel **long**), when it comes before fricatives and approximants (e.g., संस्कृतम् [s̃ṣ̃:kṛ̃t̃m]);
- as the nasal corresponding the the place of articulation of a following occlusive (e.g., संकटम् [s̃ɳk̃ɳt̃m]).

§4. Phonemes

The phonemes of Sanskrit are therefore usually arranged as follows:

	samānāḥ	sandhyakṣarāṇi
br̥asāḥ	a i u ṛ ḷ	
dirghāḥ	ā ī ū ṝ	ē ō ai au

	sparśāḥ					antaḥsthāḥ	ūṣmānaḥ
aghōṣāḥ	ghōṣavantaḥ						
kaṅṭhyāḥ	k	kh	g	gh	ṅ		h
vāṅṭhyāḥ	c	ch	j	jh	ñ	y	ś
mūrdhanyāḥ	ṭ	ṭh	ḍ	ḍh	ṇ	r	ṣ
dantyāḥ	t	th	d	dh	n	l	s
ōṣṭhyāḥ	p	ph	b	bh	m	v	

NOTE: Among the nasals, only *n* and *m* are “true” phonemes, in the sense that they contrast with each other in every position in which they occur. The sounds *ṅ* and *ñ* only occur at the end of a syllable, where they are positional variants for either *n* or *m*. The sound *ṇ* is also generally a variant of *n*, although due to longer-range phonological processes, but it occurs in many words without any phonological conditioning, and therefore has more of a claim to being a phoneme than either *ṅ* or *ñ*.

§4.1. The *Śivasūtras*

The traditional list of Sanskrit phonemes is presented in the *Śivasūtras*, a short text which accompanies Pāṇini’s grammar. (A recording is available [here](#).)

- a i u ṅ
- ṛ ḷ K
- ē ō Ṇ
- ai au C
- ha ya va ra Ṭ
- la ṅ
- ṅa ma ṅa ṇa na M
- jha bha ṅ

- gha ḍha dha Ṣ
- ja ba ga ḍa da Ś
- kha pha cha ṭha tha ca ṭa ta V
- ka pa Y
- śa ṣa sa R
- ha L

In this list, the letters on the left represent distinct phonemes. (The vowel *a* has been added to each of the consonant phonemes to facilitate pronunciation.) The final letter of each line, by contrast, does not represent a phoneme, but an “index” letter (अनुबन्धः) that is used to form abbreviations (प्रत्याहारः). Abbreviations are formed with one letter and one “index” letter, and represent all of the letters in between. Pāṇini uses this system to refer to different classes of phonemes:

- अच् vowels;
- हल् consonants;
- यप् semivowels;
- अङ् nasals;
- शल् sibilants;
- जय् stops.

Pāṇini also uses a different type of abbreviation for letters belonging to the same place of articulation or “class” (वर्गः). Hence क् refers to velar consonants, च् refers to palatal consonants, ट् refers to retroflex consonants, and so on.

§5. Syllables (अक्षरम्)

A **syllable** (अक्षरम्) is a unit of speech that contains the following elements:

1. an optional **onset**, which consists of one or more consonants;
2. an obligatory **rime**, which consists of:
 - an obligatory **nucleus**, which consists of a vowel; and
 - an optional **coda**, which consists of one or more consonants.

A syllable therefore has the pattern C^*VC^* (where C means “consonant,” V means “vowel,” and * means “zero or more”). A syllable can be thought of as a vowel and the consonants that are “attracted” to it. A word will always have as many syllables as it has vowels. To parse a word, or a larger phrase, into syllables, one must decide whether a given consonant goes with the preceding vowel (as a coda) or with the following vowel (as an onset); the general principle is to associate a consonant with the vowel that immediately follows it, if possible, and otherwise to associate it with the vowel that precedes it.

NOTE: The parsing of speech-sounds into syllables is actually a function of their sonority, and hence the nucleus of a syllable represents a local “sonority peak” relative to the onset and coda. Generally, then, consonants closer to the nucleus will have a higher sonority than more marginal consonants. This accounts for the fact that *pra* is a well-formed syllable, whereas **rpa* is not: semivowels like *r* are more sonorous than stops like *p*.

§5.1. Weight

Sanskrit distinguishes syllables according to their **weight**.

A **light** (लघु) syllable contains a short vowel (*a*, *i*, *u*, *r̥*, or *ḷ*) that is not followed by any consonants. In metrical notation, a light syllable is represented by the symbol \sim (breve) in transliteration and ऌ (ऋजुः) in Indian scripts.

All other syllables are **heavy** (गुरु-उ), i.e., those that contain a long vowel (\bar{a} , \bar{i} , \bar{u} , \bar{r} , \bar{e} , \bar{o} , ai , or au), as well as those that contain a short vowel followed by one or more consonants. In metrical notation, a heavy syllable is represented by the symbol $\bar{\quad}$ (longum) in transliteration and ष (वक्रः) in Indian scripts.

Onset consonants do not count towards the weight of a syllable. Light syllables are said to contain one mora (मात्रा), and heavy syllables are said to contain two. Thus the weight of a syllable is a function of both the length of its vowel and the number of coda consonants it has.

§6. Words (पदानि)

The *word* (पदम्) can be considered from the perspective of syntax, morphology, and phonology.

In **syntactic** terms, a word is a form that enters into a specified relationship with other forms. In traditional grammar, one often speaks about a verbal form (क्रियापदम्) and the forms expressing the participants in the verbal action (कारकपदानि); alternatively, one speaks about a head (प्रधानम्) and its dependents (उपसर्जनानि).

In the **morphological** terms that are favored by Pāṇini, a word is that which has a nominal or verbal ending (*Aṣṭādhyāyī* 1.4.14 सुसिद्धन्तं पदम्). This understanding reflects the division of Sanskrit words in general into a base (प्रकृतिः) and a suffix (प्रत्ययः). Sanskrit, being a heavily inflectional language, makes use of many suffixes in order to convey information about a word, including (for a nominal form) its gender, number, and case, and (for a verbal form) its person, number, mood, tense, and “voice” (*parasmaipadām* or *ātmanēpadām*). The base to which the suffixes are added is generally called a “stem” (अङ्गम्), and in the case of nominal forms, the most basic form of the stem is called a nominal base or प्रातिपदिकम्, while in the case of verbal forms, the most basic form of the stem is a verbal root or धातुः.

Phonologically, a word is a unit that meets two requirements: one of *length*—it is at least as long as the “minimal phonological word”—and one of *prominence*—it contains no more than one accented syllable. Together, these requirements distinguish between full-fledged words, on the one hand, and forms that do not count as phonological words on their own, on the other. Closely related to the phenomenon of accentual prominence is the phenomenon of vowel gradation; both are discussed below.

§6.1. Accent (स्वरः)

One and only one syllable of a Sanskrit word can have an accent. The accent is called उदात्तः or “elevated” Sanskrit, which refers to the syllable’s greater prominence relative to the other syllables in the word. This syllable will generally be written in this textbook with an acute accent in transliteration. (For technical reasons they will not be displayed in *Dēvanāgarī*.) The unaccented syllables are called अउदात्तः “unelevated.” They will not be marked in this textbook. The accented is realized differently in different traditions of recitation. In the tradition of the *R̥gvēda*, there is a slight drop in pitch just before the *udāttah*, and a sharp rise and fall immediately after the *udāttah*. Outside of Vedic recitation, however, the accents are almost never pronounced. The accents are, moreover, only written in manuscripts of Vedic texts, and the way in which they are written in these manuscripts differs according to the recitation tradition.

Sanskrit’s accent is morphological, in the sense that the individual morphemes that constitute a word are either accented or unaccented, and the word-level accent is generally a function of these morpheme-level accent. Thus Pāṇini encodes into the *anubandhas* or “diacritics” of each affix he teaches information about the accentual properties of that affix, and specifically, whether the affix is accented and thus “erases” the accent of the stem, or whether it is unaccented and thus “preserves” the accent of the stem. The following are examples of accented and unaccented affixes in the verbal system (note that verbs are generally unaccented: these remarks apply to accented verbs, which occur in subordinate

clauses):

- $\sqrt{kr} + u + tiP$ (third person singular *parasmaipadám*) → *karóti* “he does”
the suffix is unaccented, as indicated by the *anubandha* P, and hence the accent appears on the verbal stem, and specifically on the *vikaraṇa* *u*, which takes the full-grade or *guṇa* form.
- $\sqrt{kr} + u + mas$ (first person plural *parasmaipadám*) → *kurmáḥ* “we do”
the suffix is accented, and hence no accent appears on the verbal stem, which additionally appears in the short form *kur-*.

Another piece of evidence for the morphological nature of the Sanskrit accent is that its appearance, or lack thereof, is conditioned by morphological and syntactic categories. Finite verbs outside of subordinate clauses are unaccented in Sanskrit, which is to say that the “underlying” accent of a finite verb is suppressed, and only surfaces when the verb stands in a subordinate clause.

- *ágnē yám yajñám adbhvarám viśvátah paribhúr ási sá id dēvēṣu gacchati .*
“Agni, the worship and sacrifice that you surround on all sides goes to the gods”
(*R̥gvedā* 1.1.4)
ási is accented because it is in a subordinate clause, but *gacchati* is not.

Most students ignore the accent in Sanskrit. You are free to do so, although if you are interested in Vedic Sanskrit, you would do well to learn the accents along with the words.

Conventionally Sanskrit is now spoken with a stress-based accent, almost the same as Latin stress. The stressed syllable is:

- the *penultimate* (second from last), if it is *heavy*; or
- the *antepenultimate* (third from last), if the penultimate is *light*.

(See weight above.) Hence *rā-mā-ya-ṇam*, *ma-hā-bhā-ra-taḥ*, but *ku-mā-raḥ* and *a-nu-ṣak-taḥ*.

§6.2. Vowel gradation

This term refers to the phenomenon in Sanskrit wherein related forms of a word will show different forms of the “same” vowel sound. Vowel gradation, or *ablaut*, is important to the distinctions of nominal and verbal morphology, as well as the process of nominal derivation. Sanskrit grammar thus includes several processes of moving “backwards” and “forwards” along a continuum of vowel gradation. The traditional categories of the “standard” type of vowel gradation in Sanskrit are as follows:

Basic vowel	<i>Guṇāḥ</i>	<i>Vṛddhiḥ</i>
<i>a</i>	<i>a</i>	<i>ā</i>
<i>i, ī</i>	<i>ē</i>	<i>ai</i>
<i>u, ū</i>	<i>ō</i>	<i>au</i>
<i>ṛ, ṝ</i>	<i>ar</i>	<i>ār</i>

In this system, the *guṇāḥ* version of the vowel is the basic vowel prefixed with a short *a*, and the *vṛddhiḥ* version of the vowel is the basic vowel prefixed with a long *ā*. (The *guṇa* vowel *a* constitutes an exception to this pattern, since normally *a* followed by *a* would result in *ā*, but as we will see, the generalization that *guṇa* is meant to capture is the addition of the vowel *a* to a form *that does not already have this vowel*.)

This set of distinctions more or less maps onto the way that vowel gradation worked in Indo-European, where the vowel **e* (which generally corresponds with Sanskrit *a*) would either appear in a syllable, or not, based on morphological alternations that can ultimately be traced to accentual features (since the presence of the vowel **e* generally corresponds

with an accented syllable). The tripartite system can thus be described in terms of an “ablauting” vowel which appears in three graded forms: \emptyset (zero grade), $*e$ (full grade), $*\bar{e}$ (lengthened grade). In the following table, the reconstructed Indo-European forms are marked with an asterisk, and the Sanskrit forms follow them on the right-hand side. (Note that \emptyset refers to *zero* or *nothing*.)

Zero grade		Full grade		Lengthened grade	
PIE	Sanskrit	PIE	Sanskrit	PIE	Sanskrit
$*\emptyset$	\emptyset	$*e\emptyset$	a	$*\bar{e}\emptyset$	\bar{a}
$*\emptyset i$	i	$*ei$	\bar{e}	$*\bar{e}i$	ai
$*\emptyset u$	u	$*eu$	\bar{o}	$*\bar{e}u$	au
$*\emptyset r$	r	$*er$	ar	$*\bar{e}r$	$\bar{a}r$

Here are a few examples of the standard series of vowel gradation:

- इमः “we go” :: एति “he goes”
Contrast zero-grade i and full-grade \bar{e} of the root syllable, both from $\sqrt{\text{इ}}$.
- जिनः “victorious” :: जेमन् “victorious” (also a proper name) :: जैत्रः “victorious”
Contrast zero-grade ji , full-grade $j\bar{e}$, and lengthened-grade jai , all from the root $\sqrt{\text{जि}}$.
- हुतिः “offering” :: जुहोति “he offers”
Contrast zero-grade hu and full-grade $h\bar{o}$ of the root syllable, both from $\sqrt{\text{हु}}$.
- क्षुब्धम् “shaken” :: क्षोभते “he shakes”
Contrast zero-grade $kṣubh$ and full-grade $kṣ\bar{o}bh$ of the root syllable, both from $\sqrt{\text{क्षु}}$.
- ऋक् “a verse of worship” :: अर्चनम् “the act of worship”
Contrast zero-grade rc and full-grade ar of the root syllable, both from $\sqrt{\text{ऋ}}$.

Note that the vowels of “superheavy” roots, that is, roots ending either in a long vowel and a consonant, or any vowel followed by two consonants, are generally **not** subject to *gunāḥ*. Thus the vowel in the roots √जीव् “live,” √निन्द् “blame,” and √चिन्त् “think” is not strengthened to *gunāḥ*.

§6.3. Vowel gradation with nasals

A historical perspective also allows us to include several additional cases of vowel gradation under the same system, beginning with nasals, which Indian grammarians did not consider to have *gunāḥ* and *vṛddhiḥ* forms:

Zero grade		Full grade		Lengthened grade	
PIE	Sanskrit	PIE	Sanskrit	PIE	Sanskrit
* \emptyset_n	<i>a</i>	* <i>en</i>	<i>an</i>	* <i>ēn</i>	<i>ān</i>
* \emptyset_m	<i>a</i>	* <i>em</i>	<i>am</i>	* <i>ēm</i>	<i>ām</i>

A few examples:

- मतम् “thought” :: मनः “mind”

Contrast zero-grade *ma* and full-grade *man*, both from the root √मन्.

- गतम् “gone” :: गमनम् “going”

contrast zero-grade *ga* and full-grade *gam*, both from the root √गम्.

§6.4. Vowel gradation with laryngeals

Sanskrit presents an abnormal kind of vowel gradation in which the forms where we would expect a “basic” or “zero-grade” vowel have *i* or *ī*, and the forms where we expect a “full-grade” vowel generally have the long vowel *ā*. From a historical perspective, however,

this is precisely the same kind of vowel gradation that we have encountered already. The difference is simply that the “basic” vowel of these forms in the zero grade was not a semivowel or a nasal, but a laryngeal, a sound which has disappeared as such in all of the daughter languages of Indo-European except Hittite. A laryngeal usually became *i* or *ī* in Sanskrit when it appeared between consonants, and it usually lengthened a preceding vowel.

Zero grade		Full grade		Lengthened grade	
PIE	Sanskrit	PIE	Sanskrit	PIE	Sanskrit
* \emptyset H	<i>i</i> or <i>ī</i>	* <i>e</i> H	<i>ā</i>	* <i>e</i> H	<i>ā</i>

Here are a few examples:

- गी-तम् “sung” :: गा-यति “sings”
Contrast the root syllables *gī* and *gā*.
- हि-तम् “placed” :: द-धा-ति “places”
Contrast the root syllables *hi*, from *dhi*, and *dhā*.
- ऋ-णी-ते “buys” [*ātmanēpadām*] :: ऋ-णा-ति “buys” [*parasmaipadām*]
contrast the syllables of the present-tense formant, or *vikaraṇaḥ*, *ṇī* and *nā*.

The traces left by laryngeal consonants account for a few more types of vowel gradation which otherwise appear to be irregular or exceptional. As noted above, the regular alternation between zero- and full-grade forms for roots with a nasal consonant (such as $\sqrt{\text{man}}$ “think”) involves the patterns *a* :: *am* and *a* :: *an*. When the root ended in a laryngeal consonant after the nasal, however, the alternation is as follows:

context PIE	Zero grade		Full grade		Lengthened grade	
	Sanskrit	PIE	Sanskrit	PIE	Sanskrit	
before consonants: * \emptyset n.H.	* \emptyset m.H.	$\bar{a}m$.	*em.H.	a.mi	* $\bar{e}m$.H.	$\bar{a}.mi$
	\bar{a} .	*en.H.	a.ni	* $\bar{e}n$.H.	$\bar{a}.ni$	
before vowels: * \emptyset n.H	* \emptyset m.H	a.m	*em.H	a.m	* $\bar{e}m$.H	$\bar{a}.m$
	a.n	*en.H	a.n	* $\bar{e}n$.H	$\bar{a}.n$	

(The period here indicates the boundary between syllables.)

The reason for this pattern is the sound change according to which a syllabic nasal, like * \bar{m} or * \bar{n} , when followed by a laryngeal *in the same syllable*, became lengthened to * \bar{m} or * \bar{n} . (Syllable boundaries are marked in the above table by a period, where they are relevant.) This is a special case of the general rule according to which vowels followed by a laryngeal in the same syllable are lengthened. The long syllabic nasals * \bar{m} and * \bar{n} then became $\bar{a}m$ and $\bar{a}n$ in Sanskrit. Hence we have examples like the following alternations:

- कान्तम् “bestriden” :: क्रमः “stride”

Contrast the root syllables $kr\bar{a}m-$ and $kram-$, in the zero and full grade, respectively.

- शान्तिः “tranquility” :: शमनम् “tranquilizing”

Contrast the root syllables $s\bar{a}m-$ and $sam-$, in the zero and full grade.

- कान्तः “beloved” :: कम्पिष्यति “will desire”

Contrast the root syllables $k\bar{a}m-$ and $kam-$, in the zero and full grade.

- जातिः “birth” :: जनितृ- “begetter”

Contrast the root syllables $j\bar{a}-$ and jan , in the zero and full grade.

NOTE: The root \sqrt{jan} derives from Indo-European * $\acute{g}enb_1$: compare Greek $\gamma\acute{\gamma}νομαι$ and Latin $gign\bar{o}$. Hence the formation $j\bar{a}tiḥ$ is parallel to that of $\gamma\acute{\epsilon}νεος$, and $janitṛ-$ is parallel to that of $genitor$.

§6.5. संप्रसारणम्

So far we have considered cases in which we “augment” a sound by prefixing a vowel segment a or \bar{a} before it. But there are cases where the ablauting vowel segment ($*e$ in Indo-European, and a in Sanskrit) *follows* rather than *precedes* the other sound. In these cases, the Indian grammarians generally teach the full grade form, rather than the zero grade form, as the citation form. Thus they teach the root \sqrt{vac} “speak” in this form, which historically corresponds to a full-grade form $*wek\bar{a}$ -. The corresponding zero-grade form would be uc - ($*uk\bar{a}$ -). Indian grammarians have called this kind of variation संप्रसारणम् or “extension,” namely, the extension of a semivowel such as y , r , or v into the corresponding vowel i , \ddot{r} , or u , with a corresponding loss of the full-grade vowel a . The following gradational patterns hold for roots of certain phonological shapes:

Zero grade (<i>Samprasāraṇam</i>)	Full grade	Lengthened grade
$\emptyset + i = i$	$i + a = ya$	$i + \bar{a} = y\bar{a}$
$\emptyset + u = u$	$u + a = va$	$u + \bar{a} = v\bar{a}$
$\emptyset + \ddot{r} = \ddot{r}$	$\ddot{r} + a = ar$	$\ddot{r} + \bar{a} = \bar{a}r$

Here are some examples:

- इष्टम् “offered” :: यजते “he sacrifices”
- उक्तम् “spoken” :: वक्ति “he speaks”
- पृष्टम् “asked” :: पप्रच्छ “he asked”

§6.6. *N-vṛddhiḥ*

It is important to mention one more type of vowel gradation here, which I will call *N-vṛddhi*, since it is triggered by suffixes that Pāṇini teaches with the marker (*anubandha*) \bar{N} . It has the following properties:

- If the root ends in a vowel, it takes the *vṛddhiḥ*;
 - *bhū + NiC* → *bhāvāya-*
 - *ji + ṢtraN* → *jaitrā-*
- If the root ends in a consonant:
 - it takes *vṛddhiḥ* if the vowel preceding that consonant is *a*;
 - *pac + NiC* → *pācāya-*
 - it takes *gunāḥ* otherwise;
 - *cur + NiC* → *cōrāya-*
 - if the final consonant is a nasal, then *gunāḥ* is prescribed for a series of roots that are taught with an acute accent in the *dhātupāṭhaḥ*, as well as $\sqrt{\text{वृ}}$ and $\sqrt{\text{जृ}}$, while *vṛddhiḥ* is prescribed for all other roots.
 - *gam + NiC* → *gamāya-*

This seemingly-arbitrary collection of rules reflects a historical development that is known as **Brugmann's Law**: between Indo-European and Indo-Iranian, the vowel **o* was lengthened to **ō* in an open syllable. This development thus has two conditioning factors, one morphological, and one phonological:

1. the vowel must be **o*, which in Indo-European occurred only in certain morphological contexts;
2. the vowel must be followed by *one and only one* consonant, for otherwise the syllable in which **o* occurs would be *closed*, and Brugmann's Law would be blocked.

The second condition is where the complications arise, for Indo-European had consonants that Sanskrit does not have, namely, the laryngeal consonants, which we can represent with **H*. Thus roots that seem to end in a single consonant in Sanskrit might have

ended in a double consonant in Indo-European, which explains why Pāṇini needs to make exceptions for certain roots, which historically ended in a laryngeal:

- $man + NiC \rightarrow m\bar{a}n\acute{a}ya-$ (theoretically from $*moneye-$)
 $\sqrt{मन्} \leftarrow *men$ did *not* end in a laryngeal.
- $\acute{s}am + N\check{v}uL \rightarrow \acute{s}amaka-$ (theoretically from $*komb_2eko-$)
- $\acute{s}am + NiC \rightarrow \acute{s}amaya-$ (theoretically from $*komb_2eye-$)
 Both are from $\sqrt{सम्} \leftarrow *kemb_2$.
- $jan + NiC \rightarrow janaya-$ (theoretically from $*\acute{g}onh_1aya-$)
 From $\sqrt{जन्} \leftarrow *\acute{g}enh_1$.

However, a few roots that did not historically end in laryngeals, like $\sqrt{गम्} \leftarrow *g\text{em}$, became analogically included in the set of roots that take $gun\acute{a}h$ rather than $v\acute{r}iddhih$ before the *Nit* suffixes.

§6.7. Independent words, enclitics, and proclitics

The minimal word in Sanskrit is a bimoraic trochee, that is, a sequence of two moras or *mātrās*, whether represented as two light syllable or a single heavy syllable. This “minimum weight” requirement is enforced in morphology, for instance, when an augment (आगमः) is added to a light stem in order to make it into a moraic trochee (examples include सु-त्, कृ-त्, etc.).

Sanskrit also has a number of **clitic** words. These are not fully-fledged phonological words, but attach onto one end of another word, which we can call their “host.” **Enclitics** follow their host, and **proclitics** precede their host. We can furthermore distinguish between “true clitics,” which are unaccented, and “quasi-clitics,” which have an accent but otherwise behave syntactically as clitics. The true enclitics of Sanskrit include the following:

- च (indecl.) “and”;
- वा (indecl.) “or”;
- इव (indecl.) “as”;
- हि (indecl.) “for”;
- उ (indecl.) [indicating an alternative];
- स्म (indecl.) [indicating past reference];
- the enclitic forms of the personal pronouns: मा, मे, त्वा, ते, नौ, वाम्, नः and वः;
- the forms of the pronominal stem एनः- एनम्, एनत्, एनेन, एनौ, एने, एनयोः, एनान्, एनानि, एनाम्, एनया, and एनाः.

In addition, the accented words which function syntactically as enclitics include:

- almost all of the other particles, including एव, अपि, खलु, and so on;

There are no “true proclitics” in Sanskrit, but the **negative particle** न, as well as all of the **preverbs** (उपसर्गः), precede their host and can be considered “quasi-proclitics.”

The **host** of a clitic is often but not necessarily the word with which it construes syntactically. For instance, in the following example, the word च “and” construes syntactically with the word it follows in each case:

- तथा स पूतश् च विभूषितश् च ।

“he was **both** purified **and** adorned by it”

(*Kumārasambhavaḥ* 1.28)

But when enclitics construe with the entire *phrase* or *sentence*, rather than just a single *word*, there is a strong tendency for them to appear **after the first phonological word in the sentence**. This is called **Wackernagel’s position**, after Jacob Wackernagel, who described the phenomenon at length. For example:

- मो षु नः सोम मृत्यवे परा दाः ।

“do not hand us over to death, O Sōma” (*R̥g̥v̥ēdah* 10.59.4a, from Lowe 2011)

§7. Phonotactics (सन्धिः)

Sanskrit, like almost every other language, has phonological rules that govern the way that sounds interact with other sounds in connected speech. The term for “connected speech” is संहिता, and the complex of phonological processes that pertain to the modification of sounds due to their contact with other sounds is called “connection” or “juncture” (सन्धिः).

Unlike most other languages, Sanskrit is typically written in such a way that these modifications are explicitly represented. We might say that Sanskrit is written *phonetically* rather than *phonemically*. If an underlying sound is reflected as a different surface sound in diverse phonological contexts, we write the surface sound.

§7.1. Internal and external *sandhi*

It is important to distinguish the constraints that apply to sounds in combination *within a single word*, and those that apply to sounds in combination *within an utterance as a whole*. The former is called **internal *sandhi*** and the latter is called **external *sandhi***. Internal *sandhi* thus refers primarily to the juncture of *morphemes* at the word level, while external *sandhi* refers to the juncture of *words* at the sentence level.

NOTE: There is some flexibility regarding what counts as “word” for the purposes of *sandhi*. Between a preverb (उपसर्गः) and a verbal form, generally the internal *sandhi* rules apply, although not consistently across the lexicon. Between two constituents of a nominal compound (समासः), the rules of external *sandhi* generally apply.

To large extent, internal and external *sandhi* overlap. There are, however, a number of conceptual and practical differences. (If you have a linguistics background, you will prob-

ably recognize in external *sandhi* the characteristics of *postlexical phonology*.)

1. **Category-sensitivity.** Internal *sandhi* is often sensitive to whether a sound belongs to a particular morphological category (e.g., whether it belongs to a verbal root, a stem-forming suffix, a derivational suffix, or an inflectional ending). By contrast, external *sandhi* applies irrespective of morphology.
2. **Structure-preservation.** Internal *sandhi* can only produce sounds that are already represented in the lexicon. By contrast, external *sandhi* can produce new sounds, for instance *visargāḥ*, which are not part of the lexical representation of any word.
3. **Exceptions.** Internal *sandhi* often has exceptions in its application, whereas external *sandhi* applies across-the-board.
4. **Scope.** Because phonological words form the input to external *sandhi*, and phonologica words can only end in a small set of permitted final sounds, there is a smaller range of combinations to which external *sandhi* can apply, relative to internal *sandhi*. For example, a *palatal, voiced, or aspirate* consonant will never stand in the left-hand context of an external *sandhi* process.
5. **Voice assimilation.** While the assimilation of voice features between adjacent *stops* is found in both internal and external *sandhi*, the voicing of voiceless sounds before *all voiced sounds* is a distinctive feature of external *sandhi*, as explained below.

§7.2. Word-final sounds

In Sanskrit, as in many other languages, there are **positional** restrictions on the occurrence of speech-sounds. In particular, not all sounds can occur at the **end** of a word. The sounds that can occur at the end of a word are called “permitted finals.”

NOTE: Similar positional restrictions are found in English, for instance: /ŋ/ can occur at the end of a word (e.g., “sing”) but not the beginning, and /h/ can occur at the beginning of a word (e.g., “hat”) but not the end.

NOTE: The sounds that can occur at the end of a phonological word are **almost** identical to the sounds that can occur at the end of an utterance (the so-called *pausa* form: see below). Nevertheless there is a conceptual and practical distinction. The conceptual distinction is that word-final sounds are constrained by word-level phonology, whereas utterance-final sounds are constrained by utterance-level (or postlexical) phonology. Essentially this means that the output of word-level phonology can serve as input to utterance-level phonology, and in particular, word-final sounds may be further modified based on the sounds that follow them within an utterance. This is the domain of external *sandhi*. The practical distinction is that the contrast between a final *s* and *r* is preserved at the word level, but not at the utterance level. Hence external *sandhi* is sensitive to whether a final *visargāḥ* represents an underlying *s* or *r*. By contrast, external *sandhi* does not care whether a final *ṭ* (for example) represents an underlying *j*, *ś*, *ṣ* or *h*.

The following constraints operate on speech-sounds at the end of a word:

- **No complex consonants.** A word may not end in more than one consonant. Any consonants that would have been added after the first final consonant are dropped. Thus the following combinations of stem and ending (W§150) result in the following forms:

- तुदन्त-स → तुदन् “striking”
- *údañc-s* → *údank-s* → उदङ् “upwards”
- *áčhānts-t* → अछान् “concealed”

NOTE: Very occasionally complex consonants involving -rC are retained: *úrj-s* → ऊर्क्, *ámārij-t* → अमारि.

- **No aspirate consonants.** Aspirate consonants, which are only marginally permitted in syllable-final position to begin with, are not allowed in word-final position. Thus:

- *virúdh* → वीरुत् f. “herb”
 - *anuṣṭúbh* → अनुष्टुप् f. “anuṣṭubh verse”
- **No palatal obstruents.** Palatal obstruents, including all palatal stops (*c*, *ch*, *j*, and *jb*) and the palatal sibilant (*ś*) may not occur at the end of a word. In many cases, they are replaced by a velar stop (*k*), but in some cases, they are replaced by a retroflex stop (*ṣ*). The different outcomes depend largely on whether the palatal represents an etymological velar or labiovelar stop that has been palatalized in Proto-Indo-Iranian (e.g., *-pac-* from **-kwekw-*, Latin *coquere*), in which case it reverts to a velar, or an etymological palatovelar (e.g. *-viś-* from **-weik-*), in which case it becomes a retroflex.
- *sráj* → सक् f. “garland” (१ एक०)
 - *viráj* → विराट् “ruler” (१ एक०)
 - *śvapac* → श्वपक् “dog-eater” (१ एक०)
- **No voiced obstruents.** The devoicing of word-final consonants is a relatively widespread phenomenon; it occurs, for example, in German. The sound *b* counts as a voiced obstruent for the purposes of this constraint: it becomes *k*, *t*, or *ṣ*, depending on its etymological source:
- *udbhíd-s* → उद्धित् f. “herb” (१ एक०)
 - *kāmadub-s* → काम-धुक् “wish-granting”
 - *praruh-s* → प्ररुट् “rising forth”
- **No *ś*.** Palatal *ś* is already disallowed by the above rule, but retroflex *ṣ* becomes the corresponding stop (*ṣ*).
- *prāvṣ-s* → प्रावृट् “monsoon”

The foregoing constraints mean that only **vowels**, **voiceless unaspirated stops**, **nasals**, and **semivowels** can appear at the end of a word. However:

- Of the **vowels**, \bar{r} , \bar{l} , and $\bar{ḷ}$ do not actually occur.
- Of the **nasals**, \bar{n} never occurs, and $\bar{ṇ}$ is rare.
- Of the **semivowels**, y and v cannot occur as word-final sounds, except as the final segment of the diphthongs \bar{e} , ai , \bar{o} , and au ; l occurs very rarely; and r appears as *visargáḥ* (but see below).

The inventory of **permitted finals** is therefore: m , n , t , k , p , $ṭ$, and \bar{n} , as well as all the vowels (a , \bar{a} , i , \bar{i} , u , \bar{u} , \bar{r} , \bar{e} , \bar{o} , ai , au). The sounds s and r are also permitted at the end of a word, but in *pausa* they are always represented by the *visargáḥ* ($\bar{ḥ}$). (See the above note for why it is necessary to represent these sounds differently at the word level.)

§7.3. Utterance-final sounds

Just as only certain sounds can appear at the end of a phonological word, so too only certain sounds can appear at the end of an **utterance**. The form that a word takes when it appears at the end of an utterance is called its *pausa* form (because it is followed by a pause in the utterance).

The only difference between the word-level and utterance-level constraints on final sounds is that the contrast between s and r is neutralized at the utterance level. Both of these sounds become *visargáḥ*:

- *púnar* → पुनः
- *máнас* → मनः

I often use the *pausa* form to represent the form of a word prior to the application of external *sandhi*, although strictly speaking the rule that converts final s and r to *visargáḥ*

is postlexical and thus a rule of external *sandhi*.

§7.4. External consonant *sandhiḥ*

To “external consonant *sandhiḥ*” belongs all of those phonotactic processes whereby the *final consonant* of a word is changed due to the character of the following sound. Most of these processes can thus be thought of as *regressive assimilation*, i.e., a process whereby a sound on the left edge of the juncture comes to take on some of the features of a sound on the right edge of the juncture.

Assimilation of place. The only instance of assimilation to *place of articulation* involves a set of sounds, called *coronals*, that comprise *palatal*, *retroflex*, and *dental* sounds. Dental sounds are typically assimilated to the place of articulation of a following coronal sound, whether it is palatal or retroflex. We will first discuss the dental stop *t*, and then the dental nasal *n*.

Assimilation of *t* to a following palatal:

- *tat ca* → *tac ca* “and that”
- *tat + chaviḥ* → *tacchaviḥ* “his beauty”
- *tat jāyatē* → *taj jāyatē* “that is born”
- *tat + jharaḥ* → *tajjharah* “its waterfall”

The case of the palatal sibilant *ś* is a little different, since the final coronal—usually the dental stop *t*—becomes the palatal stop *c*, and then the palatal sibilant that induced the change is also turned into the palatal aspirate stop *ch*. The *sibilant*, in other words, disappears, but there is a “trace” of it in the aspiration of the resulting palatal stop.

- *tat śṛṇu* → *tac chṛṇu* “listen to that”
- *virāṭ śṛṇu* → *virāc chṛṇu* “listen, king”

Assimilation to a following retroflex *stop* (note that there is no assimilation before a following retroflex sibilant):

- *tat + ʃikā* → *tatʃikā* “that commentary”
- *tat + ʃhakkurāḥ* → *tatʃhakkurāḥ* “that chief”
- *tat + ʃaṇḍaḥ* → *tatʃaṇḍaḥ* “that eunuch”

Since *t* is already dental, the assimilation rules apply vacuously when the following sound is a dental stop or sibilant. When, however, the following sound is the dental *semivowel* *l*, it is replaced entirely by the semivowel:

- *tat + lōkāḥ* → *tallōkāḥ* “those worlds”

As far as the *dental nasal* *n* is concerned, it is also generally assimilated to the place of articulation of a following coronal consonant, but with a few differences from the treatment of *t*. When it is followed by a coronal *stop*, it becomes the class nasal of that stop. When the following sound is *voiced*, that is the final result:

- *tān jayati* → *tāṇ jayati* “he conquers them”
- *mahān dāmarāḥ* → *mahāṇḍāmarāḥ* “a great noise”

When the following sound is *voiceless*, however, a *sibilant* appears between the final *n* and the coronal stop that stands at the beginning of the next word. The sibilant corresponds to the place of the coronal stop, and the final *n* is now written as *anusvārah*. Note that the insertion of a sibilant takes place also when the following sound is a dental stop.

- *tān calayati* → *tāṁś calayati* “he makes them go”
- *tān chagān* → *tāṁś chagān* “those goats”
- *mahān ʃikākārah* → *mahāṁś ʃikākārah* “the great commentator”
- *mahān ʃhakkurāḥ* → *mahāṁś ʃhakkurāḥ* “the great chief”

- *mabān taruḥ* → *mabāṁs taruḥ* “a great tree”

One further case is *n* followed by the dental semivowel *l*. The final nasal is replaced by *l*, as in the case of a final *t* (see above), but with the difference that the resulting *l* is nasalized and is therefore written with an *ardhacandraḥ* in Indic scripts. I represent this nasalization with an *anusvārah*:

- *tān lōkān* → *tāṁl lōkān* “those worlds”

Assimilation of voice. This is one of the distinctive processes of external consonant *sandhiḥ*, as it does not occur in internal consonant *sandhiḥ*. It is a *regressive* process: a final consonant will take on the *voice* features of the following sound. Because final consonants are treated as *voiceless*, this process basically requires final consonants to be voiced before voiced sounds.

- *ētat atra* → *ētad atra* “this here”
- *tat + gajaḥ* → *tadgajaḥ* “his elephant”
- *prāk uktam* → *prāg uktam* “previous stated”
- *dik + gajaḥ* → *diggajaḥ* “sky-elephant”

Assimilation of nasality. When the following sound is a nasal, a final stop becomes the nasal of whatever class it belongs to:

- *tat + mātram* → *tanmātram* “element”
- *dik + nāgaḥ* → *dinnāgaḥ* “sky-elephant”

Final *m*. Before any consonant, the labial nasal *m* is replaced by *anusvārah*.

- *tam jayati* → *taṁ jayati* “he conquers him”
- *tam śāsti* → *taṁ śāsti* “he disciplines him”

- *tam rōhati* → *taṁ rōhati* “he ascends that”

Finally, there is relatively minor *weight-preservation* phenonemon that applies to a final *n* and *ṅ*. When this sound is preceded by a short vowel, and when the following word begins with a voice, the nasal is *doubled*, so as to ensure that the first word—which ended in a heavy syllable—also ends in a heavy syllable in connected or *sambhitā* speech:

- *pratyaṅ āste* → *pratyaṅṅ āste* “he sits facing this direction”
- *pacan āste* → *pacann āste* “he sits cooking”

§7.5. *Visargasandhiḥ*

The *sandhi*-behavior of *visargāḥ*, also called *visarjanīyaḥ*, merits a separate treatment. First, it is one of the few sets of phonotactic rules that refers to both left-hand context (what comes *before* the *visargāḥ*) and right-hand context (what comes *after* it). Second, *visargāḥ* is not itself a phoneme of the Sanskrit language, but merely a positional variant of the phonemes /s/ and /r/, and as a result, the rules regarding the treatment of *visargāḥ* in combination refer to several distinct levels of representation. For the same reason, it is important to distinguish whether a *visargāḥ* represents an underlying *s* or an underlying *r*.

The treatment of *visargāḥ* can be phrased in the following rules:

- i. Before a voiceless stop, *visargāḥ* becomes the sibilant corresponding in place of articulation to that stop:
 - a) $-ḥ \rightarrow -ś / _ [c \text{ } cb]$
 - *brāhmaṇāḥ calanti* → *brāhmaṇās calanti* “the Brāhmaṇas walk”
 - *rāmaḥ ca* → *rāmaś ca* “and Rāma”

- *induḥ chādayati* → *indus chādayati* “the moon covers”
- b) $-ḥ \rightarrow -ṣ / _ [t th]$
- *paṇḍitaḥ ṭīkām karōti* → *paṇḍitaṣ ṭīkām karōti* “The scholar composes a commentary”
- c) $-ḥ \rightarrow -s / _ [t th]$
- *sūryaḥ tapati* → *sūryas tapati* “The sun is hot”
 - *siddhāḥ tṛpyanti* → *siddhās tṛpyanti* “The *siddhas* are satisfied”
- d) Since there is no sibilant with a velar or labial place of articulation, the *visargāḥ* remains before velar and labial voiceless stops. In some orthographic traditions, however, it is written with a distinct sign called *jihvāmūliyaḥ* before a velar voiceless stop (and pronounced as [x]); before a labial voiceless stop it is written with another sign, called *upadhmānīyaḥ* (and pronounced [f]).
- *vṛkāḥ khādanti* “the wolves eat” (optionally *vṛkāx khādanti*)
 - *indraḥ pibati* “Indra drinks” (optionally *indraf pibati*)
2. Before a sibilant—and all Sanskrit sibilants are voiceless—*visargāḥ* remains. In some orthographic traditions, mainly those of South India, the *visargāḥ* is replaced by the following sibilant.
- *nṛpaḥ śāsti* “the king governs” (optionally *nṛpaś śāsti*)
 - *sarpaḥ sarpati* “the snake slithers” (optionally *sarpaś sarpati*)
3. Before any **voiced** sound, including vowels, what happens to the *visargāḥ* will depend on the preceding vowel, *provided that the visargāḥ represents an underlying phoneme /s/*.
- a) In case the preceding vowel is *a*:

- i. If the following sound is also the short vowel *a*, then the final sequence *-aḥ* becomes *-ō*, and the following *a* is elided. Its absence is usually marked with an *avagrahaḥ*:
- *-aḥ a-* → *-ō'*
- ii. If the following sound is any other vowel, the *visargaḥ* is simply dropped:
- *-aḥ* → *-a* / ___ [*ā i ī u ū ṛ ṝ ḷ ē ō ai au*]
 - *pārthaḥ ēva* → *pārtha ēva*
 - *mahārājaḥ āstē* → *mahārāja āstē*
- iii. If the following sound is a voiced consonant, the final sequence becomes *-ō*.
- *-aḥ* → *-ō* / ___ [*g gh j jh ḍ ḍh d dh b bh ñ ñ n m y r v l h*]
 - *samtuṣṭaḥ bhavati* → *samtuṣṭō bhavati*
 - *indraḥ hanti* → *indrō hanti*
- b) In case the preceding vowel is *ā*:
- i. The *visargaḥ* is simply dropped (before any voiced sound, vowel or consonant).
- c) In case the preceding vowel is *anything else*:
- i. Generally, the *visargaḥ* is replaced by *r*.
- *-ḥ* → *-r* / [*i ī u ū ṛ ṝ ē ō ai au*] ___ [*a ā i ī u ū ṛ ṝ ḷ ē ō ai au g gh j jh ḍ ḍh d dh b bh ñ ñ n m y r v l h*]
 - *agniḥ iva* → *agnir iva*
 - *vadhūḥ bhavati* → *vadhūr bhavati*
- ii. However, when the following sound is *r*, the *visargaḥ* is dropped, with compensatory lengthening (if applicable) of the preceding vowel.
- *agnír rōcatē* → *agní̄ rōcatē*

4. If, however, the *visargáḥ* represents an underlying /r/, then the *r* simply remains, except when it is followed by *r*. In that case, the outcome is exactly the same as an underlying *s* followed by *r*: the first *r* is dropped, with compensatory lengthening of the preceding vowel.

- *ṣunar asti* → *ṣunar asti*
- *ṣunar rōcatē* → *ṣunā rōcatē*

However, I find it easier to understand *visargasandhiḥ* by bearing in mind that the *visargáḥ* itself is the outcome of a series of phonotactic processes, and hence what *visargasandhiḥ* really represents is the interaction of three relatively straightforward sets of rules:

- i. The first is a set of *assimilation* rules.
 - **Voice assimilation:** A word-final *s* or *r* will take on the voicing features of the sound that follows.
 - If the following sound is *voiceless*, then the *s* or *r* will also become voiceless. We can represent it already at this stage with *visargáḥ*, which is a voiceless sound without any distinctive place features.
 - If the following sound is *voiced*, then the *s* or *r* will also be voiced. Since *r* is already voiced, it stays the same at this stage. An underlying *s*, however, is changed to a voiced sibilant *Z*. As a result of voice assimilation, we end up with three possible representations:
 - a) *ḥ* before a voiceless sound, standing for an underlying *r* or *s*.
 - b) *r* before a voiced sound, standing for an underlying *r*;
 - c) *Z* before a voiced sound, standing for an underlying *s*.
 - **Place assimilation:** This process only applies to the voiceless sound *ḥ*, which arises in connection with voice assimilation. The *visargáḥ* is assimilated to

the place of articulation of the following stop. The following outcomes are possible:

- x (a voiceless velar sibilant) before any voiceless velar stop (k or kh)
 - $ś$ (a voiceless palatal sibilant) before any voiceless palatal stop (c or ch)
 - $ṣ$ (a voiceless retroflex sibilant) before any voiceless retroflex stop ($ṭ$ or $ṭh$)
 - s (a voiceless dental sibilant) before any voiceless dental stop (t or th)
 - f (a voiceless labial sibilant) before any voiceless labial stop (p or ph)
- Since place assimilation only applies to *stop* consonants, *visargāḥ* remains before sibilants.
2. The second is a set of rules that “resolves” all of the sounds generated above, either back into *visargāḥ*, or otherwise into other sounds of the Sanskrit language.
- The voiceless sibilants x and f are generally replaced with *visargāḥ*.
 - The voiced sibilant Z —which is simply the voiced counterpart to the voiceless *visargāḥ*—is resolved in a number of ways:
 - Generally, aZ will turn into $ō$ before a voiced consonant.
 - aZ “swallows up” a following a -vowel, resulting in expressions like $sō$ *’bravīt*.
 - Before a vowel, aZ generally becomes a , and a hiatus remains.
 - $āZ$ will generally just become $ā$, and a hiatus remains.
 - In all other cases, Z becomes r .
3. Finally, Sanskrit has a constraint on two r sounds occurring in a row, so if the above rules produce any such cases, they need to be resolved by deleting the first r and lengthening the previous vowel.

§7.6. Internal consonant *sandhi*: Voice

Voice assimilation is when one sound takes on the voicing features of another sound, which is usually directly adjacent to it. *In internal sandhi, voice assimilation is only triggered by obstruents*: that is, when a consonant is followed by a *stop* or *sibilant*, voice features are either spread leftwards or rightwards across the entire conjunct; when a consonant is followed by a *vowel*, *semivowel*, or *nasal*, which are always voiced, no voice assimilation takes place. This is in contrast to external sandhi, where the final consonant of one word is *always* assimilated to the voice features of the following sound, regardless of what the following sound is.

Voice assimilation proceeds differently depending on the other features of the consonants involved. The main forms of voice assimilation in internal sandhi are:

- **Regressive voice assimilation.** This occurs between two obstruents, of which the first is *unaspirated*. Most often, the first sound is voiced and the second sound is voiceless, and hence the entire conjunct ends up being voiceless, but in a few instances the reverse is the case: the first sound is voiceless, and the second sound is voiced, and the entire conjunct ends up being voiced.
 - *ád-ti* → अत्ति “he eats”
 - *véd-ti* → वेत्ति “he knows”
 - *yuk-tá-m* → युक्तम् (voiceless spreads left)
 - *bhuj-tá-m* → भुक्तम् “enjoyed” (voiceless spreads left; for depalatalization, see below)
 - *bubhuj-sā* → बुभुक्षा “hunger, desire to eat” (voiceless spreads left; for depalatalization, see below)
 - *upa-pad-ti-ḥ* → उपपत्तिः “making sense” (voiceless spreads left)
 - *upá-p-Ø-d-am* → उपब्दम् (voiced spreads left)

- *bhūnk-dhvē* → भुङ्क्ध्वे “you enjoy” (voiced spreads left)
- *śak-dhī* → शक्धि “help” (voiced spreads left)
- **Progressive voice assimilation.** This occurs between two obstruents, of which the first is *aspirated*. It is also called **Bartholomae’s Law**. When the first sound is aspirated, it passes its voice features to the following sound, rather than the reverse (as observed above). Generally, it is only *voiced aspirates* that form a context for this rule, since voiceless aspirates will not generally come into contact with another obstruent to their right. Hence Bartholomae’s Law can be thought of as progressive assimilation of voicing under the condition of an initial voiced aspirated.
 - *budh-tā-h* → बुद्ध: “awoken”
 - *lubb-tā-h* → लुब्ध: “greedy”
 - *labh-tā-h* → लब्ध: “obtained”

The sound *s* behaves regularly when it forms the *right-hand context*: it devoices a preceding voiced obstruent. In addition, however, it also removes any aspiration from the preceding obstruent:

- *labh-sya-ti* → लप्स्यति “he will obtain”

When it forms the *left-hand context*, however, the outcomes call for some comment, because Sanskrit does not have any voiced sibilants. Generally *s* is retained before voiceless obstruents, including *s*; one exception is the form असि “you are” (*as-si*). Before voiced obstruents, it disappears, with compensatory lengthening of the previous vowel:

- *ās-dhvē* → आध्वे “you sit”
- *śās-dhī* → शाधि “punish”

The sound *h*, which is voiced and aspirated, partly behaves as any other voiced aspirate—but only partly. When it forms the *right-hand context*, which only happens in external

sandhi, it spreads its voice features leftwards, and receives its place features from the preceding stop:

- *tát hí* → तद्धि
- *anuṣṭúb hí* → अनुष्टुब्धि

When it forms the *left-hand context*, when generally happens when *h* stands at the end of a verbal root, the outcome depends on whether the *h* represents an earlier velar or palatal:

- When a final *h* represents an earlier *velar*, which is most often the case in *roots beginning with a dental stop* such as √*dab* “burn” and √*dub* “milk,” it is treated as if it were *gh*:
 - *dah-tá-h* → दग्धः “burned”
 - *dub-tá-h* → दुग्धः “milked”
- When a final *h* represents an earlier *palatal*, the outcomes are peculiar: it is as if the underlying palatal aspirate (* $\text{ṣ}h$) spread its aspiration to the following stop, as usual, and then developed into a voiced palatal sibilant (* ṣ). This voiced palatal sibilant turns a following dental sound into a retroflex sound, just as the voiceless palatal sibilant (ṣ) does. But because there is no voiced palatal sibilant in the phonemic inventory of Sanskrit, this sound disappears. If the vowel preceding *h* is *a*, then it becomes \bar{o} ; otherwise, the vowel is simply lengthened.
 - *rub-tá-h* → **ruṣ-dhá-h* → रूढः “ascended”
 - *mub-tá-h* → **muṣ-dhá-h* → मूढः “bewildered”
 - *léh-ti* → **léṣ-dhi* → लेढि “he licks”
 - *lih-dhvám* → **liṣ-dhvám* → लीढम् “lick”
 - *sáh-tum* → **sáṣ-dhum* → सोढुम् “to bear”
 - *váh-tum* → **vaṣ-dhum* → वोढुम् “to carry”

§7.7. Internal consonant *sandhiḥ*: Aspiration

Many cases of changes involving aspiration have been discussed above, including the *progressive assimilation of aspiration* from a voiced aspirated in the left-hand context, and the *deaspiration* of a consonant due to a following sibilant. Here we may mention one more phenomenon connected with aspiration: **Grassman’s Law**, the “throwing backwards” of aspiration that is conditioned by *deaspiration*. If a root ends in an aspirated consonant, and also begins with a stop consonant, then when the root-final consonant is deaspirated under the influence of a following sibilant, its aspiration is “thrown back” onto the root-initial stop. Here are some examples:

- *dōh-sya-ti* → धोक्ष्यति “he will milk”
- *dah-sya-ti* → धक्ष्यति “he will burn”

NOTE: There is some debate about the motivation of this rule: while it is clearly a synchronic rule of Sanskrit phonology—indeed earlier stages of the language apply the rule only sporadically—it has been adduced in support of a theory that Indo-European roots were actually “biaspirate,” that is, that aspiration was a feature of the entire root, rather than one or another of its consonants.

§7.8. Internal consonant *sandhiḥ*: Retroflexion

Retroflexion is a phonological process whereby a dental sound (i.e., *t*, *th*, *d*, *dh*, *n*, or *s*) becomes a retroflex sound (i.e., *ṭ*, *ṭh*, *ḍ*, *ḍh*, *ṇ*, or *ṣ*) due to the influence of a preceding sound. One of the special features of retroflexion is that, under certain circumstances, it can operate at a distance: the “target” sound does not need to immediately follow the “trigger” sound.

Retroflexion of stops. The dental stops *t*, *th*, *d*, and *dh* immediately following the retroflex sibilant *ṣ* and the palatal sibilant *ś* become their retroflex equivalents; in the latter case, the palatal sibilant is changed to the retroflex sibilant *ṣ*. Some cases of a final *j* behave similarly to a final *ś*, in that a following dental becomes retroflex, and the triggering palatal

becomes retroflex in turn, although other cases of a final *j* behave similarly to a final *c* (see below) and do not cause retroflexion.

- *ti-stha-ti* → तिष्ठति “he stands” (परस्मै. प्र. एक०)
- *dus-taram* → *duṣ-taram* → दुष्टरम् “difficult to overcome” (१ एक०)
- *dr̥ś-tā-m* → दृष्टम् “seen”
- *viś-tā-m* → विष्टम् “entered”
- *parā-mj-ta-m* → परामृष्टम् “referred to”

Retroflexion of sibilants. A dental *s* immediately following one of the RUKI sounds becomes a retroflex *ṣ*. RUKI is an acronym for the sounds that trigger retroflexion of a sibilant: R (*r*, *ṛ*, and *ṝ*), U (*u*, *ū*, *ō* and *au*), K (*k*), and I (*i*, *ī*, *ē*, and *ai*). These sounds share the phonological feature HIGH, i.e., they are all articulated with the tongue raised high in the mouth. This process only occurs when the *s* is followed by a vowel or the sounds *t*, *th*, *n*, *m*, *y* or *v*.

- गुरु-सु → गुरुषु “teachers” (loc.pl./सप्तमीबहु.)
- गिरि-सु → गिरिषु “mountains” (loc.pl./सप्तमीबहु.)
- पितृ-ऋ-सु → पितृषु “fathers” (loc.pl./सप्तमीबहु.)
- दिश-सु → दिक्-सु (see depalatalization below) → दिक्षु “directions” (loc.pl./सप्तमीबहु.)
- *bi-bhar-si* → बिभर्षि “you carry” (2nd.sg.parasmai./परस्मै.मध्यम.एक.)

Note, in particular, that RUKI does not apply when *s* is followed by *r* (the so-called *tisra*-rule):

- तिस्रः → तिस्रः “three”
- उस्ना → उस्ना “daybreak”

RUKI applies even when an *anusvārah* separates the trigger from the target, although gen-

erally only in the nominative-accusative plural of neuter stems:

- सर्पी-सि → सर्पीषि “butterflies”
- ज्योती-सि → ज्योतीषि “celestial lights”

Note that the operation of RUKI between a triggering preverb (e.g., *abhi*, *ní*, *anú*, *nír*, *pari*) and the initial *s* of a verbal form is **lexically** specified, that is, some verbal roots allow the initial *s* to be retroflex, while others do not. Those that admit of initial retroflexion are taught in the *dhātupāṭha* with a retroflex *ṣ*, and are therefore called *ṣōpadēśaḥ* (“taught with *ṣ*”), while those that do not are taught with *s* and called *sōpadēśaḥ*:

- नि-स्नातः → निष्णातः “skilled” (षोपदेशः)
- वि-सरति → विसरति “spreads” (सोपदेशः)

Retroflexion of nasals. The dental nasal *n*, when it follows the retroflex sounds *r*, *ṛ*, *ṝ* and *ṣ* within the same word, becomes the retroflex nasal *ṇ*. This assimilation, which is called NATI, can happen *even at a distance*, that is, even if there are sounds between the trigger sound and the target sound. The triggering of retroflexion is blocked, however, by *coronal stops*, which includes palatal, retroflex, and dental stops.

- रामायनम् → रामायणम्, where *n* is retroflexed by *r* despite the intervention of *-āmāya-*.
- अर्केन → अर्केण, where *n* is retroflexed by *r* despite the intervention of *-kē-*.
- ईक्षमानम् → ईक्षमाणम्, where *n* is retroflexed by *ṣ* despite the intervention of *-amā-*.

Contrast the case of अर्चनम्, where the retroflexion of *n* by *r* is blocked by the palatal stop *c*.

§7.9. Internal consonant *sandhi*: Depalatalization

Palatal consonants are uniquely liable to changes in place of articulation. This is because palatal consonants come from two sources in Sanskrit: Indo-European palatovelars ($*k$, $*ǰ$, and $*ǰh$), which became $ś$, j , and h respectively, and Indo-European velars and labiovelars ($*k$, $*g$, and $*gh$), which were palatalized in certain contexts in the history of Indo-Iranian, and became the sounds c , j , and jh , respectively. In both cases, palatals are generally replaced with either velar or retroflex sounds in combination, but for the sound j , the outcome will depend on whether it represents an earlier palatovelar or an earlier velar. (Compare the different developments of h noted above, in which the outcome depends on whether h represents an earlier palatovelar or an earlier velar.)

The “erstwhile velars” (c and j in some contexts) revert to velars before obstruents, and regular assimilation of voice follows:

- $vác-ti$ → वक्ति “he speaks”
- $vac-dhí$ → वग्धि “speak!”
- $vác-si$ → वक्षि “you speak”
- $yuñj-tē$ → युञ्जे “he joins”
- $yuñj-dhí$ → युञ्जिघ “join!”

The “erstwhile palatovelars” ($ś$ and j in some contexts) have a variety of outcomes: t when final; k before s in verbal forms (with retroflexion of the following sibilant), $ʈ$ before s in nominal forms; $ɖ$ before voiced stops (with retroflexion of the following stop if it is a dental); $ʃ$ before t and th (with retroflexion of the following stop).

- $vás-ti$ → वष्टि “he wishes”
- $vis-su$ → विद्दु “among the tribes”
- $vis-bhiḥ$ → विद्धि: “with the tribes”

- *mārj-ti* → मार्षि “he brushes”
- *sṛj-ti-ḥ* → सृष्टि: “creation”
- *rāj-tra-ḥ* → राष्ट्र: “polity”
- *mṛj-dhī* → मृद्धि “brush!”

One exception to the above rule about “erstwhile palatovelars” is furnished by the roots *dṛś* “see,” *spṛś* “touch,” *diś* “point out” and optionally *naś* “be destroyed” and *viś* “enter.” Instead of turning the final palatal into *ṣ* before zero and *ḍ* before voiced stops in nominal forms, they turn the final palatal into *k* or *g*:

- *diś-su* → दिक्षु “among the directions”
- *diś-bhiḥ* → दिग्भिः “with the directions”
- *diś-s* → *dik-s* → दिक् “direction” (nom.sg.)

§7.10. Internal consonant *sandhiḥ*: Assimilation of nasals

Nasal consonants are generally assimilated to the place of articulation of a following sound in internal *sandhiḥ*. In case the following sound is a sibilant, the nasal becomes *anusvārah*.

- *man-sya-tē* → मंस्यते “he will think”
- *han-sya-ti* → हंस्यति “he will kill”
- *bhu-n-k-tē* → भुङ्क्ते “he eats”
- *bhu-n-j-ānaḥ* → भुञ्जानः “eating”

A dental *n* is palatalized after palatal stops:

- *yaj-na-m* → यज्ञम् “sacrifice”
- *yāc-nā* → याच्ना “request”

§7.11. Combinations of vowels

One of the basic principles of Sanskrit phonotactics is that *vowels do not directly adjoin other vowels*. The juncture between a vowel and another vowel is called a *hiatus*, a Latin word literally meaning a “yawn,” and *within a word*, it only occurs in a small number of words, where it is conventionally marked by a diaeresis on the second (e.g., *titaü-*). *Between words*, hiatus sometimes occurs as a secondary outcome of some phonotactic processes, but the general tendency is to avoid hiatus whenever possible. Hence the overarching principle of “vowel *sandhi*” could be described as *hiatus avoidance*.

The following processes account for the vast majority of cases where one vowel would directly adjoin another:

- synhaeresis;
- diphthongization;
- glide formation.

§7.12. Combinations of vowels: synhaeresis

Synaeresis refers to the process by which two *homorganic* (सवर्णः) vowels are combined into a single long vowel (*Aṣṭādhyāyī* 6.1.101). This only applies to simple vowels (अक), since only simple vowels can be *homorganic* with each other (since complex vowels such as *ē*, *ō*, *ai*, and *au* each have multiple places of articulation). In the following rules, the vowels are marked with both a *brevis* and a *longum* to show that the length of the vowel does not matter.

- $\check{a} + \check{a} \rightarrow \bar{a}$
 - *uṣa + arjitam* → उपार्जितम् “acquired”
- $\check{i} + \check{i} \rightarrow \bar{i}$

- *abhi + itam* → अभीतम् “gone over”
- $\ddot{u} + \ddot{u} \rightarrow \bar{u}$
- *su + uktam* → सूक्तम् “well-said”

§7.13. Combinations of vowels: diphthongization

Diphthongization. When two vowels that are not *homorganic* come into contact, the outcome depends on their sequence, and in particular, on whether the *higher* vowel comes first or last. Height is a feature of Sanskrit phonemes corresponding to whether the tongue is raised when pronouncing them; /i/ and /u/ are high, but /a/ is not. When the vowel sequence consists of a low vowel followed by a high vowel, the result is what is called a “rising diphthong,” a single vowel that starts low but ends high, such as /ai/ (\bar{e}) and /au/ (\bar{o}).

- $\ddot{a} + \ddot{i} \rightarrow \bar{e}$
- *pra + itah* → प्रेतः “gone forth,” a ghost
- $\ddot{a} + \ddot{u} \rightarrow \bar{o}$
- *upa + udghātah* → उपोद्घातः “preface”
- *na + u* → नो “not”
- $\ddot{a} + r̥$ or $\ddot{a} + r̄ \rightarrow ar$
- *mahā + ṛṣiḥ* → महर्षिः “great sage”

§7.14. Combinations of vowels: glide formation

Glide formation is similar to diphthongization, except that the first vowel is high, and the second vowel may be either low or high. When the second vowel is low, this process results in what are sometimes called “falling diphthongs.” The name of this process reflects the fact that the high vowel becomes a *glide*, that is, a non-syllabic segment with

the same features. Pāṇini phrased the glide-formation rule as इको यअण् अचि (*Aṣṭādhyāyī* 6.1.77), literally “a high vowel [$iK = i, ī, u, ū, ṛ, ṝ, ḷ$] becomes the corresponding semivowel [$yaN = y, v, r, l$] before a vowel [$aC = a, ā, i, ī, u, ū, ṛ, ṝ, ḷ, ē, ē, ai, au$].” (In fact glide formation does not happen before *any* vowel, but in Pāṇini’s grammar, this rule is bled by the synhaeresis rule, discussed above: hence the vowel in the right-hand context will never be identical to the vowel that is replaced with a semivowel.)

The general rule of glide formation is that the first vowel simply becomes the corresponding semivowel. Here are some examples from *internal sandhi*:

- नदी + आ → नद्या (“river,” fem.sg.instr.)
- वधू + आ → वध्वा (“river,” fem.sg.instr.)
- भो + अ + ति → भवति (“becomes,” 3rd.sg.*parasmai*. present indic.)

And here are some examples from *external sandhi*:

- दधि # अत्र → दध्य् अत्र “curd here”
- मधु # अत्र → मध्व् अत्र “honey here”
- अति + आहितम् → अत्याहितम् “great calamity”
- पितृ + अर्थम् → पित्रर्थम् “for the sake of the ancestors”

However, there are a number of cases in which a high vowel does not simply become the corresponding semivowel, but rather becomes a vowel-semivowel (or semivowel-vowel-semivowel) sequence. We can call this a **syllabic glide**. This only ever happens in *internal sandhi*, and only ever at the end of a morpheme. It generally serves to keep the morpheme (in many cases a verbal root) in its own syllable, thus preventing it from syllabifying with the following vowel.

An *i*-vowel is replaced by the syllabic glide *iy*, and an *u*-vowel is replaced by the syllabic glide *uv*, before an ending beginning with a vowel, in these circumstances:

- at the end of a verbal root (*Aṣṭādhyāyī* 6.4.77);
 - क्षि + अ + न्ति → क्षियन्ति “they reside”
- at the end of the present stem forming suffix श्चु (i.e., उ) (*Aṣṭādhyāyī* 6.4.77);
 - आप् + उ + अन्ति → आमुवन्ति “they obtain”
- at the end of a reduplicate, before a non-homorganic vowel (*Aṣṭādhyāyī* 6.4.78);
 - इ + एप् + अ → इयेष “he wanted” (3rd.sg.*parasmai.* perfect)
- at the end of the nominal stem भ्रू f. “eyebrow” (*Aṣṭādhyāyī* 6.4.77);
 - भ्रू + अः → भ्रुवः “eyebrows”
- at the end of the nominal stem स्त्री f. “woman” (*Aṣṭādhyāyī* 6.4.79), although optionally in the accusative singular and plural;
 - स्त्री + अः → स्त्रियः “women”

NOTE: Pāṇini calls these syllabic glides इयङ् and उवङ्.

An *r̥* at the end of a verbal root is replaced by *ri* before the present stem forming suffix श्च (अ) of sixth-class roots, before the present stem forming suffix यक् (य) of the passive, and before the optative endings. This *ri*, standing at the end of a verbal root, then takes the syllabic glide *iy* (*Aṣṭādhyāyī* 7.4.28):

- आ + ष्ट + अ + ते → आद्रियते “he honors”
- कृ + य + ते → क्रियते “it is being done”

An *r̄* at the end of a verbal root is replaced by *ir* (*Aṣṭādhyāyī* 7.1.100):

- कृ + अ + ति → किरति “he sprinkles”

Chapter 2

Nominal Morphology

§8. Nominals

Indian grammarians generally considered most forms that were not verbs to be nouns. Yāska thus recognizes four categories of words: nominals (नाम), verbs (आख्यातम्), preverbs (उपसर्गः), and indeclinables (निपातः). Thus what we call nouns, pronouns, adjectives (including participles) and most adverbs were grouped under the class of “nominals.” And for good reason: they all take certain types of suffixes, which we will “nominal suffixes,” that express relations particular to this class of words.

Semantically, nominals tend to refer to what Indian grammarians have called “existing things” (सत्त्वम्) in contrast to verbs, which refer to “processes” (भावः). The distinction is very weak; generally, whatever can be said with nominals, can also be said with verbs, and *vice versa*.

In morphological terms, there is no distinction between adjectives and nouns in Sanskrit. Semantically, of course, adjectives qualify a noun, or as some authors say, express a quality. And syntactically, adjectives agree with their head noun in gender, number, and case. This

typically means that adjectives are formed in all three genders, whereas nouns are limited to a single gender. The categories they reflect, however, and the morphemes by which those categories are expressed, are exactly the same as for nouns. Thus there is no formal difference between adjectives used *attributively*, that is, to qualify another noun (e.g., प्रसन्नः पुरुषः, “a calm man”) and adjectives used *substantively* (e.g., प्रसन्नः, “the calm [one]”).

§8.1. Stems and ending

Every nominal consists of two parts. The first is a *stem* or प्रातिपदिकम्. This was defined by Pāṇini as “something that has meaning that is not a verbal root or an affix” (अर्थवद् अघातुर अप्रत्ययः प्रातिपदिकम्, *Aṣṭādhyāyī* 1.2.45). The second, called प्रत्ययः in Sanskrit, can be called an *affix* (the most general term for a morpheme added to another), a *suffix* (a term for a morpheme added after another), or an *ending* (since these affixes always come at the end of a word). Sanskrit stems are usually classified according to their final sound, since the precise form of the suffix that follows will generally depend on the final sound of the stem. Hence we talk about stems that end in *vowels*, including *stems in -a* (अकारान्तानि or अदन्तानि), *stems in -ā* (आकारान्तानि or आदन्तानि) and so on, and those that end in *consonants*, including *stems in -n* (नकारान्तानि or नन्तानि), *stems in -t* (तकारान्तानि or तन्तानि), and so on.

Sanskrit stems are classified as *changeable* or *unchangeable* by European grammars. Changeable stems are those that change when certain suffixes are added; unchangeable stems remain the same throughout their paradigm. Indian grammars made no such distinction, since they were not based on the concept of a “paradigm.”

Note that the stem and the ending often coalesce into a single form, especially in those cases when the stem ends in a vowel and the ending begins with a vowel.

Since Sanskrit is an inflectional language, a single ending will express a number of different grammatical categories. In the case of nominals, an ending expresses three principal categories: **gender, number, and case.**

§8.2. Gender (लिङ्गम्)

All Sanskrit nouns are either *masculine* (पुलिङ्गम्), *feminine* (स्त्रीलिङ्गम्) or *neuter* (नपुंसकलिङ्गम्). These grammatical genders usually correspond to the conventionally-accepted gender of the objects referred to, provided that they have such a gender. Thus men are typically referred to in the masculine, and women in the feminine. A great deal of gender assignment, however, is based on conventions that have little to no basis in biology. *A noun's gender cannot be predicted from its meaning.* Thus the gender of every noun must be learned as part of the word itself.

NOTE: The nouns of certain semantic classes do, however, tend to agree in their gender.

Class	Gender	Example
Rivers	Feminine	Gaṅgā, Śatadru, Vipāt
Mountains	Masculine	Himālaya, Malaya
Trees	Masculine	Aśoka, Saptacchada, Palāśa

In addition, the conventional gender of several inanimate objects is reaffirmed constantly through poetry. Thus no reader of Sanskrit poetry can forget that the sun and the moon are masculine, or that the night and the earth are feminine.

A particularity of the *neuter* gender, in Sanskrit and other Indo-European languages, is that neuter words never make a distinction between the nominative and accusative. Thus the form is identical regardless of whether the word is used as the subject or object of a verb.

NOTE: This is probably an effect of *ergative* alignment in Indo-European syntax, where neuter nouns could serve as the subject of an intransitive verb and the object of a transitive verb, but probably not as the subject of a transitive verb.

§8.3. Number (संख्या)

Sanskrit distinguishes between the *singular* (एकवचनम्), *dual* (द्विवचनम्), and *plural* (बहुवचनम्) in both nominal and verbal forms. These categories almost always correspond to the “real” number of the objects referred to, although there are a few cases of the number being specified lexically (i.e. *singulare tantum* or *plurale tantum* nouns).

NOTE: Sanskrit uses the dual consistently whenever two people, or two objects, are under discussion, whereas all European languages use the plural. Hence one should get used to seeing forms such as अक्षी “two eyes,” नासे “two nostrils,” हस्तौ “two hands,” पादौ “two feet,” and so on.

§8.4. Case (विभक्तिः)

Case refers to the relation of a noun to other forms in a sentence. Sanskrit, as an Indo-European language, uses case to express both core *grammatical* relations, such as whether a noun is the subject, object, or indirect object of a verb, as well as a variety of other relations involving time, space, or appurtenance. In Sanskrit, the cases are referred to by number, from one to seven. Here I give only the **basic** uses of each case. For further case usages, see the section on case usage in the syntax chapter.

Number	Sanskrit	English	Functions
1	प्रथमा	Nominative	Agrees with the <i>subject</i> argument of a verb and the subject and predicate
2	द्वितीया	Accusative	Agrees with the <i>direct object</i> of the verb; also used for duration of time a
3	तृतीया	Instrumental	Expresses instrumentality, agency, and accompaniment, either on its ow
4	चतुर्थी	Dative	Agrees with the <i>indirect object</i> of the verb; also used to express purpose.
5	पञ्चमी	Ablative	Expresses a cause, or movement away from. Also used as the compleme
6	षष्ठी	Genitive	This is an <i>adnominal</i> case, and hence expresses some relation between n
7	सप्तमी	Locative	Expresses presence or location in a place, occasions (including time), as

In addition, Sanskrit has a *vocative* (सम्बोधनम्), which is used for direct address, but this form is identical to the nominative, except *the singular of stems ending in vowels*.

NOTE: Technically, विभक्तिः refers not to case on its own, but the declensional ending as a whole, which expresses case in addition to gender and number.

§9. Endings

Pāṇini teaches the following endings in *Aṣṭādhyāyī* 4.1.2. These are not all of the forms of the nominal endings, but rather the “basic” forms from which Pāṇini derives all of the others. It is, however, useful to present them here, since these forms occur (sometimes with additional augments) in most of the remaining nominal endings, and since they coincide with the system of nominal endings that can be reconstructed for Indo-European.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सु	औ	जस्
द्वितीया	अम्	औट्	शस्
तृतीया	टा	भ्याम्	भिस्
चतुर्थी	डे	भ्याम्	भ्यस्
पञ्चमी	डसि	भ्याम्	भ्यस्
षष्ठी	डस्	ओस्	आम्
सप्तमी	डि	ओस्	सुप्

The capitalized letters in this chart are not actually part of the endings, but *anubandhas* or “diacritics” that convey information about further changes that these endings are either subject to, or induce in the stem to which they are added.

§9.1. Accent; “strong” and “weak” cases

For reasons that are not quite clear, some of the nominal endings were accented in Indo-European, and others were not. This has produced a pattern of “accent mobility” in Sanskrit and other Indo-European languages, where the accent—and with it, the form of the stem—varies with the ending.

In Sanskrit, this pattern is manifested in the distinction between “strong” and “weak” cases. “Strong” cases are the nominative and accusative singular, the nominative and accusative dual, and the nominative plural (the Sanskrit term for these cases is सर्वनामस्थानम्). All others are weak. Cases in which the ending begins with a consonant—the instrumental, dative, and ablative of the dual and plural, which are collectively referred to as *pada*-endings—are sometimes called “middle” cases, but they pattern with weak cases. These cases are so called because when the grade of the vowel alternates throughout the paradigm, the “strong” cases assign a full-grade vowel to the stem, and the “weak” cases assign it to an affix (either a stem-forming suffix or the declensional ending). (See the discussion of vowel gradation above.)

§9.2. First or nominative case (प्रथमा विभक्तिः)

The ending of the nominative was never accented. In masculine nouns, and in feminine nouns that end in either a consonant or a short vowel, the ending of the singular was *-s in Indo-European, and that of the plural was *-es. Most feminine nouns that end in a long vowel (-ā, -ī, and -ū) do not add an ending in the nominative singular, since they are formed with a suffix that does not take this ending; feminine nouns like श्री- and लक्ष्मी- which are not formed with a suffix, however, take the ending -s. In the plural, the endings that can be added are -s, -as, and -ās. As noted above, neuter nouns do not have a distinctive nominative ending. Most neuters use the bare stem for the nominative and accusative; those ending in -a use the accusative ending -m. The nominative-accusative

plural of neuters has been reshaped, but it generally ends in *-i* (deriving from **h₂*).

§9.3. Second or accusative case (द्वितीया विभक्तिः)

The inherited ending of the accusative singular was **-m*, which was realized as *-m* after vowels and *-am* after consonants. The accusative plural ending was **-ns* (probably from **-m-s*, i.e., the addition of the pluralizer **-s* onto the accusative ending **-m*) in Indo-European, which resulted in **-ns* after vowels and **-as* after consonants. In the ending **-ns*, in turn, the *-n-* was generally lost and resulted in compensatory lengthening of the previous vowel.

§9.4. Third or instrumental case (तृतीया विभक्तिः)

In Indo-European this was **-éh₁* in the singular, which resulted in Sanskrit *-ā*. The ending is accented and hence the instrumental singular is a “weak” case. The ending often combined with other forms to produce the variety of instrumental endings we observe. In the plural, the most common ending is *-bhis*, which is likely an Indo-European inheritance (cf. Greek *-φι*).

§9.5. Fourth or dative case (चतुर्थी विभक्तिः)

In the singular, this case ended in **-éi* in Indo-European, which became *-ē* in Sanskrit. For the plural form *-bhyaḥ*, compare Latin *-bus*, probably from **-bhos*.

§9.6. Fifth or ablative case (पञ्चमी विभक्तिः)

The ablative and genitive endings of the singular are identical, both being *-aḥ*, which derives historically from both **-és* and **-os*. The genitive ending *-s*, accompanied by *guṇāḥ* of the suffix, is simply another form of the same ending, but one in which the accent was on the suffix (which typically stands in the *guṇāḥ* grade, as in *mátēḥ* from **mṇ-téi-s*), rather

than on the ending (as was the case with, e.g., *dhīyāḥ* from **dhiH-és*) or on the root (as was the case with *nāmnāḥ* from **h₃nómh₁-n-os*). For the ablative plural, which is always identical to the dative plural, see above.

§9.7. Sixth or genitive case (षष्ठी विभक्तिः)

For the singular, see above. The plural is *-ām*, which is sometimes scanned as two syllables in the Avesta and the *Ṛgveda*, and therefore points to an original ending **-oHom*.

§9.8. Seventh or locative case (सप्तमी विभक्तिः)

The general ending of the locative in the singular is *-i*, which is usually accented, but the locative in *-i* probably developed out of an older form—which still survives in a few Sanskrit words—wherein the locative case has no ending at all, but is rather represented by a full grade of the nominal suffix (cf. *akṣán*), or in the case of *i*- and *u*-stem nouns, the lengthened grade (*vṛddhiḥ*). To the unaccented locative, a deictic particle *-i* was added, which then “stole” the accent from the suffix and resulted in zero grade, rather than full grade, of the suffix (cf. *rājñī*). In the plural, the ending is *-su*, with which Greek *-oi* may be compared.

§9.9. The vocative (सम्बोधनम्)

The vocative is only distinct from the nominative in the singular. In the singular, the accent is always on the first syllable. In the case of stems ending in a vowel, the stem is used on its own, without an ending. Stems ending in *i* and *u* (षि) have *guṇāḥ* of the final vowel. Stems ending in *ā* have a vocative ending *-ē*. Stems ending in other long vowels (*ī* and *ū*) shorten it in the vocative.

§9.10. The suffix तसि

In addition to the above cases, there is another form (called तसि or तसिब्ल by Pāṇini) that consists of the ending *-tas* added onto a nominal stem. In many cases, these forms have the sense of the *ablative*, that is, they are used in expressions of comparison (e.g., *vr̥kṣata unnatatarah* ‘taller than a tree’), but they may also be used in a locative sense (e.g., *āditaḥ* ‘at the beginning,’) or in an instrumental/predicative sense.

§10. Root nouns

In these nouns, the stem (प्रातिपदिकम्) is identical to a root; there are no additional suffixes that intervene between the root and the endings.

	एकवचने		द्विवचने		बहुवचने	
प्रथमा	<i>dhī-s</i>	धीः	<i>dhī-au</i>	धियौ	<i>dhī-aḥ</i>	धियः
द्वितीया	<i>dhī-am</i>	धियम्	<i>dhī-au</i>	धियौ	<i>dhī-aḥ</i>	धियः
तृतीया	<i>dhī-ā</i>	धिया	<i>dhī-bhyām</i>	धीभ्याम्	<i>dhī-bhiḥ</i>	धीभिः
चतुर्थी	<i>dhī-ē</i>	धिये	<i>dhī-bhyām</i>	धीभ्याम्	<i>dhī-bhyaḥ</i>	धीभ्यः
पञ्चमी	<i>dhī-aḥ</i>	धियः	<i>dhī-bhyām</i>	धीभ्याम्	<i>dhī-bhyaḥ</i>	धीभ्यः
षष्ठी	<i>dhī-aḥ</i>	धियः	<i>dhī-ōḥ</i>	धियोः	<i>dhī-ām</i>	धियाम्
सप्तमी	<i>dhī-ī</i>	धियि	<i>dhī-ōḥ</i>	धियोः	<i>dhī-su</i>	धीषु

In the following example, the stem is दिश्- f. “direction,” formed from the verbal root √दिश “direct” without any suffix.

	एकवचने		द्विवचने		बहुवचने	
प्रथमा	<i>diś-s</i>	दिक्	<i>diś-au</i>	दिशौ	<i>diś-aḥ</i>	दिशः
द्वितीया	<i>diś-am</i>	दिशम्	<i>diś-au</i>	दिशौ	<i>diś-aḥ</i>	दिशः
तृतीया	<i>diś-ā</i>	दिशा	<i>diś-bhyām</i>	दिग्भ्याम्	<i>diś-bhiḥ</i>	दिग्भिः
चतुर्थी	<i>diś-ē</i>	दिशे	<i>diś-bhyām</i>	दिग्भ्याम्	<i>diś-bhyaḥ</i>	दिग्भ्यः
पञ्चमी	<i>diś-aḥ</i>	दिशः	<i>diś-bhyām</i>	दिग्भ्याम्	<i>diś-bhyaḥ</i>	दिग्भ्यः
षष्ठी	<i>diś-aḥ</i>	दिशः	<i>diś-ōḥ</i>	दिशोः	<i>diś-ām</i>	दिशाम्
सप्तमी	<i>diś-i</i>	दिशि	<i>diś-ōḥ</i>	दिशोः	<i>diś-su</i>	दिक्षु

§II. Stems ending in vowels

Stems ending in vowels, while they mostly do not exhibit gradation between different cases, have peculiarities of their own. In some cases, they take special endings, some of which include a recurring augment (आगमः).

§II.I. Stems ending in *-a* (अकारान्तानि)

Stems ending in *-a* are the most numerous class of nominal stems in the Sanskrit language.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	देवः	देवौ	देवाः
द्वितीया	देवम्	देवौ	देवान्
तृतीया	देवेन	देवाभ्याम्	देवैः
चतुर्थी	देवाय	देवाभ्याम्	देवेभ्यः
पञ्चमी	देवात्	देवाभ्याम्	देवेभ्यः
षष्ठी	देवस्य	देवयोः	देवानाम्
सप्तमी	देवे	देवयोः	देवेषु
सम्बोधनम्	देव	देवौ	देवाः

There is no pattern of vowel gradation in this declension: the stem maintains its form throughout the paradigm. It has a number of features that distinguish it from the common set of endings introduced above. One of them is the extension of the stem from *-a-* into *-ē-* by means of the addition of an augment *-i-* in certain cases.

- देवेन (inst.sg./तृतीयैक.): The regular instrumental singular ending $Tā$ is replaced by na after the modified stem in $-ē-$. Note that the n of this ending is subject to retroflexion by the RUKI rule.
- देवाय (dat.sg./चतुर्थ्यैक.): The regular dative singular ending $-ē$ ($\check{N}ē$) is added to the stem and suffixed with an augment a :
 1. देव- + ए → देवै-
 2. देवै- + अ → देवाय
- देवात् (abl.sg./पञ्चम्यैक.): The regular ablative singular ending $-as$ ($\check{N}asI$) is replaced by $āt$. This is an old feature of Indo-European thematic (e/o -stem) nouns; compare Old Latin $camp-ōd$.

- देवस्य (gen.sg./षष्ठ्येक.): The genitive singular ending *-as* (*Ūas*) is replaced by *syā*, which again is an old feature of Indo-European thematic nouns; compare Homeric Greek $\pi\omicron\lambda\acute{\epsilon}\mu\text{-}\omicron\iota\omicron \leftarrow *-\text{ohyo} \leftarrow *-\text{osyo}$.
- देवे (loc.sg./सप्तम्येक.): The locative singular ending *-i* (*Ūi*) is simply added to the stem, and the combination *a-i* results in the vowel \bar{e} . (Compare, e.g., $\omicron\acute{\iota}\kappa\omicron\iota$.)
- देव (voc.sg./सम्बोधनैक.): The vocative is merely the stem, with the accent retracted to the first syllable.
- देवाभ्याम्, देवेभ्यः, देवेषु (inst.-dat.-abl.du./तृतीयाचतुर्थीपञ्चमीद्वि., dat.-abl.pl./चतुर्थीपञ्चमीबहु., loc.pl./सप्तमीबहु.): The so-called *pada*-endings, which begin with a consonant, are added to the extended stem in \bar{e} . This includes the dative-ablative ending of the plural, and the locative ending of the plural. The instrumental-dative-ablative of the dual uses a stem in long \bar{a} rather than \bar{e} . Note that the ending *-su* of the locative plural is always retroflexed as a result of the preceding vowel \bar{e} due to the RUKI rule.
- देवाः (nom.pl./प्रथमाबहु.): Historically, this ending can be analyzed simply as *-as* (*Ūas*, **-es*) added onto the stem in *-a-* (**-e-*). Pāṇini has a rule that lengthens the stem vowel before the ending *-as* (*Ūas*) (*Aṣṭādhyāyī* 6.1.102):

1. देव- + -अस् → देवा-स्

- देवान् (acc.pl./द्वितीयाबहु.): The accusative plural ending *-as* (*Śas*) historically represents **-ns*, probably a combination of the accusative suffix **-m* and the plural suffix **-s*. When this ending followed a consonant, the **n* was pronounced as a vowel, and developed into *a* in Sanskrit. When it followed a vowel, it was pronounced as a consonant, yielding the ending **-ns*. Subsequently the **s* was lost, with compensatory lengthening of the previous vowel, resulting in the accusative plural ending that is common to vowel-stem nouns in Sanskrit: *-s* with a lengthening of the vowel of the stem, as taught by Pāṇini (*Aṣṭādhyāyī* 6.1.103):

I. देव- + -अस् → देवान्

- देवैः (instr.pl./तृतीयाबहु.): The ending is not *bhiḥ* but *-aiḥ*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	यज्ञम्	यज्ञे	यज्ञानि
द्वितीया			
तृतीया	यज्ञेन	यज्ञाम्याम्	यज्ञैः
चतुर्थी	यज्ञाय	यज्ञाम्याम्	यज्ञेभ्यः
पञ्चमी	यज्ञात्	यज्ञाम्याम्	यज्ञेभ्यः
षष्ठी	यज्ञस्य	यज्ञयोः	यज्ञानाम्
सप्तमी	यज्ञे	यज्ञयोः	यज्ञेषु

The neuter of the *a*-stem declension is almost identical to that of the masculine, with one signal difference: as with all neuters, there is no distinction between the nominative and accusative.

- यज्ञम् (nom.-acc.sg./प्रथमाद्वितीयैक.): The accusative ending *-am* is used for the nominative and accusative singular.
- यज्ञे (nom.-acc.du./प्रथमाद्वितीयाद्वि.): The ending *-i* is added to the stem, resulting in the ending *-ē*, which is not subject to *sandhi* (*Aṣṭādhyāyī* I.I.II). The reason is perhaps that this *i* historically derives from a laryngeal, namely **h₁*.
- यज्ञानि (nom.-acc.pl./प्रथमाद्वितीयाबहु.): The original ending of the neuter plural was **-h₂*, which either lengthened a preceding vowel or, if it came after a consonant, developed into *-i* (*Śi*). Thus the more common ending of the *a*-stem neuter nominative-accusative plural in the Vedas is *-ā*. Already in the Vedic period, however, this ending started to be replaced by an ending in *-āni*, which shows the influence of the declensional pattern of stems in *-n*.

§11.2. Stems ending in *-i* (इकारान्तानि)

Stems ending in the short vowels *i* and *u* behave similarly, in terms of the changes that the stem undergoes before the endings. All masculine and neuter stems in *-i* and *-u* belong to a class of stems that Pāṇini calls षि (*Aṣṭādhyāyī* 1.4.7), which triggers some special rules. In addition, feminine stems in *-i* can be considered to belong to the षि class, or alternatively they can be considered to belong to a larger class of feminine stems called नदी, which includes most feminine stems in *ī* and *ū* (the so-called “derivative” stems).

For the declension of the words पति- and सखि-, see below.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	अग्निः	अग्नी	अग्नयः
द्वितीया	अग्निम्	अग्नी	अग्नीन्
तृतीया	अग्निना	अग्निभ्याम्	अग्निभिः
चतुर्थी	अग्नये	अग्निभ्याम्	अग्निभ्यः
पञ्चमी	अग्नेः	अग्निभ्याम्	अग्निभ्यः
षष्ठी	अग्नेः	अग्नयोः	अग्नीनाम्
सप्तमी	अग्नौ	अग्नयोः	अग्निषु
संबोधने	अग्ने	अग्नी	अग्नयः

One particularity of the nouns ending in *-i* and *-u* is the alternation between the grades of the final vowel of the stem and the ending, evident in the following forms:

- अग्नेः (पञ्चमीषष्ठ्यौ एक०): The regular ablative and genitive singular endings *ŃasI* and *Ńas* trigger guṇa of the final vowel of the stem. The “full-grade” form of the stem vowel, *-ē*, is then followed by the “zero-grade” form of the case suffix, *-s*.
- अग्नौ (सप्तमी एक०): The regular locative singular ending *Ńi* is replaced by *vṛddhiḥ* of the stem vowel in stems ending in *-i* and *-u* (7.3.119).

- अग्ने (संबोधनम् एक०): The vocative ends in guṇa of the stem vowel (7.3.108).
- अग्रयः (प्रथमा बहु०): The nominative plural ending *Jas* triggers guṇa of the final vowel of the stem:
 - $agní + Jas \rightarrow agnḗ + Jas \rightarrow agnḗ + as \rightarrow agnáyah$

- अग्नीन् (द्वितीया बहु०): The accusative plural ending *Ṣas* does not trigger guṇa of the final stem (because of the marker *Ṣ*). Rather, it triggers the long form of the stem vowel, in this case *-ī*, after which the ending is not *-as* but *-n* (6.1.103). As noted above, *-as* and *-n* are historically equivalent: the accusative plural ending was **-ns*, where the *n* was pronounced as a vowel (conventionally written **-ṇ* among Indo-Europeanists) after a stem-final consonant and as a consonant after a stem-final vowel. The ending **-ins* was then changed to *-in* by a process of “compensatory lengthening.”

There is also some influence from the declension of *n*-stem nouns. This arises from the fact that the *n* could function as a “hiatus-breaker” between a stem that ended in a vowel and a case suffix that began with a vowel. This influence is limited to the instrumental singular ending in the masculine declension, but in the neuter declension (see below) it is more widespread.

- अग्निना (तृतीया एक०): The regular instrumental singular ending *Tā* is replaced by *āN̄*.

Finally, of course, all stems that end in *ruki* sounds—including *-i*, *-ī*, *-u*, and *-ū*—trigger retroflexion of a following *s*, which occurs in the locative plural ending:

- अग्निषु (सप्तमी बहु०) = $agní + suP$.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	वारि	वारिणी	वारीणि
द्वितीया			
तृतीया	वारिणा	वारिभ्याम्	वारिभिः
चतुर्थी	वारिणे	वारिभ्याम्	वारिभ्यः
पञ्चमी	वारिणः	वारिभ्याम्	वारिभ्यः
षष्ठी	वारिणः	वारिणोः	वारीणाम्
सप्तमी	वारिणि	वारिणोः	वारिषु

Neuter stems ending in *i* characteristically exhibit the consonant *n* between the stem and endings beginning with a vowel. Thus, before these endings, they behave as if their stem does not end in *-i* but in *-in*.

However, neuter *adjectives* ending in *i* may optionally take endings identical to masculine adjectives ending in *i* in all of the above forms, apart from those of nominative-accusative (*Aṣṭādhyāyī* 7.1.74). Thus we have:

- शुचये and शुचिने (४. एक०)
- शुचेः and शुचिनः (५-६० एक०)
- शुचौ and शुचिनि (७. एक०)
- शुच्योः and शुचिनोः (६-७० द्विव०)

	एकवचने	द्विवचने	बहुवचने
प्रथमा	गतिः	गती	गतयः
द्वितीया	गतिम्	गती	गतीः
तृतीया	गत्या	गतिभ्याम्	गतिभिः
चतुर्थी	गतये, गत्यै	गतिभ्याम्	गतिभ्यः
पञ्चमी	गतेः, गत्याः	गतिभ्याम्	गतिभ्यः
षष्ठी	गतेः, गत्याः	गत्योः	गतीनाम्
सप्तमी	गतौ, गत्याम्	गत्योः	गतिषु

Because the feminine stems in *-i* optionally belong to the *nadī* class of stems, they are subject to a number of special rules. In particular, in the dative, ablative–genitive, and locative cases of the singular, they can take either the same endings as masculine and neuter stems in *-i*, that is, the endings triggered by membership in the class षि (listed first in the table above), or the “augmented” endings of feminine stems (*-ai*, *-āḥ*, *-ām*) triggered by membership in the class नदी; see the section on *ī*-stem nouns below.

The inflection of a few words with a stem in *i* is somewhat irregular. Notes on the inflection of पति- and सखि- follow.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	पतिः	पत्यौ	पतयः
द्वितीया	पतिम्	पत्यौ	पतीन्
तृतीया	पत्या	पतिभ्याम्	पतिभिः
चतुर्थी	पत्ये	पतिभ्याम्	पतिभ्यः
पञ्चमी	पत्युः	पतिभ्याम्	पतिभ्यः
षष्ठी	पत्युः	पत्योः	पतीनाम्
सप्तमी	पत्यौ	पत्योः	पतिषु
सम्बोधनम्	पते	पत्यौ	पतयः

The stem पति- differs from most of the other nominal stems in *i* in that the endings of the “weak” cases are generally added directly onto the stem, with the vowel in its “basic” or zero-grade form. Contrast:

- *agnī-n-ā* with *pāti-ā* → पत्या (३. एक०)
 - *agnáy-ē* with *pāti-ē* → पत्ये (४. एक०)
 - *agné-ḥ* with *pāti-uḥ* → पत्युः (५-६. एक०)
- Note that this form takes an irregular ending, identical with the ablative-genitive ending of stems ending in *r*. That ending is underlyingly *-r-s*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सखा	सखायौ	सखायः
द्वितीया	सखायम्	सखायौ	सखीन्
तृतीया	सख्या	सखिभ्याम्	सखिभिः
चतुर्थी	सख्ये	सखिभ्याम्	सखिभ्यः
पञ्चमी	सख्युः	सखिभ्याम्	सखिभ्यः
षष्ठी	सख्युः	सख्योः	सखीनाम्
सप्तमी	सखे	सख्योः	सखिषु
सम्बोधनम्	सखे	सख्यौ	सखायः

The stem सखि- is similar to पति- in that the endings of most of the “weak” cases are added directly to the stem in its “basic” (i.e., zero-grade) form (with the exception of the locative singular, which is exactly the same as the *ghi* declension). It differs from पति-, however, in that the endings of the “strong” cases induce a lengthened grade (*vṛddhiḥ*) of the stem-final vowel.

§II.3. Stems ending in *-u* (उकारान्तानि)

The stems ending in *-u* belong to the षि class, together with those ending in *-i*, and hence they share many features of their declension. One again, the neuters show relatively more influence from the declension of *n*-stem nouns, while feminines have the option of being declined according to the षि rules or according to the नदी rules.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	गुरुः	गुरू	गुरवः
द्वितीया	गुरुम्	गुरू	गुरून्
तृतीया	गुरुणा	गुरुभ्याम्	गुरुभिः
चतुर्थी	गुरवे	गुरुभ्याम्	गुरुभ्यः
पञ्चमी	गुरोः	गुरुभ्याम्	गुरुभ्यः
षष्ठी	गुरोः	गुर्वोः	गुरूनाम्
सप्तमी	गुरौ	गुर्वोः	गुरुषु
सम्बोधनम्	गुरो	गुर्वो	गुरवः

	एकवचने	द्विवचने	बहुवचने
प्रथमा	मधु	मधुनी	मधूनि
द्वितीया	मधुना	मधुभ्याम्	मधुभिः
तृतीया	मधुने	मधुभ्याम्	मधुभ्यः
चतुर्थी	मधुने	मधुभ्याम्	मधुभ्यः
पञ्चमी	मधुनः	मधुभ्याम्	मधुभ्यः
षष्ठी	मधुनः	मधुनोः	मधूनाम्
सप्तमी	मधुनि	मधुनोः	मधुषु

The principal difference between the neuters and the masculines in the *u*-stem declension, exactly as in the *i*-stem declension, is that the neuters exhibit more of an influence from the declension of *n*-stem nouns. That is to say, before all of the case suffixes that begin with a vowel, these forms are declined as if their stem is not *-u* but *-un*.

However, as with neuter adjectives in *i*, neuter adjectives in *u* can take endings identical to masculine adjectives ending in *u* in all of the above forms, apart from those of nominative-accusative:

- मृदवे and मृदुने (४. एक०)
- मृदोः and मृदुनः (५-६. एक०)
- मृदौ and मृदुनि (७. एक०)
- मृद्वोः and मृदुनोः (६-७. द्वि०)

	एकवचने	द्विवचने	बहुवचने
प्रथमा	धेतुः	धेनू	धेनवः
द्वितीया	धेतुम्	धेनू	धेनून्
तृतीया	धेन्वा	धेतुभ्याम्	धेतुभिः
चतुर्थी	धेनवे, धेन्वै	धेतुभ्याम्	धेतुभ्यः
पञ्चमी	धेनोः, धेन्वाः	धेतुभ्याम्	धेतुभ्यः
षष्ठी	धेनोः, धेन्वाः	धेन्वोः	धेनूनाम्
सप्तमी	धेनौ, धेन्वाम्	धेन्वोः	धेतुषु
सम्बोधनम्	धेनो	धेनू	धेनवः

§II.4. Stems ending in *-ā* (आकारान्तानि)

All stems ending in *ā* are feminine. This class includes all of the words formed with the feminine stem forming suffix *ā*, and hence it includes many nominal stems that corre-

spond to a masculine/neuter stem ending in *a*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सेना	सेने	सेनाः
द्वितीया	सेनाम्	सेने	सेनाः
तृतीया	सेनया	सेनाभ्याम्	सेनाभिः
चतुर्थी	सेनायै	सेनाभ्याम्	सेनाभ्यः
पञ्चमी	सेनायाः	सेनाभ्याम्	सेनाभ्यः
षष्ठी	सेनायाः	सेनयोः	सेनानाम्
सप्तमी	सेनायाम्	सेनयोः	सेनासु
सम्बोधनम्	सेने	सेने	सेनाः

One particularity of the \bar{a} -stem declension is the appearance of an augment $y\bar{a}$ (technically called यद् by Pāṇini) between the stem and some endings, namely those of the dative, ablative, genitive, and locative singular (i.e., those endings that Pāṇini teaches with the *anubandha* \bar{N} , viz. $N\bar{e}$, $NasI$, Nas and $\bar{N}i$). See *Aṣṭādhyāyī* 7.1.113

NOTE: This declension corresponds closely to Latin nouns like *mensa* and Greek nouns like $\chi\acute{o}\rho\alpha$. Historically, the augment $y\bar{a}$ appears to be due to the influence of feminine nominals ending in $-\bar{i}$, where $y\bar{a}$ (* $-yeh_2$) is one possible form the stem-forming suffix $-\bar{i}$ (* $-ih_2-$).

§11.5. Stems ending in $-\bar{i}$ (ईकारान्तानि)

All of these stems are feminine, and many are formed with a suffix $\bar{N}iP$ that produces feminine adjectives.

There is an important distinction between one class of feminine stems in $-\bar{i}$, mostly un-derived stems, and another that is mostly made of derived nominal stems (see feminine stem forming suffixes), which Pāṇini calls *nadī*. The underived class takes the default

nominal endings, and has been exemplified above with the noun धी-. The derived class is inflected as follows:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	नदी	नद्यौ	नद्यः
द्वितीया	नदीम्	नद्यौ	नदीः
तृतीया	नद्या	नदीभ्याम्	नदीभिः
चतुर्थी	नद्यै	नदीभ्याम्	नदीभ्यः
पञ्चमी	नद्याः	नदीभ्याम्	नदीभ्यः
षष्ठी	नद्याः	नद्योः	नदीनाम्
सप्तमी	नद्याम्	नद्योः	नदीषु
सम्बोधनम्	नदि	नद्यौ	नद्यः

One particularity of the declension of nouns of the *nadī* class is that they take the augment आट् between the stem (प्रातिपदिकम्) and certain declensional endings, namely, those that Pāṇini teaches with the *anubandha* \dot{N} ($\dot{N}\bar{e}$, $\dot{N}asI$, $\dot{N}as$, and $\dot{N}\bar{i}$); see *Aṣṭādhyāyī* 7.3.112.

Here we may also refer to the declension of the word *strī-* “woman,” but which has aspects of the declension of both underived and derived stems: like radical stems in \bar{i} , its stem becomes *iy-* before endings that begin with a vowel (optionally so in the accusative singular and plural), but like derivative stems in \bar{i} , it takes the augment $\bar{a}T$ before case-suffixes marked with a \dot{N} . Hence its paradigm is as follows:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	स्त्री	स्त्रियौ	स्त्रियः
द्वितीया	स्त्रियम्, स्त्रीम्	स्त्रियौ	स्त्रियः, स्त्रीः
तृतीया	स्त्रिया	स्त्रीभ्याम्	स्त्रीभिः
चतुर्थी	स्त्रियै	स्त्रीभ्याम्	स्त्रीभ्यः
पञ्चमी	स्त्रियाः	स्त्रीभ्याम्	स्त्रीभ्यः
षष्ठी	स्त्रियाः	स्त्रियोः	स्त्रीणाम्
सप्तमी	स्त्रियाम्	स्त्रियोः	स्त्रीषु
सम्बोधनम्	स्त्रि	स्त्रियौ	स्त्रियः

§II.6. Stems ending in $-ū$ (ऊकारान्तानि)

Most stems ending in $-ū$ belong to the *nadī* class, and hence their declension is almost identical to that of stems ending in $-ī$ like देवी- and नदी-. The only difference is that whereas $-ī$ -stems form the nominative singular without a suffix, $-ū$ -stems form the nominative singular with the default suffix sU (i.e., h).

All nominal stems belonging to this class are feminine.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	वधूः	वध्वौ	वध्वः
द्वितीया	वधूम्	वध्वौ	वधूः
तृतीया	वध्वा	वधूभ्याम्	वधूभिः
चतुर्थी	वध्वै	वधूभ्याम्	वधूभ्यः
पञ्चमी	वध्वाः	वधूभ्याम्	वधूभ्यः
षष्ठी	वध्वाः	वध्वोः	वधूनाम्
सप्तमी	वध्वाम्	वध्वोः	वधूषु
सम्बोधनम्	वधु	वध्वौ	वध्वः

§11.7. Stems ending in *-r* (ऋकारान्तानि)

These stems generally fall into one of two *semantic* categories: (1) nouns which express relations (such as mother, father, sister, brother, etc.), and (2) adjectives which express the agent of a verb, as well as a handful of other words. Nominal forms of the second type are used in the so-called periphrastic future (छट्).

In *morphological* terms, however, there is a distinction between (1) nouns which take the full grade (गुणः) of the stem-final vowel in the strong cases; and (2) nouns which take the lengthened grade (वृद्धिः) of the stem-final vowel in the strong cases. All agent nouns belong to the second category. Most nouns of relationship belong to the first category, with the exception of नस्- “grandson” and स्वस्- “sister,” and the word स्त्- “star.”

Paradigms of the first class of nominal stems ending in *r*, i.e., those which take a full grade vowel of the stem in the strong cases, are presented first.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	पिता	पितरौ	पितरः
द्वितीया	पितरम्	पितरौ	पित्रून्
तृतीया	पित्रा	पितृभ्याम्	पितृभिः
चतुर्थी	पित्रे	पितृभ्याम्	पितृभ्यः
पञ्चमी	पितुः	पितृभ्याम्	पितृभ्यः
षष्ठी	पितुः	पित्रोः	पित्रूणाम्
सप्तमी	पितरि	पित्रोः	पितृषु
सम्बोधनम्	पितर्	पितरौ	पितरः

	एकवचने	द्विवचने	बहुवचने
प्रथमा	माता	मातरौ	मातरः
द्वितीया	मातरम्	मातरौ	मात्रूः
तृतीया	मात्रा	मातृभ्याम्	मातृभिः
चतुर्थी	मात्रे	मातृभ्याम्	मातृभ्यः
पञ्चमी	मातुः	मातृभ्याम्	मातृभ्यः
षष्ठी	मातुः	मात्रोः	मात्रूणाम्
सप्तमी	मातरि	मात्रोः	मातृषु
सम्बोधनम्	मातर्	मातरौ	मातरः

Paradigms of the second class of nominal stems ending in *r*, which take the lengthened grade in the strong cases, follow:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	दाता	दातारौ	दातारः
द्वितीया	दातारम्	दातारौ	दात्रून्
तृतीया	दात्रा	दातृभ्याम्	दातृभिः
चतुर्थी	दात्रे	दातृभ्याम्	दातृभ्यः
पञ्चमी	दातुः	दातृभ्याम्	दातृभ्यः
षष्ठी	दातुः	दात्रोः	दात्रूणाम्
सप्तमी	दातरि	दात्रोः	दातृषु
सम्बोधनम्	दातर्	दातारौ	दातारः

	एकवचने	द्विवचने	बहुवचने
प्रथमा	स्वसा	स्वसारौ	स्वसारः
द्वितीया	स्वसारम्	स्वसारौ	स्वस्रुः
तृतीया	स्वस्रा	स्वसृभ्याम्	स्वसृभिः
चतुर्थी	स्वस्रे	स्वसृभ्याम्	स्वसृभ्यः
पञ्चमी	स्वसुः	स्वसृभ्याम्	स्वसृभ्यः
षष्ठी	स्वसुः	स्वस्रोः	स्वस्रुणाम्
सप्तमी	स्वसरि	स्वस्रोः	स्वसृषु
सम्बोधनम्	स्वसर्	स्वसारौ	स्वसारः

	एकवचने	द्विवचने	बहुवचने
प्रथमा	दातृ	दातृणी	दातृणि
द्वितीया	दातृ	दातृणी	दातृणि
तृतीया	दातृणा, दात्रा	दातृभ्याम्	दातृभिः
चतुर्थी	दातृणे, दात्रे	दातृभ्याम्	दातृभ्यः
पञ्चमी	दातृणः, दातुः	दातृभ्याम्	दातृभ्यः
षष्ठी	दातृणः, दातुः	दात्रोः	दात्रुणाम्
सप्तमी	दातृणि, दातरि	दात्रोः	दातृषु
सम्बोधनम्	दातृ, दातर	दातरौ	दातारः

The neuter has the same peculiarities as nominal stems ending in *i* and *u*, namely:

1. it inserts the letter *n* between the stem and declensional endings that begin with a vowel;
2. outside of the nominative-accusative, it may take the properly neuter endings, or it may take the same endings as the masculine-feminine.

§II.8. Stems ending in diphthongs

A number of nouns have a stem that ends in a diphthong (*ō*, *ai*, or *au*; no stems in *ē* are found). The main distinction is between stems that show vowel gradation in the root syllable, like गो- m.f. “cow” and चो- m. “sky,” and those that do not, like रै- f. “wealth” and नौ- f. “boat.”

Non-gradational stems like नौ- are straightforward, in that they take the regular endings, with the *sandhi* variants *nau-* before consonants and *nāv-* before vowels.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	नौः	नावौ	नावः
द्वितीया	नावम्	नावौ	नावः
तृतीया	नावा	नौभ्याम्	नौभिः
चतुर्थी	नावे	नौभ्याम्	नौभ्यः
पञ्चमी	नावः	नौभ्याम्	नौभ्यः
षष्ठी	नावः	नावोः	नावाम्
सप्तमी	नावि	नावोः	नौषु
सम्बोधनम्	नौः	नावौ	नावः

	एकवचने	द्विवचने	बहुवचने
प्रथमा	राः	रायौ	रायः
द्वितीया	रायम्	रायौ	रायः
तृतीया	राया	राभ्याम्	राभिः
चतुर्थी	राये	राभ्याम्	राभ्यः
पञ्चमी	रायः	राभ्याम्	राभ्यः
षष्ठी	रायः	रायोः	रायाम्
सप्तमी	रायि	रायोः	रासु
सम्बोधनम्	राः	रायौ	रायः

NOTE: The word रै- is somewhat different from रौ because the stem forms are not *rai-* and *rāy-* but *rā-* and *ray-*. This is because the *y* is not actually part of the radical syllable, but is a glide inserted between the root syllable and the ending when the latter begins with a vowel. The inherited form of this word was **reh₁-*, and hence the stem ended synchronically in a consonant, which was replaced by the glide *y* in Sanskrit (compare Latin *rēs*).

Stems that feature vowel gradation typically show the full or lengthened grade in the “strong” forms (nominative-accusative singular and dual, and nominative plural), and elsewhere have weaker forms. In the case of गौ, the strong form is *gau-* (**g₁ōw-*, or perhaps **g₁eh₃w-*), and the weak form is *gō-* (before consonants) and *gav-* (before vowels), i.e., **g₁ow-*. In the case of द्यौ-, the strong forms are made with *dyau-* (**dyēw-*), and the weak forms are made with *dyu-* (before consonants) and *div-* (before vowels), i.e., **diw-* or **dyu-*. The accusative singular in both cases is formed by omitting the final glide of the radical syllable before the *m* of the ending.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	द्यौः	द्यावौ	द्यावः, दिवः
द्वितीया	दिवम्, द्याम्	द्यावौ	द्यून, दिवः
तृतीया	दिवा	द्युभ्याम्	द्युभिः
चतुर्थी	दिवे	द्युभ्याम्	द्युभ्यः
पञ्चमी	दिवः	द्युभ्याम्	द्युभ्यः
षष्ठी	दिवः	दिवोः	दिवाम्
सप्तमी	दिवि	दिवोः	द्युषु
सम्बोधनम्	द्यौः	द्यावौ	द्यावः

NOTE: This noun has been split into two by later Sanskrit grammarians (who are followed by the less empirically-minded European grammarians), viz. *div-* (providing the weak forms in the paradigm above) and *dyō-* (providing the strong forms). This is purely for derivational reasons, since they clearly constitute a single paradigm. Uncertainties of vowel gradation led to the use of multiple forms in certain cases, as noted above. The word is cognate with Greek *Zeús* and Latin *Iu-ppiter*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	गौः	गावौ	गावः
द्वितीया	गाम्	गावौ	गाः
तृतीया	गवा	गोभ्याम्	गोभिः
चतुर्थी	गवे	गोभ्याम्	गोभ्यः
पञ्चमी	गोः	गोभ्याम्	गोभ्यः
षष्ठी	गोः	गवोः	गवाम्
सप्तमी	गवि	गवोः	गोषु
सम्बोधनम्	गौः	गावौ	गावः

§12. Stems ending in consonants (हलन्तानि)

Although some stems ending in a vowel are “changeable,” in that the endings of different cases are affixed to different grades of the stem-final vowel, they are usually considered to be “unchangeable.” In contrast, many stems ending in a consonant are more clearly “changeable,” in that the endings are affixed to different forms of the stem.

We can thus distinguish between “strong” and “weak” versions of the stem before certain endings, and in some cases, between “strong,” “middle,” and “weak” versions of the stem.

The “strong” version of the stem occurs before the inflectional endings that Pāṇini calls सर्वनामस्थानम्. These are the nominative and accusative singular, the nominative and accusative dual, and the nominative plural (i.e., the endings comprised in Pāṇini’s abbreviation सुट्).

The “weak” version of the stem occurs before all of the other inflectional endings. But there is often a distinction between the “weak” form of the stem before inflectional endings beginning with consonant—the so-called “word” or *padam* endings—and the “weak” form before those endings beginning with a vowel. Sometimes grammars refer to the form of the stem before consonant-initial endings as the “middle” form of the stem, and reserve the term “weak” for the form of the stem before vowel-initial endings.

१० एक०	१० द्वि०	१० बहु०
२० एक०	२० द्वि०	२० बहु०
३० एक०	३० द्वि०	३० बहु०
४० एक०	४० द्वि०	४० बहु०
५० एक०	५० द्वि०	५० बहु०
६० एक०	६० द्वि०	६० बहु०
७० एक०	७० द्वि०	७० बहु०

§12.1. Stems ending in -s

The stems that end in -s (or -ṣ) fall into **three** categories:

1. neuter nouns, which are usually primary derivatives of verbs (representing *nomina concreta*), such as मनस्- “mind,” हविष्- “oblation,” and आयुष्- “life.”
2. comparative adjectives, which are formed with the suffix -yas-;
3. perfect participles, which are formed with the suffix -vāms-/-vat-/-uṣ-

These three types will be presented in turn.

In the case of neuter nouns, the stem *does not change* with the endings.

NOTE: An apparent exception is the nominative-accusative plural, in which the final vowel of the stem is lengthened and nasalized before the ending -i. However, Pāṇini considers this to be a general effect that the neuter nominative-accusative ending (which he calls *Ṣi*) has on a preceding stem.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	मनः	मनसी	मनांसि
द्वितीया	मनः	मनसी	मनांसि
तृतीया	मनसा	मनोभ्याम्	मनोभिः
चतुर्थी	मनसे	मनोभ्याम्	मनोभ्यः
पञ्चमी	मनसः	मनोभ्याम्	मनोभ्यः
षष्ठी	मनसः	मनसोः	मनसाम्
सप्तमी	मनसि	मनसोः	मनःसु
सम्बोधनम्	मनः	मनसी	मनांसि

The declension of stems in *-iṣ* (e.g., हविः) and *-uṣ* (e.g., आयुः) is entirely parallel, except, of course, with the transformation of the stem-final *s* to *ṣ* before endings beginning with a vowel.

These nouns may occur as the final member of an adjectival (i.e., *bahuvrīhiḥ*) compound. When they agree with a masculine or feminine noun, they are inflected in the same way as in the neuter, except in the nominative and accusative cases, as shown below.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सुमनाः	सुमनसौ	सुमनसः
द्वितीया	सुमनसम्	सुमनसौ	सुमनसः

The next major class of nominal stems ending in *-s* is represented by comparative adjectives, which are formed with the suffix *-yas-* (Pāṇini's *īyasUN*). In the neuter, the stem ends in *-yas-* throughout (except in the nominative-accusative plural, where, as usual, the case-ending *Ṣi* causes lengthening and nasalization of the preceding vowel). In the masculine, the stem ends in *-yāms-* in the “strong” cases (सर्वनामस्थानम्) and *-yas-* in the “weak” cases. The corresponding feminine is formed by adding the suffix *ī* (*ṆīP*) to the version of the stem ending in *-yas-*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	श्रेयान् / श्रेयः	श्रेयांसौ / श्रेयसी	श्रेयांसः / श्रेयांसि
द्वितीया	श्रेयांसम् / श्रेयः	श्रेयांसौ / श्रेयसी	श्रेयसः / श्रेयांसि
तृतीया	श्रेयसा	श्रेयोभ्याम्	श्रेयोभिः
चतुर्थी	श्रेयसे	श्रेयोभ्याम्	श्रेयोभ्यः
पञ्चमी	श्रेयसः	श्रेयोभ्याम्	श्रेयोभ्यः
षष्ठी	श्रेयसः	श्रेयसोः	श्रेयसाम्
सप्तमी	श्रेयसि	श्रेयसोः	श्रेयःसु
सम्बोधनम्	श्रेयन् / श्रेयः	श्रेयांसौ / श्रेयसी	श्रेयांसः / श्रेयांसि

Finally, the participle of the perfect stem, which Pāṇini called क्त्सु. The suffix has different forms, but in this case the differences are quite radical:

- In the neuter, the “underlying” form of the stem can be thought of as *-vas-* in the strong cases (सर्वनामस्थानम्) and the weak cases beginning with a consonant (the so-called “*pada* endings” or “middle cases”), and as *-uṣ-* in the remaining weak cases (i.e., those beginning with a vowel). Thus we can distinguish between a full-grade suffix in the “strong” and “middle” cases, and a zero-grade suffix in the “weak” cases. The full-grade form, however, has been replaced with *-vat-* in all cases apart from the nominative-accusative plural.
- In the masculine, before the “strong” cases (सर्वनामस्थानम्), the form of the stem is *-vāms-*, and among the remaining cases, it takes the form *-vad-* before the “middle” cases (i.e., those beginning with a consonant) and *-uṣ-* before the “weak” cases (i.e., those beginning with a vowel), just as in the neuter.

Here is the neuter inflection of such a stem:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	चकृवान्, चकृवत्	चकृवांसौ, चक्रुषी	चकृवांसः, चकृवांसि
द्वितीया	चकृवांसम्, चकृवत्	चकृवांसौ, चक्रुषी	चक्रुषः, चकृवांसि
तृतीया	चक्रुषा	चकृवद्भ्याम्	चकृवद्भिः
चतुर्थी	चक्रुषे	चकृवद्भ्याम्	चकृवद्भ्यः
पञ्चमी	चक्रुषः	चकृवद्भ्याम्	चकृवद्भ्यः
षष्ठी	चक्रुषः	चक्रुषोः	चक्रुषाम्
सप्तमी	चक्रुषि	चक्रुषोः	चकृवत्सु
सम्बोधनम्	चकृवन, चकृवत्	चकृवांसौ, चक्रुषी	चकृवांसः, चकृवांसि

The noun *pums-* m. “human, man” is similar to perfect participles:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	पुमान्	पुमांसौ	पुमांसः
द्वितीया	पुमांसम्	पुमांसौ	पुंसः
तृतीया	पुंसा	पुम्भ्याम्	पुम्भिः
चतुर्थी	पुंसे	पुम्भ्याम्	पुम्भ्यः
पञ्चमी	पुंसः	पुम्भ्याम्	पुम्भ्यः
षष्ठी	पुंसः	पुंसोः	पुंसाम्
सप्तमी	पुंसि	पुंसोः	पुंसु
सम्बोधनम्	पुमन्	पुमांसौ	पुमांसः

§12.2. Stems ending in *-n*

The stems that end in *-n* include:

- i. masculine and neuter stems derived with the suffixes *-an*, *-man*, or *-van*;

2. adjectival stems (in the masculine and neuter) derived with the suffix *-in*.

Stems that end in *-n* generally have *three* forms:

- the **strong** form of the stem, which occurs before the so-called “strong” (सर्वनामस्थानम्) case endings;
- the **weak** form of the stem, which occurs before the other case endings, with the following distinction sometimes being applicable:
 - the **middle** cases are those in which the case-suffix begins with a consonant, and
 - the **weakest** cases are those in which the case-suffix begins with a vowel.

As noted above, these different forms of the stem are conditioned by the accentual properties of the endings. In general, the final syllable of the stem will stand in the **full grade** form in its “strong” form, i.e., before the unaccented endings of the nominative and accusative singular, nominative and accusative dual, and nominative plural (also accusative plural for the neuter), whereas it will stand in the **zero grade** form before the other endings.

We will begin by considering the paradigms of masculine and neuter stems in *-an*, including those formed with the suffixes *-man* and *-van*. All of these stems share the same *endings*; they differ merely in the gradation of the stem before those endings. The endings are the *standard endings* taught in *Aṣṭādhyāyī* 4.1.2 and discussed above.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	राजा	राजानौ	राजानः
द्वितीया	राजानम्	राजानौ	राज्ञः
तृतीया	राज्ञा	राजभ्याम्	राजभिः
चतुर्थी	राज्ञे	राजभ्याम्	राजभ्यः
पञ्चमी	राज्ञाः	राजभ्याम्	राजभ्यः
षष्ठी	राज्ञः	राज्ञोः	राज्ञाम्
सप्तमी	राज्ञि, राजनि	राज्ञोः	राजसु
सम्बोधनम्	राजन्	राजानौ	राजानः

Observations:

- The *strong* form of the stem is राजान्-, with a *lengthened* grade of the stem-final syllable. (See below for a historical explanation of this form.)
- The *weak* form of the stem—that is, the form before accented declensional endings that begin with a vowel—is राज्ञ-, which represents the *zero* grade of the stem-final syllable. The *n* is palatalized by its contact with the palatal consonant *j*.
- The *middle* form of the stem—that is, the form before accented declensional endings that begin with a consonant—is राज्-, which similarly represents the *zero* grade of the stem-final syllable. The final *a* in this case is a reflex of a historical vocalic **-ŋ-* (see below).
- Finally, the nominative singular is राजा, rather than ***rājān* (which is what we would expect from *rājān + sU*).

NOTE: The suffix of masculine nouns of this class was historically **-on-* in the full grade and **-n-* in the zero grade, which had both vocalic (**-ŋ-*) and consonantal (**-n-*) forms depending on whether the declensional suffix that followed began with a consonant or vowel, respectively.

The lengthened grade of the “strong” stem is because of *Brugmann’s Law*, according to which an **o* in an open syllable (i.e., an **o* followed by *one* consonant and then a vowel within the same word) was lengthened in Proto-Indo-Iranian. Hence:

PIE	Brugmann’s Law	Sanskrit
* <i>h₁rēǵ-on-m</i>	* <i>rāj-ān-am</i>	<i>rāj-ān-am</i>

Like राज- is inflected आत्म-, with one major difference: whereas, in the paradigm of राज-, the *a* between the radical element *rāj* and the *-n* of the stem-final syllable is generally lost in the weak cases, in the paradigm of आत्म-, the *a* is retained in all of the weak cases, because otherwise we would have an inadmissible sequence of consonants (**āt-m-n-*).

	एकवचने	द्विवचने	बहुवचने
प्रथमा	आत्मा	आत्मानौ	आत्मानः
द्वितीया	आत्मानम्	आत्मानौ	आत्मनः
तृतीया	आत्मना	आत्मभ्याम्	आत्मभिः
चतुर्थी	आत्मने	आत्मभ्याम्	आत्मभ्यः
पञ्चमी	आत्मनः	आत्मभ्याम्	आत्मभ्यः
षष्ठी	आत्मनः	आत्मनोः	आत्मनाम्
सप्तमी	आत्मनि	आत्मनोः	आत्मसु
सम्बोधनम्	आत्मन्	आत्मानौ	आत्मानः

	एकवचने	द्विवचने	बहुवचने
प्रथमा	नाम	नाम्नी, नामनी	नामानि
द्वितीया	नाम	नाम्नी, नामनी	नामानि
तृतीया	नाम्ना	नामभ्याम्	नामभिः
चतुर्थी	नाम्ने	नामभ्याम्	नामभ्यः
पञ्चमी	नाम्नः	नामभ्याम्	नामभ्यः
षष्ठी	नाम्नः	नाम्नोः	नाम्नाम्
सप्तमी	नाम्नि, नाम्नानि	नाम्नोः	नामसु
सम्बोधनम्	नामन्, नाम	नाम्नी, नामनी	नामानि

A class of neuter nouns exemplified by *akṣi-* n. “eye” has two stems, one ending in *-i* used in the strong cases, and one ending in *-n* used in the weak cases. The nouns inflected this way are अक्षि-/अक्षन्- “eye,” अस्थि-/अस्थन्- “bone,” दधि-/दधन्- “curds,” and सक्थि-/सक्थन्- “thigh.”

	एकवचने	द्विवचने	बहुवचने
प्रथमा	अक्षि	अक्षिणी	अक्षीणि
द्वितीया	अक्षि	अक्षिणी	अक्षीणि
तृतीया	अक्ष्णा	अक्ष्णभ्याम्	अक्षिभिः
चतुर्थी	अक्ष्णे	अक्ष्णभ्याम्	अक्षिभ्यः
पञ्चमी	अक्ष्णः	अक्ष्णभ्याम्	अक्षिभ्यः
षष्ठी	अक्ष्णः	अक्ष्णोः	अक्ष्णाम्
सप्तमी	अक्षिणे	अक्ष्णोः	अक्षिषु
सम्बोधनम्	अक्षि	अक्षिणी	अक्षीणि

§12.3. Stems ending in *-t* and *-d*

Stems that end in *-t* include various classes of nouns and adjectives in Sanskrit, including *root nouns*, *present participles*, and *possessive adjectives* formed with the suffixes मत्तुप् and वत्तुप्.

Stems that end in *-d* are much rarer, but they can be considered under the same heading.

The category of **root nouns** includes some archaic nouns that differentiate between a strong and a weak stem, like पद्- “foot,” as well as many nouns that use a single stem throughout, such as सुहृद्- “friend.”

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सुहृद्	सुहृदौ	सुहृदः
द्वितीया	सुहृदम्	सुहृदौ	सुहृदः
तृतीया	सुहृदा	सुहृद्भ्याम्	सुहृद्भिः
चतुर्थी	सुहृदे	सुहृद्भ्याम्	सुहृद्भ्यः
पञ्चमी	सुहृदः	सुहृद्भ्याम्	सुहृद्भ्यः
षष्ठी	सुहृदः	सुहृदोः	सुहृदाम्
सप्तमी	सुहृदि	सुहृदोः	सुहृत्सु
सम्बोधनम्	सुहृत्	सुहृदौ	सुहृदः

Exactly parallel to stems ending in *-d* with an unchanging stem are stems ending in *-t* with an unchanging stem. These include many *upapada-tatpuruṣaḥ* compounds, which, when the suffix क्तिप् is used, insert the augment तुक् at the end of a light verbal root. As an example, consult भूमृत्- m. ‘mountain’ (from √भृ ‘lift, bear’ with भू- ‘the earth’).

	एकवचने	द्विवचने	बहुवचने
प्रथमा	भूमृत्	भूमृतौ	भूमृतः
द्वितीया	भूमृतम्	भूमृतौ	भूमृतः
तृतीया	भूमृताब्	भूमृद्भ्याम्	भूमृद्भिः
चतुर्थी	भूमृते	भूमृद्भ्याम्	भूमृद्भ्यः
पञ्चमी	भूमृतः	भूमृद्भ्याम्	भूमृद्भ्यः
षष्ठी	भूमृतः	भूमृतोः	भूमृताम्
सप्तमी	भूमृति	भूमृतोः	भूमृत्सु
सम्बोधनम्	भूमृत्	भूमृतौ	भूमृतौ

Most of the other stems in *-t* are formed using a suffix that exhibits vowel-gradation. The *strong stem* will usually end in *-ant*, and the *weak stem* in *-at*.

For stems derived using the possessive suffixes मत्तुप् and वत्तुप्, the declension is as follows:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	धनवान्, धनवत्	धनवन्तौ, धनवती	धनवन्तः, धनवन्ति
द्वितीया	धनवन्तम्, धनवत्	धनवन्तौ, धनवती	धनवतः, धनवन्ति
तृतीया	धनवता	धनवद्भ्याम्	धनवद्भिः
चतुर्थी	धनवते	धनवद्भ्याम्	धनवद्भ्यः
पञ्चमी	धनवतः	धनवद्भ्याम्	धनवद्भ्यः
षष्ठी	धनवतः	धनवतोः	धनवताम्
सप्तमी	धनवति	धनवतोः	धनवत्सु
सम्बोधनम्	धनवान्, धनवत्	धनवन्तौ, धनवती	धनवन्तः, धनवन्ति

Note that the nominative singular masculine of stems formed with the suffixes मत्तुप् and वत्तुप्, as well as of other stems such as भवत्- “you,” has a *long vowel*, in contrast to the declension of present participles.

The other main class of stems ending in *-t* are *present participles*, that is, verbal adjectives formed from the present stem. In the *parasmaipadām*, such adjectives are formed with a suffix that Pāṇini calls शतृ. (In the *ātmanēpadām*, they are formed with a different suffix, शानच्, and such forms are inflected like regular *a*-stem nominals.) This suffix शतृ forms nominal stems whose inflection is almost identical to the inflection of stems formed with मतुप् and वतुप्. The difference is in the nominative singular of the masculine, where the ending, as shown below, is not *-ān* but *-an*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	स्पृषन्, स्पृषत्	स्पृषन्तौ, स्पृषन्ती	स्पृषन्तः, स्पृषन्ति
द्वितीया	स्पृषन्तम्, स्पृषन्त्	स्पृषन्तौ, स्पृषन्ती	स्पृषतः, स्पृषन्ति
तृतीया	स्पृषता	स्पृषद्भ्याम्	स्पृषद्भिः
चतुर्थी	स्पृषते	स्पृषद्भ्याम्	स्पृषद्भ्यः
पञ्चमी	स्पृषतः	स्पृषद्भ्याम्	स्पृषद्भ्यः
षष्ठी	स्पृषतः	स्पृषतोः	स्पृषताम्
सप्तमी	स्पृषति	स्पृषतोः	स्पृषत्सु
सम्बोधनम्	स्पृषन्, स्पृषत्	स्पृषन्तौ, स्पृषन्ती	स्पृषन्तः, स्पृषन्ति

NOTE: Be careful not to confuse forms of the participle with homophonous forms of the finite verb, such as स्पृषति and स्पृषन्ति!

One exception to this general pattern is furnished by participles of verbs belonging to the third, or reduplicating, class. In these words, the weak stem is used throughout the paradigm, even in the strong cases (apart from the nominative-accusative-vocative of the neuter plural, where the strong form of the stem may optionally be used).

	एकवचने	द्विवचने	बहुवचने
प्रथमा	ददत्	ददतौ, ददती	ददतः, ददति/ददन्ति
द्वितीया	ददतम्, ददत्	ददतौ, ददती	ददतः, ददति/ददन्ति
तृतीया	ददता	ददद्भ्याम्	ददद्भिः
चतुर्थी	ददते	ददद्भ्याम्	ददद्भ्यः
पञ्चमी	ददतः	ददद्भ्याम्	ददद्भ्यः
षष्ठी	ददतः	ददतोः	ददताम्
सप्तमी	ददति	ददतोः	ददत्सु
सम्बोधनम्	ददत्	ददन्तौ, ददती	ददतः, ददन्ति/ददति

The noun *pāth-* m. “path” synchronically ends in *tb*, but historically ended in a laryngeal consonant (**h₂*), which resulted in a pattern of vowel gradation that looks rather irregular:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	पन्थाः	पन्थानौ	पन्थानः (RV पन्थाः)
द्वितीया	पन्थानम् (RV पन्थाम्)	पन्थानौ	पथः
तृतीया	पथा	पथिभ्याम्	पथिभिः
चतुर्थी	पथे	पथिभ्याम्	पथिभ्यः
पञ्चमी	पथः	पथिभ्याम्	पथिभ्यः
षष्ठी	पथः	पथ॑ः	पथाम्
सप्तमी	पथि	पथ॑ः	पथिषु
सम्बोधनम्	पन्थाः	पन्थानौ	पन्थानः

At the end of a compound, the stem is पथ-.

NOTE: The pattern of this noun is actually very straightforward from a historical perspective. The stem can be considered a combination of the elements **pent-eh₂-*. In the strong cases both elements received the full grade. In the weak cases neither element of the stem received the full

grade, and instead the accent and full-grade vowel appeared on the ending (e.g., **pnt-h₂-eh₁* for *pathā*).

§12.4. Stems ending in palatals

This category, once again, includes stems that exhibit gradation and stems that do not. We will begin with the latter category, which is quite straightforward. In nominal declension, palatals generally become velars in internal sandhi:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	दिक्	दिशौ	दिशः
द्वितीया	दिशम्	दिशौ	दिशः
तृतीया	दिशा	दिग्भ्याम्	दिग्भिः
चतुर्थी	दिशे	दिग्भ्याम्	दिग्भ्यः
पञ्चमी	दिशः	दिग्भ्याम्	दिग्भ्यः
षष्ठी	दिशः	दिशोः	दिशाम्
सप्तमी	दिशि	दिशोः	दिक्षु
सम्बोधनम्	दिक्	दिशौ	दिशः

Similarly inflected are stems that end in the word -दृश्-, including adjectives of comparison, तादृश्- 'like that,' ईदृश्- 'like this.'

The relatively common set of nominal derivatives formed from the root √अञ् 'turn' have an idiosyncratic declension that reflects both (a) the erstwhile presence of a laryngeal at the beginning of the root, and (b) the general pattern of vowel gradation, with full grade of the root in the strong forms, and zero grade in the weak forms.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	प्राङ्, प्राक्	प्राञ्चौ, प्राची	प्राञ्चः, प्राञ्चि
द्वितीया	प्राञ्चम्, प्राक्	प्राञ्चौ, प्राची	प्राचः, प्राञ्चि
तृतीया	प्राचा	प्राग्भ्याम्	प्राग्भिः
चतुर्थी	प्राचे	प्राग्भ्याम्	प्राग्भ्यः
पञ्चमी	प्राचः	प्राग्भ्याम्	प्राग्भ्यः
षष्ठी	प्राचः	प्राचोः	प्राचाम्
सप्तमी	प्राचि	प्राचोः	प्राक्षु
सम्बोधनम्	प्राङ्, प्राक्	प्राञ्चौ, प्राची	प्राञ्चः, प्राञ्चि

Similar are विष्वञ्च- 'going apart,' अपाञ्च- 'going away,' अवाञ्च- 'turned down,' अर्वाञ्च- 'turned towards,' अधराञ्च- 'turned down.'

The stem प्रत्यञ्च- shows some different vowel alternation:

	एकवचने	द्विवचने	बहुवचने
प्रथमा	प्रत्यङ्, प्रत्यक्	प्रत्यञ्चौ, प्रतीची	प्रत्यञ्चः, प्रत्यञ्चि
द्वितीया	प्रत्यञ्चम्, प्रत्यक्	प्रत्यञ्चौ, प्रतीची	प्रतीचः, प्रत्यञ्चि
तृतीया	प्रतीचा	प्रत्यग्भ्याम्	प्रत्यग्भिः
चतुर्थी	प्रतीचे	प्रत्यग्भ्याम्	प्रत्यग्भ्यः
पञ्चमी	प्रतीचः	प्रत्यग्भ्याम्	प्रत्यग्भ्यः
षष्ठी	प्रतीचः	प्रतीचोः	प्रतीचाम्
सप्तमी	प्रतीचि	प्रतीचोः	प्रतीक्षु
सम्बोधनम्	प्रत्यङ्, प्रत्यक्	प्रत्यञ्चौ, प्रतीची	प्रत्यञ्चः, प्रत्यञ्चि

Similarly inflected are न्यञ्च- 'turned down,' उदञ्च- 'turned up,' and सम्यञ्च- 'turned correctly' (the *i* in this stem is unetymological, presumably after the analogy of न्यञ्च- and प्रत्यञ्च-).

The stem तिर्यञ्च- ‘horizontal’ is somewhat irregular, probably deriving from a conflation of तिरस्- with other forms ending in अञ्च-. Its weak stem is तिरश्च-.

NOTE: The strong form of the root in these stems was originally *Henk̄, which often constituted a separate syllable after the prefix (i.e., *pra-āñcam*, *prati-āñcam*). The weak form was originally *Hk̄, without the nasal, which resulted in (a) the lengthening of a preceding vowel (hence *prāc-*, *pratic-*), in case the preceding sound was a vowel, or (b) the insertion of the vowel -ī-, in case the preceding sound was a consonant. These are the standard effects of Indo-European laryngeals in Sanskrit.

§13. Pronouns

Pronouns are nominal forms whose occasion for use (प्रवृत्तिनिमित्तम्) is to *refer* to something that has either already been mentioned in a given discursive context (a *referent*) or which can be assumed or implied by the same discursive context. For this reason they are often said to “stand in place of” (*pro-*) something that would otherwise be expressed by a nominal form. There are, however, several types of pronouns, in Sanskrit as in English, each of which have different functions within a sentence. This section will be primarily concerned with the *forms* of these pronouns, although notes on their meaning and usage will follow.

The Sanskrit term for a pronoun is सर्वनाम. This stands for a list of pronominal stems which take special endings, namely (Vasu on *Aṣṭādhyāyī* 1.1.27):

- सर्व- “every, all” (Gr. ὅλος, from *solwo-);
- विश्व- “whole, all”;
- उभ- “both”;
- उभय- “both”;
- words formed with the affix *Ḍatara*, as in कतर- “which” (of two);

- words formed with the affix *Ḍatama*, as in क्तम- “which” (of more than two);
- अन्य- “other, different”;
- अन्यतर- “the other” (of two);
- इतर- “other, different” (also formed using the contrastive affix *-tara-*);
- त्वद्- and त्व- “one, several” (only in Vedic texts);
- नेम- “one, the other, half”;
- सम- “any, every” (Gr. *ἀμός*, Eng. *some*);
- सिम- “all, every”;
- त्यद् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc. nom. sg. is स्यः and the fem. nom. sg. is स्या) “that,” a rare demonstrative;
- तद् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc. nom. sg. is सः and the fem. nom. sg. is सा) “that,” the basic demonstrative;
- यद् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc. nom. sg. is यः and the fem. nom. sg. is या) “which,” the relative;
- एतद् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc. nom. sg. is एषः and the fem. nom. sg. is एषा) “this,” the proximate demonstrative;
- इदम् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc. nom. sg. is अयम् and the fem. nom. sg. is इयम्), “this,” another proximate demonstrative;
- अदस् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc.-fem. nom. sg. is असौ), “that,” a distal demonstrative;
- एक- “one, a single”;

- द्वि- “two”;
- युष्मद् “you” (see below);
- अस्मद् “we” (see below);
- the personal pronoun भवत्, which Pāṇini teaches as *bhavatU* “you”;
- किम् (i.e., the forms associated with this neuter nom.-acc. sg. form, of which the masc. nom. sg. is कः and the fem. nom. sg. is का) “what?”, the interrogative pronoun.

The special endings that are added to most सर्वनाम except for the personal pronouns are:

- the ending $-\bar{e}$ rather than $-\bar{a}\bar{h}$ ($\bar{S}\bar{i}$ rather than Jas) in the masc.nom.pl./पुं.प्रथमाबहुः;
- the use of the augment $-sma-$ in several cases of the masculine and neuter singular, namely:
 - $-smai$ ($sma + \bar{N}\bar{e}$) instead of $-\bar{a}ya$ in the masc.-neut.dat.sg./पुं.नपुं.चतुर्थ्येक., according to *Aṣṭādhyāyī* 7.1.14;
 - $-smāt$ ($sma + \bar{N}asI$) instead of $-\bar{a}t$ in the masc.-neut.abl.sg./पुं.नपुं.पञ्चम्येक., according to *Aṣṭādhyāyī* 7.1.15;
 - $-smin$ ($sma + \bar{N}i$) instead of $-\bar{e}in$ in the masc.-neut.loc.sg./पुं.नपुं.सप्तम्येक., according to *Aṣṭādhyāyī* 7.1.15.
- the use of the augment $-syā-$ in several cases of the feminine singular, namely:
 - $-syai$ ($syā + \bar{N}\bar{e}$) instead of $-\bar{a}yai$ in the fem.dat.sg./स्त्री.चतुर्थ्येक.
 - $-syā\bar{h}$ ($syā + \bar{N}as(I)$) instead of $-\bar{a}yā\bar{h}$ in the fem.abl.-gen..sg./स्त्री.पञ्चमीषष्ठ्येक.;
 - $-syām$ ($syā + \bar{N}i$) instead of $-\bar{a}yām$ in the fem.loc..sg./स्त्री.सप्तम्येक..

§13.1. Personal pronouns

Sanskrit is a *pro-drop* language, meaning that pronouns (and above all **subject** pronouns) can be dropped if their meaning is expressed elsewhere in the sentence (for instance through *person marking* on the verb) or if they can be inferred from context. Thus it is usually sufficient to use a verb without a subject pronoun in the first and second person: करोमि means “I do,” whereas अहं करोमि implies that the fact that I am doing the action — as opposed to anyone else — is somehow relevant (“it is I who do it,” “I am the one who does it,” “as for me, I do it”). Of course non-subject pronouns cannot be dropped as easily because non-subject arguments are not marked on the verb.

The first and second pronouns have no **gender**. They can be used in agreement with any gender: कस् त्वम् “who are you (masc.)?” or का त्वम् “who are you (fem.)?”. In the accusative, dative, and genitive case, all three numbers of both pronouns have alternative **enclitic** forms that can only be used after another word (enclitics cannot occur first within a sentence). There is no difference in meaning between the enclitic and non-enclitic forms.

A note on **number**: the plural is often used for the singular and dual in the first person (*Aṣṭādhyāyī* 1.2.59); in the second person, the pronoun भवत् is often used, with third person verb agreement, much like Italian *Lei* or Spanish *usted*.

Sanskrit grammarians refer to these forms as अस्मद् (first person plural), मद् (first person singular), युष्मद् (second person plural), त्वद् (second person singular). These are also the forms used in compounds.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	अहम्	आवाम्	वयम्
द्वितीया	माम्, मा	आवाम्	अस्मान्, नः
तृतीया	मया	आवाभ्याम्	अस्मभिः
चतुर्थी	मह्यम्, मे	आवाभ्याम्	अस्मभ्यम्, नः
पञ्चमी	मत्	आवाभ्याम्	अस्मत्
षष्ठी	मम, मे	आवयोः	अस्माकम्, नः
सप्तमी	मयि	आवयोः	अस्मासु

NOTE: The paradigm of the pronouns of the first person (उत्तमपुरुषः) employs several different stems:

1. *ah-ám* ← **h₁eǵ-h₂óm* (Avestan *azəm*, Greek *ἐγώ*, Latin *egō*, Old English *ic*).
2. *má-* ← **mé-* (Avestan *məm*, *mōi*, *mē*; Greek *μέ* and *μοι*, Latin *me*, *mī*, *mihi*, and Old English *me*, *mē*).
3. *āvá-*; origin unclear.
4. *vay-* ← **wei-* (Avestan *vaēm*, Gothic *weis*, German *wir*, Old English *wē*).
5. *asmá-* ← **ns-mé* (e.g. Greek *ἡμεῖς* ← **nsmé-es*, Homeric *ἄμμε* ← **nsmé*, German *uns*, Old English *ūs*).
6. *nah* ← **nos* (Latin *nōs*). It seems likely that the enclitic pronoun of the plural is a full-grade form (**nos*) of what appears in the non-enclitic pronouns in the zero-grade form (**ns*).

	एकवचने	द्विवचने	बहुवचने
प्रथमा	त्वम्	युवाम्	यूयम्
द्वितीया	त्वाम्, त्वा	युवाम्	युष्मान्, वः
तृतीया	त्वया	युवाभ्याम्	युष्माभिः
चतुर्थी	तुभ्यम्, ते	युवाभ्याम्	युष्मभ्यम्, वः
पञ्चमी	त्वत्	युवाभ्याम्	युष्मत्
षष्ठी	तव, ते	युवयोः	युष्माकम्, वः
सप्तमी	त्वयि	युवयोः	युष्मासु

NOTE: The paradigm of the pronouns of the second person (मध्यमपुरुषः) employs several different stems.

1. *tu-* ← **tu* (Latin *tu, tibi*, Old English *þū*)
2. *tē* from **toi* (Greek *τοί*)
3. *yu-v-*; origin unclear.
4. *yu-s-ma-* from **yus-mé-* (Greek *ὕμεις* ← **yusmé-es*, Homeric *ὕμμε* ← **yusmé*; Old English *ēow*)
5. *vaḥ* from **vos* (Latin *vōs*). As in the case of the first person, it seems likely that the enclitic pronoun of the plural is a full-grade form (**vos*) of what appears in the non-enclitic pronouns in the zero-grade form (**us*).

§13.2. The *tá-/yá-/ká-* series

The pronominal stems in *tá-*, *yá-* and *ká-* form a closely-related series. The *tá-* forms are demonstrative pronouns (which often function as “correlative” pronouns to relative clauses), the *yá-* forms are relative pronouns, and the *ká-* forms are interrogative pronouns. These three stems are inflected in entirely the same way. For more on relative clauses, see below.

Most Indian grammarians, including Pāṇini, teach the neuter nominative-accusative singular (नपुं.प्रथमाद्वितीयैक.) as the “basic” stem of these forms, because the paradigms of *tá-* and *yá-* share the idiosyncrasy that the nominative-accusative singular of the neuter is a special form that ends in *-d*, rather than in *-m*, as neuters of *a*-stem forms commonly do.

The forms of *tá-* function as the primary demonstrative pronoun and adjective in Sanskrit. They are used where English uses the demonstrative “that,” but also equivalently to the third-person pronoun (he/she/it) in English, and in some cases equivalently to the definite article (the) in English. The unifying feature appears to be the *identifiability* of the referent of the demonstrative.

The pronoun *tá-* or तत् is paradigmatic of the pronominal declension in Sanskrit. Please look there for comments about the special form of the endings of this class of words.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सः / तत्	तौ / ते	ते / तानि
द्वितीया	तम् / तत्	तौ / ते	तान् / तानि
तृतीया	तेन	ताभ्याम्	तैः
चतुर्थी	तस्मै	ताभ्याम्	तेभ्यः
पञ्चमी	तस्मात्	ताभ्याम्	तेभ्यः
षष्ठी	तस्य	तयोः	तेषाम्
सप्तमी	तस्मिन्	तयोः	तेषु

	एकवचने	द्विवचने	बहुवचने
प्रथमा	सा	ते	ताः
द्वितीया	ताम्	ते	ताः
तृतीया	तया	ताभ्याम्	ताभिः
चतुर्थी	तस्यै	ताभ्याम्	ताभ्यः
पञ्चमी	तस्याः	ताभ्याम्	ताभ्यः
षष्ठी	तस्याः	तायोः	तासाम्
सप्तमी	तस्याम्	तायोः	तासु

NOTE: Many of these forms have cognates in other Indo-European languages. For instance:

- तत्: Latin is-tod (later is-tud), neut. “that”; Greek τó (n.) “that”; from *tót.
- सः Greek ó (m.); from *só (the form without a final *s* appears to be original, which may account for the irregular *sandhi* of this word).
- साः Greek ῆ (f.); from *seh₂.
- तस्यः Greek τοῖο; from *tósyo.
- तम्: Greek τόν; from *tóm.
- ताम्: Greek τήν; from *téh₂m.

Note that the pronoun एत- (एतद्) is declined in exactly the same way as त्-, being a compound of त्- and the deictic particle *ē* (a full-grade form of the deictic particle *i*, which is sometimes called the *hic et nunc* or “here and now” particle in Indo-European studies). Compare forms like *i-dānim* and *i-ba*.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	यः / यत्	यौ / ये	ये / यानि
द्वितीया	यम् / यत्	यौ / ये	यान् / यानि
तृतीया	येन	याभ्याम्	यैः
चतुर्थी	यस्मै	याभ्याम्	येभ्यः
पञ्चमी	यस्मात्	याभ्याम्	येभ्यः
षष्ठी	यस्य	ययोः	येषाम्
सप्तमी	यस्मिन्	ययोः	येषु

	एकवचने	द्विवचने	बहुवचने
प्रथमा	या	ये	याः
द्वितीया	याम्	ये	याः
तृतीया	यया	याभ्याम्	याभिः
चतुर्थी	यस्यै	याभ्याम्	याभ्यः
पञ्चमी	यस्याः	याभ्याम्	याभ्यः
षष्ठी	यस्याः	यायोः	यासाम्
सप्तमी	यस्याम्	यायोः	यासु

	एकवचने	द्विवचने	बहुवचने
प्रथमा	कः / किम्	कौ / के	के / कानि
द्वितीया	कम् / किम्	कौ / के	कान् / कानि
तृतीया	केन	काभ्याम्	कैः
चतुर्थी	कस्मै	काभ्याम्	केभ्यः
पञ्चमी	कस्मात्	काभ्याम्	केभ्यः
षष्ठी	कस्य	कयोः	केषाम्
सप्तमी	कस्मिन्	कयोः	केषु

Note that there are *two* stems in use for the neuter forms of this pronoun. One of them is *kí-*, which derives from the same *i*-stem form we see in Latin *quid* and Greek *τί*. The other is *ká-*, which is historically a thematic stem (ending in either **e* or **o* in Indo-European). We only see the *i*-stem form in the neuter singular form *kim*, which is analogically reconstructed from *cit*.

NOTE: Historically, we would expect the labiovelar of the inherited form **kʷíd* to be palatalized by the following high vowel. And in fact this is what happens: the particle *cit* is the direct continuation of the Indo-European form. However, the velar has been restored throughout the paradigm of the pronoun *ká-/kí-*, on analogy with unpalatalized forms like *ké* (from **kʷóí*). When there was variation within a paradigm between velar and palatal stops, introduced by sound changes in Indo-Iranian, Sanskrit typically flattens the variation in favor of the velar stops.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	का	के	काः
द्वितीया	काम्	के	काः
तृतीया	कया	काभ्याम्	काभिः
चतुर्थी	कस्यै	काभ्याम्	काभ्यः
पञ्चमी	कस्याः	काभ्याम्	काभ्यः
षष्ठी	कस्याः	कायोः	कासाम्
सप्तमी	कस्याम्	कायोः	कासु

§13.3. The demonstrative stem इदम्

This is a demonstrative stem which, like all such stems in Sanskrit, can be used either as an adjective, qualifying another noun (e.g., अयं राजा न जानाति, “this king doesn’t know”) or as a pronoun, replacing another noun (e.g., अयं न जानाति, “this person doesn’t know”). It has *proximal reference* (पुरोवर्तिनिर्देशः) and is therefore used to refer to people and things that are relatively close to the speaker in a particular discursive context.

For the accent, see .

	एकवचने	द्विवचने	बहुवचने
प्रथमा	अयम् / इदम्	इमौ / इमे	इमे / इमानि
द्वितीया	इमम् / इदम्	इमौ / इमे	इमान् / इमानि
तृतीया	अनेन	आभ्याम्	एभिः
चतुर्थी	अस्मै	आभ्याम्	एभ्यः
पञ्चमी	अस्मात्	आभ्याम्	एभ्यः
षष्ठी	अस्य	अनयोः	एषाम्
सप्तमी	अस्मिन्	अनयोः	एषु

	एकवचने	द्विवचने	बहुवचने
प्रथमा	इयम्	इमे	इमाः
द्वितीया	इमाम्	इमे	इमाः
तृतीया	अनया	आभ्याम्	आभिः
चतुर्थी	अस्यै	आभ्याम्	आभ्यः
पञ्चमी	अस्याः	आभ्याम्	आभ्यः
षष्ठी	अस्याः	अनयोः	आसाम्
सप्तमी	अस्याम्	अनयोः	आसु

§13.4. The demonstrative stem अदस्

This pronoun is used with *distal reference* (दूरवर्तिनिर्देशः), i.e., to refer to something that is relatively distant from the speaker in a particular discursive context.

When two forms are listed in the table, they represent masculine and feminine forms; when three forms are listed, they represent masculine, neuter, and feminine forms.

	एकवचने	द्विवचने	बहुवचने
प्रथमा	असौ / अदः / असौ	अमू	अमी / अमूनि / अमूः
द्वितीया	अमुम् / अदः / अमूम्	अमू	अमून् / अमूनि / अमूः
तृतीया	अमुना / अमुया	अमूभ्याम्	अमीभिः / अमूभिः
चतुर्थी	अमुष्मै / अमुष्यै	अमूभ्याम्	अमीभ्यः / अमूभ्यः
पञ्चमी	अमुस्मात् / अमुष्याः	अमूभ्याम्	अमीभ्यः / अमूभ्यः
षष्ठी	अमुष्य / अमुष्याः	अमुयोः	अमीषाम् / अमूषाम्
सप्तमी	अमुष्मिन् / अमुष्याम्	अमुयोः	अमीषु / अमूषु

NOTE: The dual nominative-accusative forms of अदः are प्रगृह्यम्, that is, their final vowels are not subject to *sandhi* (see *Aṣṭādhyāyī* 1.1.12). Hence: *amī atra*, *amū atra*, etc.

§14. Numerals

The Sanskrit name for a number is संख्या. Sanskrit has **cardinal** numbers, which answer the question *how many*, and **ordinal** numbers, which answer the question *in what order*.

§14.1. Cardinal numbers

First the stems of the numbers from one to nineteen:

Number	Stem
1	<i>ēka-</i>
2	<i>dvā-</i>
3	<i>trī-</i>
4	<i>catúr-</i>
5	<i>pāñca-</i>
6	<i>ṣát-</i>
7	<i>saptá-</i>
8	<i>aṣṭá-</i>
9	<i>náva-</i>
10	<i>dása-</i>
11	<i>ékādaśa-</i>
12	<i>dvādaśa-</i>
13	<i>tráyōdaśa-</i>
14	<i>cáturdaśa-</i>
15	<i>pāñcadaśa-</i>
16	<i>ṣōḍaśa-</i>
17	<i>saptādaśa-</i>
18	<i>aṣṭādaśa-</i>
19	<i>nāvadaśa-</i>

The numbers from one to four are *inflected* for gender, number, and case. They are generally used as *adjectives*, i.e., to qualify another nominal, although in many cases that nominal may be understood from context and thus omitted. Hence द्वाव् आगतौ “two came,” in the masculine, can easily be understood to refer to *two men*.

The numeral एक- is inflected as a pronoun. It can also be used in the plural (not given here) to mean “some” or “a few.”

विभक्तिः	पुंलिङ्गम्	नपुंसकलिङ्गम्	स्त्रीलिङ्गम्
प्रथमा	एकः	एकम्	एका
द्वितीया		एकम्	एकाम्
तृतीया		एकेन	एकया
चतुर्थी		एकस्मै	एकस्यै
पञ्चमी		एकस्मात्	एकस्याः
षष्ठी		एकस्य	एकस्याः
सप्तमी		एकस्मिन्	एकस्याम्

The cardinal numeral “2” also distinguishes gender in the nominative-accusative. It is inflected exclusively in the dual.

विभक्तिः	पुंलिङ्गम्	नपुंसकलिङ्गम्	स्त्रीलिङ्गम्
प्रथमीद्वितीये	द्वौ		द्वे
तृतीयाचतुर्थीपञ्चम्यद्		द्वाभ्याम्	
षष्ठीसप्तम्यौ		द्वयोः	

The number “three”:

विभक्तिः	पुंलिङ्गम्	नपुंसकलिङ्गम्	स्त्रीलिङ्गम्
प्रथमा	त्रयः		
द्वितीया	त्रीन्	त्रीणि	तिस्रः
तृतीया		त्रिभिः	तिसृभिः
caturthīpañcamyau		त्रिभ्यः	तिसृभ्यः
षष्ठी		त्रयाणाम्	तिसृणाम्
सप्तमी		त्रिषु	तिसृषु

विभक्तिः	पुंलिङ्गम्	नपुंसकलिङ्गम्	स्त्रीलिङ्गम्
प्रथमा	चत्वारः	चत्वारि	चतस्रः
द्वितीया	चतुरः		
तृतीया		चतुर्भिः	चतसृभिः
चतुर्थीपञ्चम्यौ		चतुर्भ्यः	चतसृभ्यः
षष्ठी		चतुर्णाम्	चतसृणाम्
सप्तमी		चतुर्षु	चतसृषु

The numbers from five to nineteen are inflected for case and number (which will always be plural), but not gender. In the nominative and accusative, the bare stem is used, without the usual declensional endings. These numbers, too, are used as *adjectives*.

विभक्तिः	रूपम्
प्रथमाद्वितीये	पञ्च
तृतीया	पञ्चभिः
चतुर्थीपञ्चम्यौ	पञ्चभ्यः
षष्ठी	पञ्चानाम्
सप्तमी	पञ्चसु

सप्त- “7,” नव- “9,” and दश- “10,” as well as the numbers from 11 to 19 (which end in दश-), are inflected in the same way as पञ्च-.

विभक्तिः	रूपम्
प्रथमाद्वितीये	षट्
तृतीया	षड्भिः
चतुर्थीपञ्चम्यौ	षड्भ्यः
षष्ठी	षण्णाम्
सप्तमी	षट्सु

विभक्तिः	रूपम्
प्रथमाद्वितीये	सप्त
तृतीया	सप्तभिः
चतुर्थीपञ्चम्यौ	सप्तभ्यः
षष्ठी	सप्तानाम्
सप्तमी	सप्तसु

विभक्तिः	रूपम्
प्रथमाद्वितीये	अष्टौ, अष्ट
तृतीया	अष्टाभिः, अष्टभिः
चतुर्थीपञ्चम्यौ	अष्टाभ्यः, अष्टभ्यः
षष्ठी	अष्टानाम्
सप्तमी	अष्टासु, अष्टसु

विभक्तिः	रूपम्
प्रथमाद्वितीये	नव
तृतीया	नवभिः
चतुर्थीपञ्चम्यौ	नवभ्यः
षष्ठी	नवानाम्
सप्तमी	नवसु

विभक्तिः	रूपम्
प्रथमाद्वितीये	दश
तृतीया	दशभिः
चतुर्थीपञ्चम्यौ	दशभ्यः
षष्ठी	दशानाम्
सप्तमी	दशसु

NOTE: The Proto-Indo-European reconstructions of these numbers are:

1	* <i>óí-</i>
2	* <i>dwó-</i>
3	* <i>trí-</i>
4	* <i>k[̥]etwór-</i>
5	* <i>pénk[̥]e-</i>
6	* <i>swek̄ (?)</i>
7	* <i>septm̄-</i>
8	* <i>októ-</i>
9	* <i>néwo-</i>
10	* <i>dekm-</i>

The numbers from twenty onwards are nouns, and construed with what they modify on the genitive (e.g. दासीनां शतम् “a hundred slaves”) or used in apposition to what they modify (e.g., दास्यः शतम् id.). Most of the tens are feminine; the numbers 100 and 1000 are neuter.

Number	Stem	Gender
20	विंशति-	f.
30	त्रिंशत्-	f.
40	चत्वारिंशत्-	f.
50	पञ्चाशत्-	f.
60	षष्टि-	f.
70	सप्तति-	f.
80	अशीति-	f.
90	नवति-	f.
100	शत-	n.
1000	सहस्र-	n.

§14.2. Ordinals

The ordinals are adjectives that describe the *order* of something in a series. They are generally formed from the cardinal numbers (the exception being “first” or प्रथम-) by means of various suffixes, such as *thá*, *má*, *tamá*, and *tíya/íya*. The feminine stem of all of the ordinal numbers is formed with *i*, except प्रथमा-, द्वितीया-, तृतीया-, तुर्या- and तुरीया-.

Number	Stems
1st	प्रथम-, प्रथमा-
2nd	द्वितीय-, द्वितीया-
3rd	तृतीय-, तृतीया-
4th	चतुर्थ-, चतुर्थी- [also तुर्य-, तुर्या- and तुरीय-, तुरीया-]
5th	पञ्चम-, पञ्चमी-
6th	षष्ठ-, षष्ठी-
7th	सप्तम-, सप्तमी-
8th	अष्टम-, अष्टमी-
9th	नवम-, नवमी-
10th	दशम-, दशमी-
11th	एकादश-, एकादशी-

The ordinals from 11th to 19th are formed like एकादश-, एकादशी-.

Number	Stems
20th	विंश-, विंशी-
30th	त्रिंश-, त्रिंशी-
40th	चत्वारिंश-, चत्वारिंशी-
50th	पञ्चाश-, पञ्चाशी-
60th	षष्ठ-, षष्ठी-
70th	सप्तत-, सप्तती-
80th	अशीत-, अशीती-
90th	नवत-, नवती-
100th	शततम-, शततमी-
1000th	सहस्रतम-, सहस्रतमी-

The numbers between the tens are formed as simple compounds of the “ones” place and the ordinal stem for the “tens” place (e.g., एकाविंश-, द्वात्रिंश-, चतुश्चत्वारिंश-, etc.). The numbers after 100 and 1000 are formed with the stem शत-, शती- and सहस्र-, सहस्री-, rather than from the longer ordinal stem (e.g., एकशत-, etc.).

§14.3. The *bhūtasamkhyā* system

§15. Adjectives

Adjectives, as noted above, are morphologically identical to nouns. In syntactic terms, an adjective is defined by its agreement in gender, number, and case with a noun, to which it serves as a modifier or, as the Indian grammarians say, a qualifier (विशेषणम्). Adjectives are sometimes called गुणवचनानि, “words expressive of qualities.”

Because it is declined in all three genders, the *stem* (प्रातिपदिकम्) of an adjective may change. Thus, for example, when a masculine or neuter noun is described as “blue,” the *a*-stem form नील- is used, whereas when a feminine noun is described as “blue,” the *ā*-stem noun नीला- is used. The feminine form can often be considered a derivative of the masculine-neuter form, which is therefore considered to be the “basic” stem for the purposes of adjective formation. Thus Pāṇini teaches the feminine forms of many adjectives with the suffixes टप्, णीप्, डीष्, डाप्, and so on. In learning an adjectival formation, one should also learn which feminine stem is used with it.

Here are a few examples of adjectival stems:

Meaning	पुंलिङ्गम्	नपुंसकलिङ्गम्	स्त्रीलिङ्गम्	Suffix
“red”	लोह-	लोह-	लोहा-	टाप्
“confused”	मुग्ध-	मुग्ध-	मुग्धा-	टाप्
“doer”	कर्तृ-	कर्तृ-	कर्त्री-	डीप्
“learned”	विद्वन्त्-	विद्वत्-	विदुषी-	डीप्
“short”	लघु-	लघु-	लघ्वी-	डीप्
“sacrificing”	पचन्त्-	पचत्-	पचन्ती-	डीप्
“great”	महन्त्-	महत्-	महती-	डीप्
“carrying a staff”	दण्डिन्-	दण्डिन्-	दण्डिनी-	डीप्
“of the Kosalas”	कौसल्य-	कौसल्य-	कौसल्या-	चाप्

§15.1. Comparison of adjectives

One particularity of adjectives is that they can take particular suffixes that express grades of comparison. These suffixes are similar to (and indeed etymologically related to) the English comparative suffix *-er* and superlative suffix *-est*, as in *redder* and *reddest*.

The most general set of suffixes, which can be used with any adjectival stem, are त्रप्, which expresses the comparative degree, and तमप्, which expresses the superlative degree (5.3.55–57). They are added to the basic stem, that is, the masculine-neuter form of the adjectival stem, in the weak form (i.e., the form that occurs before endings beginning with a consonant, like *bhis*) if the stem alternates between strong and weak forms. For the comparative degree, the masculine and neuter form is -त्र-, and their feminine form is -त्रा-; for the superlative degree, the masculine and neuter form is -तम-, and the feminine form is -तमा-.

Positive degree		Comparative degree		Superlative degree	
लघु	“light”	लघुतरम्	“lighter”	लघुतमम्	“lightest”
गुरु	“heavy”	गुरुतरम्	“heavier”	गुरुतमम्	“heaviest”
मृदु	“soft”	मृदुतरम्	“softer”	मृदुतमम्	“softest”
स्थूलम्	“thick”	स्थूलतरम्	“thicker”	स्थूलतमम्	“thickest”
प्राक्	“eastern”	प्राक्तरम्	“more eastern”	प्राक्तमम्	“most eastern”
धनी	“wealthy”	धनितरः	“wealthier”	धनितमः	“wealthiest”
विद्वान्	“knowing”	विद्वत्तरः	“more knowing”	विद्वत्तमः	“most knowing”

Pāṇini allows these suffixes to be affixed directly to inflected expressions of time in the locative, e.g., पूर्वाह्णे “in the forenoon” → पूर्वाह्णेतरे “earlier in the forenoon” (*Aṣṭādhyāyī* 6.3.17). In the form *-tarām* and *-tamām*, they can also be added to indeclinable adverbs and even to finite verbs (*Aṣṭādhyāyī* 5.3.56). Of these forms, only adverbs like नतराम् “how much less” are common.

The suffixes ईयसुन् and इच्छन् constitute another set, which however can only be used after a small set of adjectives. In contrast to *taraP* and *tamaP*, which can be considered “derivational” suffixes to the extent that they are added onto already-existing nominal forms, *īyasUN* and *iṣṭhaN* are added directly onto roots. Hence they *alternative* with the suffixes of the positive degree rather than being added onto them. Another particularity of these suffixes is that the root takes the full grade; thus these forms contrast with the positive degree, where the root very often is in the zero grade. For the declension of stems in *-yas-* see above.

NOTE: It is less common to speak of roots in the case of adjectives than in the case of verbs. Sometimes (e.g., क्षिप्र-) the adjectival root corresponds in form and meaning to a verbal root (√क्षिप्र). But most adjectives can be considered to be formed by derivation from an abstract root form. The systems of adjective formation in Proto-Indo-European were studied by Willem Caland and are therefore known as Caland systems.

Generally the suffixes *īyas* and *iṣṭha* are added after the final consonant of an adjectival stem (thus replacing a final vowel), e.g., पापः “bad,” पापीयान् “worse,” पापिष्ठः “worst.” But in the following forms the adjective takes a different form in the positive degree than it does in the comparative and superlative degree (in some cases being given by *suppletion*). All forms are given in the neuter nominative singular.

Positive degree		Comparative degree		Superlative degree	
अन्तिकम्	“close”	नेदीयः	“closer”	नेदिष्ठम्	“closest”
अल्पम् अल्पीयः	“small” अल्पिष्ठम्	कनीयः	“smaller”	कनिष्ठम्	“smallest”
उरु	“wide”	वरीयः	“wider”	वरिष्ठम्	“widest”
ऋजु रजीयः	“straight” रजिष्ठः	ऋजीयः	“straighter”	ऋजिष्ठम्	“straightest”
कृशम्	“lean”	ऋशीयः	“leaner”	ऋशिष्ठम्	“leanest”
क्षिप्रम्	“swift”	क्षेपीयः	“swifter”	क्षेपिष्ठम्	“swiftest”
क्षुद्रम्	“mean”	क्षोदीयः	“meaner”	क्षोदिष्ठम्	“meanest”
गुरु	“heavy”	गरीयः	“heavier”	गरिष्ठम्	“heaviest”
तृप्तम्	“satisfied”	त्रपीयः	“more satisfied”	त्रपिष्ठम्	“most satisfied”
दीर्घम्	“long”	द्राघीयः	“longer”	द्राधिष्ठम्	“longest”
दूरम्	“far”	दवीयः	“farther”	दविष्ठम्	“farthest”
दृढम्	“firm”	द्रढीयः	“firmer”	द्रढिष्ठम्	“firmest”
परिवृद्धम्	“exalted”	परिव्रढीयः	“more exalted”	परिव्रढिष्ठम्	“most exalted”
पृथु	“broad”	प्रथीयः	“broader”	प्रथिष्ठम्	“broadest”
प्रशस्यम् ज्यायः	“praiseworthy” ज्येष्ठम्	श्रेयः	“better”	श्रेष्ठम्	“best”
प्रियम्	“dear”	प्रेयः	“dearer”	प्रेष्ठम्	“dearest”
बहु	“much”	भूयः	“more”	भूयिष्ठम्	“most”
बहुलम्	“thick”	बंहीयः	“thicker”	बंहिष्ठम्	“thickest”
भृशम्	“excessive”	भ्रशीयः	“more excessive”	भ्रशिष्ठम्	“most excessive”
मृदु	“soft”	म्रदीयः	“softer”	म्रदिष्ठम्	“softest”
युवन् कनीयः	“young” कनिष्ठम्	यवीयः	“younger”	यविष्ठम्	“youngest”
बाढम्	“firm”	साधीयः	“firmer”	साधिष्ठम्	“firmest”
वृद्धम् ज्यायः	“old” ज्येष्ठम्	वर्षीयः	“older”	वर्षिष्ठम्	“oldest”
वृन्दारकम्	“beautiful”	वृन्दीयः	“more beautiful”	वृन्दिष्ठम्	“most beautiful”
स्थिरम्	“firm”	स्थेयः	“firmer”	स्तेष्ठम्	“firmest”
स्थूलम्	“thick”	स्थवीयः	“thicker”	स्थविष्ठम्	“thickest”
स्फिरम्	“thick”	स्फेयः	“thicker”	स्फेष्ठम्	“thickest”
ह्रस्वम्	“short”	ह्रसीयः	“shorter”	ह्रसिष्ठम्	“shortest”

§16. Adverbs

Adverbs are words that directly modify either a **verb** or an **adjective**. They are considered to be indeclinable (अव्ययम्) because they do not change their form to agree with anything else in gender, number, person or case. However, do not make the mistake of thinking that adverbs have no case-suffixes. Most Sanskrit adverbs are in fact case-forms of nouns or adjectives that are “frozen” in a particular adverbial usage. Others are formed from pronominal bases by the addition of a number of suffixes that form words that are used adverbially (although some words so formed have other uses as well).

§16.1. Regular case-forms used adverbially

Any **nominal form** (noun or adjective) can be used as an adverb if it is in the **accusative singular form**, and if it is an adjective, then it will appear in the **neuter** gender.

Accusatives. As noted above, any accusative (neuter) singular form can be used as an adverb. Here are a few examples formed from nouns:

- रम्यम् “pleasingly” (रम्य- “pleasing”)
- प्रियम् “pleasantly” (प्रिय- “pleasant”)
- तीव्रम् “sharply” (तीव्र- “sharp”)
- कृच्छ्रम् “with difficulty” (कृच्छ्र- “sharp”)
- चिरम् “for a long time” (चिर- “lasting a long time”)
- मन्दम् “slowly” (मन्द- “slow”)
- सादरम् “carefully” (सादर- “careful, with care”)
- शीघ्रम् “quickly” (शीघ्र- “quick”)
- अत्यन्तम् “excessively, too much” (अत्यन्त- “excessive”)

There are also a few nouns that can be used adverbially in their accusative singular forms:

- सुखम् “easily, comfortably” (सुख- “comfort, ease, pleasure”)
- कामम् “with pleasure, *placiter, voluntieri*” (काम- “pleasure”)

Pronominal forms can also be used adverbially in the neuter accusative singular form:

- तत् “so,” “for that reason”
- यत् “because”
- किम् “why?” “how?”

Instrumentals. The following instrumental forms, in some cases “frozen” and not used in any other case, are used as adverbs:

- अचिरेण “soon” (अ-चिर- “not for a long time”)
- दिवा “by day” (द्यु- or द्यौ- “day”)
- सहसा “suddenly, violently” (सहस- “force”)
- क्षणेन “momentarily” (क्षण- “moment”)
- परम्परया “indirectly” (परम्परा- “uninterrupted series”)
- प्रणालिकया “indirectly” (प्रणालिका- “channel”)
- अतिशयेन “excessively” (अतिशय- “excess”)
- उच्चैः “loudly”
- नीचैः “quietly” (नीच- “low”)

Ablatives. Ablatives are not very often used adverbially, but here are a few adverbial forms that are in original frozen ablatives:

- पश्चात् “afterwards”
- समन्तात् “entirely, on all sides”
- अकस्मात् “suddenly”

- साक्षात् “directly”
- बलात् “by force”

Locatives. Locatives (and genitives) are the case-forms least likely to form adverbs, but a few are quotable:

- सपदि “immediately

§16.2. Special adverbial forms

A number of suffixes are used to form adverbs from nominal, and especially pronominal, stems. The pronominal stems commonly encountered in these adverbial forms are:

- त- (from तत् “that”; note that एतत् does not form adverbs!)
- अ- (from इदम् “this”)
- अमु- (from अदः “that”)
- सर्व- “all, every”
- एक- “one”
- अन्य- “other”

-त्र — local adverbs. These forms are generally used adverbially, but they can sometimes be used in place of locative case forms, and hence to qualify another locative case form (e.g., तत्र वने = तस्मिन् वने “in that forest”).

- यत्र “where...” (relative)
- तत्र “there”
- अत्र “here”
- कुत्र “where?”
- परत्र “in another place”

- अमुत्र “over there”
- सर्वत्र “everywhere”
- उभयत्र “in both cases”
- एकत्र “in one case”

-शः — distributive adverbs.

- एकशः “one by one”
- शतशः “by the hundreds”
- गणशः “in crowds”

-धा — multiplicative adverbs. Translatable as “in x ways,” where x most commonly refers to a quantity:

- बहुधा “in many ways
- एकधा “in a single way
- द्विधा “in two ways”

-था — adverbs of manner.

- यथा “in which way...” or “as”
- तथा “in such a way”
- अन्यथा “otherwise”
- इतरथा “otherwise”
- सर्वथा “in every way”
- उभयथा “in both ways”

This suffix -था also has a variant -थम् found in a few forms:

- इत्थम् “in this way”
- कथम् “how?”

-दा — temporal adverbs.

- यदा “when...” (relative)
- तदा “at that time”
- कदा “when?”
- सदा “always”
- एकदा “at one time”
- सर्वदा “at all times”
- अन्यदा “at another time” (often: “one day...”)

In this group we can probably also put इदानीम् “now” (इदा-नीम्).

-तात् — local adverbs, usually (but not always) after stems in ऽ:

- पुरस्तात् “in front”
- अधस्तात् “below”
- उपरिष्ठात् “above”
- परस्तात् “after”

-आत् — resultative adverbs.

- भस्मात् “to ashes”

Another way of forming adverbs — more common in the Middle Indic languages than in Sanskrit, however — is to use the quotative particle इति after an imitative sound. They probably have the sense of “as soon as you can say...” or “like this” (accompanied by

snapping the fingers). The most common of these forms is:

- झटिति “immediately”

§16.3. The suffix तसि

The suffix -तः (called तसि or तसिञ्च by Pāṇini) has a variety of different functions, but it is most convenient to discuss it in connection with adverb formation. In general it is taught as an optional replacement for the ablative ending (इसि), and this is perhaps its most common use, with both nominal and pronominal stems:

- ग्रामतः = ग्रामात् “from the village”
- ग्रामतः = ग्रामात् “from the village”
- यतः ... ततः = यस्मात् ... तस्मात् “because... for that reason” (ablative of cause)
- इतः “from this,” “because of this”
- कुतः “from what?” “why?”
- रामतः पटुतरः “cleverer than Rāma” (ablative of comparison)
- सर्वतः “from all sides”

But it can also have a much wider range of adverbial usages, some of which are exemplified below:

- अग्रतः “in front”
- अन्ततः “finally, at the end”
- गुणतः “in terms of qualities, with reference to qualities”
- वस्तुतः “in reality, really”
- इतस्ततः “this way and that, here and there”
- अभितः “nearby”

- परितः “all around”
- समन्ततः “on all sides”

Chapter 3

Verbal Morphology

§17. Verbs

“Verbs” (आख्यातम्) are those forms which have verbal endings (also called आख्यातानि), that is to say, finite verbs, which are inflected for the grammatical categories of *person*, *number*, *diathesis* (or “voice”), as well as *tense* and *mood*. The process of inflecting a verbal form for these categories is called *conjugation*.

NOTE: English has a fairly minimal system of conjugation (*I do, you do, he does*, etc. for the present tense, *I did, you did, he did* etc. for the past), and expresses most of the distinctions of tense, mood, and diathesis through *compound* verbal expressions that make use of auxiliary verbs. In Sanskrit, by contrast, all of these categories are typically expressed in a single verbal form.

Finite verbs are so called because they are limited (finitum) by these grammatical categories; **non-finite** verbs do not express all of these categories. Usually only a **finite** form can function as a verbal predicate. Non-finite forms are used as the complements of certain types of verbal and adjectival phrases (as in the case of *infinitives*), or as the head of a subordinate clause (as in the case of *converbs*).

As noted above, verbal forms are understood by Indian grammarians refer to “processes” (भावः), in contrast to “existing things” (सत्त्वम्), which are designated by nominal forms. However, because of Sanskrit’s rich processes of derivation, it is possible to express processes with nominal forms as well.

In Pāṇini’s grammar, the starting point for the formation of any finite verbal form, and several non-finite verbal forms, is a *verbal root* (धातुः). The next step is to select one of the लकारः, abstract signs that combine the notion of *tense* and *mood*. One a tense and mood has been assigned with a लकारः, a conjugational *stem* is formed through morphological processes such as reduplication (in the case of the perfect tense or लिट्) and suffixation (in the case of most other tenses and moods). In the latter case, the stem-forming suffix is selected lexically: certain verbal roots take certain stem-forming suffixes and not others. Finally, once a conjugational *stem* (अङ्गम्) has been formed, the conjugational *endings* (तिङ्) are added, which differ according to the grammatical categories that are to be expressed by them (such as *person*, *number*, and *diathesis*) and according to the tense–mood of the stem to which they are added. Each step of this process will be discussed in the following sections.

§17.1. Verbal roots

A verbal root is an abstract entity from which the process of verbal inflection begins. It expresses a basic meaning (e.g., “going”) that is specified by the addition of suffixes, specifically, the *tense and mood* suffixes (called लकारः) to which the conjugational endings of verbs are added.

Most primary roots in Sanskrit are *monosyllabic*, as was evidently the case in Indo-European as well. The qualification “primary” is necessary because, in Sanskrit, a verbal root, in the strictly morphological sense of a unit to which tense and mood suffixes can be added, can be formed secondarily from either a nominal stem (a प्रातिपदिकम्) or from another verbal

root by means of certain suffixes (called सनादिप्रत्ययाः). These denominal and deverbal roots are almost always polysyllabic.

Learning the verbal roots and their meanings has long been one of the “first steps” of learning Sanskrit. Pāṇini’s grammar refers to a traditional “recitation of verbal roots” (धातुपाठः), and many such lists were edited and compiled.

§17.2. *Sēt* and *Aniṭ* roots

Verbal roots in Proto-Indo-European could end in a consonant called a laryngeal, a sound which does not survive in Sanskrit but which has left traces here and there. One of these traces is that roots which historically ended in a laryngeal take the augment *i* before certain suffixes. (This *i* is called *iṭ*, and it is the regular outcome of a Proto-Indo-European laryngeal between consonants.) This augment was gradually extended to roots which did not end with a laryngeal in Proto-Indo-European. Thus one will have to know whether a given root is *sēṭ* (literally “with the augment *i*”) or *aniṭ* (“without the augment *i*”). Thus:

root:	√वृत् (<i>sēṭ</i>)	√हृ (<i>aniṭ</i>)
Ktvā:	<i>vart-i-tvā</i>	<i>hu-tvā</i>
root:	√लृ (<i>sēṭ</i>)	√या (<i>aniṭ</i>)
thaL:	<i>lulav-i-tha</i>	<i>yayā-tha</i>

Sēt roots will be noted in transliteration with a superscript *i*, as in √लृⁱ.

NOTE: As noted above, the class of *sēṭ* roots largely corresponds to roots that ended in a laryngeal in Proto-Indo-European. Because of the laryngeal’s effects on the preceding sounds, it’s often possible to guess whether a root belongs to this class or not on the basis of its form. Roots that end in voiceless aspirates (such as √प्रथⁱ) and in long vowels (such as √लृⁱ) are often *sēt*.

§17.3. Tenses and moods

Every finite verb can be said to have both a *tense*, which expresses the time in which the action referred to by the verb occurred relative to the time in which the verb form is used, as well as a *mood*, which expresses the “way” (modus) in which the action is referred to, that is to say, whether it is something the speaker refers to as actually occurring (either in the past, present, or future), or as something that either might happen or ought to happen.

The five **tenses** of Sanskrit are:

- **present:** For referring to an action that takes place more or less more or less at the same time that the verbal form is used (*Aṣṭādhyāyī* 3.1.123). The Sanskrit present tense corresponds to the English habitual present (“I go to the store”) and progressive present (“I am going to the store”).
- **orist:** For referring to an action that takes place in the past, without further specification of time (*Aṣṭādhyāyī* 3.2.110).
- **imperfect:** For an action that takes place in the relatively recent past. (“Before the present day,” according to Pāṇini’s definition in *Aṣṭādhyāyī* 3.2.111.)
- **perfect:** For referring to an action that takes place in the distant past. (“Beyond the speaker’s personal experience,” according to Pāṇini’s definition in *Aṣṭādhyāyī* 3.2.115.)
- **future:** For referring to an action that takes place in the future, relative to the speaker’s time.

Sanskrit therefore has **three** past tenses, and more can be added if we consider the common use of the past participle to be a past tense. For practical purposes, *there is no difference in meaning* between the imperfect, orist, and perfect, although fastidious authors will

observe Pāṇini's rules and they will refrain from using, for instance, a perfect-tense verb to describe an action which the speaker has personally witnessed.

The following **moods** may also be distinguished:

- **indicative:** For a referring to an action that actually did, does, or will take place. This is sometimes called the *realis* mood.
- **optative:** For referring to an action that *ought to* or *ought not to* take place, as well as an action that *might* or *might not* take place. This is the principal *irrealis* mood.
- **imperative:** For referring to an action that, from the speaker's perspective, *must* or *must not* take place, especially when giving commands or orders.

Lists of Sanskrit moods often include the following additional moods, which are only used in very specific circumstances, and which in some cases are clearly derivative of the three moods above:

- **subjunctive:** So called because of its formal identity with the Indo-European subjunctive, but used in Vedic texts as a future tense.
- **injunctive:** In post-Vedic Sanskrit, this mood is used exclusively in prohibitions, in complementary distribution with the imperative; in Vedic Sanskrit, it is a tenseless verb used for events that occur "outside of time."
- **precativ:** A mood used for wishing blessings, formally similar to the optative.
- **conditional:** A mood used to express counterfactual conditions, of comparatively rare occurrence.

It is important to note, however, that the system of tenses and moods has been restructured in Sanskrit *vis-à-vis* what we can reconstruct for Indo-European. Most importantly, Indo-European distinguished a category of **aspect** that has been more or less folded into the category of tense in post-Vedic Sanskrit. There were three such aspects:

- **imperfective:** For referring to an action as occurring over an extended period of time, including continuous, progressive, or habitual action.
- **aoṛist:** For referring to an action as a punctual event.
- **stative:** For referring to an action as a state consequent upon a previous action.

Each of these three aspects was expressed with a particular form of the stem. Each aspectual stem “had” the indicative, subjunctive, imperative and optative moods, in the sense that endings that characterized these moods could be added onto a given aspectual stem. Moreover, in the case of the imperfective aspect, there were two *tenses* of the indicative mood, one indicating present time, and another indicating past time. Hence the verbal system that Sanskrit inherited from Indo-European looked something like the following:

aspect	mood and tense
	indicative present (<i>laṭ</i>)
indicative past (<i>lañ</i>)	
imperative (<i>lōṭ</i>)	
subjunctive (<i>lēṭ</i>)	
optative (<i>liñ</i>)	
	indicative (<i>luñ</i>)
imperative	
aoṛist	
subjunctive	
optative	
	indicative (<i>liṭ</i>)
imperative	
stative	
subjunctive	
optative	

There are therefore three different “systems” of tenses and moods, corresponding to the three different aspects of Indo-European: the **present** (the inherited imperfective), the **aoṛist** (the inherited aorist), and the **perfect** (the inherited stative).

These systems have been modified in Sanskrit in a number of ways:

- First, the distinction between tense and aspect has been largely erased, so that the **past indicative of the imperfective**, the **indicative of the aorist**, and the **indicative of the stative** all function as past tenses, namely, as the **imperfect**, **aoṛist**, and **perfect**.
- Second, the non-indicative moods, besides those of the present system, are only used in the Vedic language. In the post-Vedic language, the *imperative* and *optative* moods can only be formed from the present stem.
- The subjunctive is no longer used in the post-Vedic language, having been functionally replaced with two **future** tenses.

§17.4. लकारः

In the above table, we have noted in parentheses those aspect-tense-mood combinations that are represented in Pāṇini’s system of लकारः. As noted above, these लकारः stand for fixed tense-mood combinations. They are listed below, together with the *stem* of the verb that they select for:

<i>lakāraḥ</i>	Interpretation	Stem
लट्	Present (indicative)	Present
लङ्	Imperfect (indicative)	Present
लोट्	Imperative	Present
लिट्	Optative	Present
लेट्	Subjunctive	Present
लृट्	(Synthetic) future	Future
लृङ्	Conditional	Future
लुट्	(Analytic) future	N/A
लुङ्	Aorist (indicative)	Aorist
लिट्	Perfect (indicative)	Perfect

Pāṇini's names reflect the patterns of these different tense-mood combinations. For example, what the present indicative and imperfect indicative share, in contrast to all of the other tense-mood combinations, is the medial element *-a-*, which signifies that these forms are built by adding a set of personal endings to the present stem without any additional suffixation. By contrast, the present indicative is characterized by a final *-t*, whereas the imperfect indicative is characterized by a final *-ṅ*, and therefore they take two different sets of endings.

§17.5. Person (पुरुषः)

Among the categories that finite verbs are inflected for is *person*. Sanskrit distinguishes between the प्रथमपुरुषः or “first person,” the मध्यमपुरुषः or “middle person,” and the उत्तमपुरुषः or “last person.” **Beware** that these correspond to what we call the third person, the second person, and the first person, respectively. Sanskrit does not distinguish between an inclusive and exclusive first person.

§17.6. Number (संख्या)

Like nouns, finite verbs in Sanskrit are inflected for *singular* (एकवचनम्), *dual* (द्विवचनम्), and *plural* (बहुवचनम्) numbers.

§17.7. Diathesis or voice

The **diathesis** (also called *voice*) of a verb, in linguistics, generally refers to the connection between the *arguments* of a verb, which are features of its *syntax*, to one or another of the *participants* in the verbal action (called thematic roles below), which are features of its *semantics*. In English, we distinguish between “active voice,” where the *agent* is the principal argument, or *subject*, of the verb, and “passive voice,” where the *patient* is the subject of the verb.

In Sanskrit, there is a clear distinction between verbal constructions wherein the subject is an *agent*, and verbal constructions where in the subject is a *patient*. The latter are called “passive” or “P-oriented” (for *patient*) constructions. These will be discussed below.

Sanskrit makes a further diathetic distinction within the category of “active” or “A-oriented” voice between परस्मैपदम्, “a word for another,” and आत्मनेपदम्, “a word for oneself.” This distinction maps onto what grammars in the Greek and Latin tradition call “active” (ἐνέργεια) and “middle” (μεσότης), respectively. The expression “middle,” in the Greek and Latin tradition, is meant to capture the fact that the subject of the verb in question is represented as neither the *agent* of a particular action, nor the *patient* of the verbal action, but something in between. Here is an analogous case from English:

- *I am baking the bread in the oven.* :: **active** voice, because the subject of the verb “bake” is represented as the *agent* of the verbal action.
- *The bread is being baked in the oven.* :: **passive** voice, because the subject of the verb “bake” is represented as the *patient* of the verbal action.

- *The bread is baking in the oven.* :: **middle** voice, because the subject of the verb “bake” is the bread, which is neither represented as the agent of an action of baking, nor the patient of the same action.

The “middle” voice, so construed, is used to represent the subject of the verb as a “non-agentive agent,” that is, someone who undergoes or experiences the action of the verb, but who is nevertheless not represented as the patient of an action performed by someone else. It is therefore often, cross-linguistically, with the following types of verbs:

- verbs of *perceiving* and *experiencing*;
- verbs of *motion*;
- other verbs referring to *changes in state*.

Note that these types of verbs are typically *intransitive*, that is, they do not take a direct object. They may, however, take dependents that agree with the subject: in “I feel tired,” “tired” is not a direct object, but an adjective that agrees with the subject of the verb.

Whereas the distinction between “active” and “passive” voice in Sanskrit is made by the verbal **stem**—one form of the stem being used for “A-oriented” constructions, and another for “P-oriented” constructions—the distinction between परस्मैपदम् and आत्मनेपदम् is made by the verbal **endings**. There are thus, for any verb, two sets of endings, and the choice of whether to use परस्मैपदम् or आत्मनेपदम् endings is mostly conditioned lexically, along the lines sketched above:

- Most transitive verbs have an **agent subject**, that is, the subject of the verb is an “agentive agent.” These verbs take परस्मैपदम् endings.
 - *indrō vṛtram hanti* “Indra slays Vṛtra.”
- A few transitive verbs have an **experiencer subject**, that is, the subject of the verb is one who experiences something. These verbs take आत्मनेपदम् endings.

- *indrō sōmam̐ bhukṭē* “Indra consumes the Sōma.”
- Among intransitive verbs, some will treat the subject as an “agentive agent,” and will hence take परस्मैपदम् endings (these verbs are usually called *unergative* in the linguistics literature):
 - *brāhmaṇās calanti* “The Brahmans are walking.”
- Some intransitive verbs, however, treat the subject as a “non-agentive agent,” and will take आत्मनेपदम् endings (these verbs are called *unaccusative* in the linguistics literature):
 - *sa manyatē* “He is thinking.”

§18. Verbal endings (तिङ्)

The verbal endings—or तिङ्, to use Pāṇini’s abbreviation for them—are the final element in a finite verbal form. The endings are what express the categories of person, number, and diathesis; additionally, each tense-mood combination (लकारः) takes a specific set of endings.

As with the nominal endings, Pāṇini teaches the verbal endings in “triplets,” consisting of the singular, dual, and plural ending in the third person, second person, and first person, in that order. There are two such 3x3 matrices taught in *Aṣṭādhyāyī* 3.4.78, the first being the endings of the परस्मैपदम् and the second being the endings of the आत्मनेपदम्.

These two sets of endings are actually the starting-point for the derivation of additional sets of endings, because both the परस्मैपदम् and आत्मनेपदम् include special endings for each लकारः. We will see, however, that Pāṇini has classified the लकारः on the basis of the kinds of endings that they take, and therefore there is a broad division—subsequently discovered by philologists, who gave it a new name—between **primary** endings, used in लकारः with the marker *T*, and **secondary** endings, used in लकारः with the marker *Ñ*.

In some verbal inflections, just as in some nominal inflections, there is a distinction between the *strong* and *weak* form of the stem, which historically arose from the interplay of the accent of the root, or stem-forming suffix, and the accent of the inflectional ending. The endings that require the *strong* form of the stem will be noted below.

§18.1. परस्मैपदम् endings

This section will explain the परस्मैपदम् endings for the various लकारः. We begin with the परस्मैपदम् endings that Pāṇini teaches as basic:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तिप्	तस्	झि
मध्यमपुरुषः	सिप्	थस्	थ
उत्तमपुरुषः	मिप्	वस्	मस्

Note that the endings of the singular all have the marker *P*, which indicates that the accent is on the preceding morpheme; all of the other endings are accented. These singular endings also require the *strong* form of the stem, if the paradigm distinguishes between strong and weak forms. The endings listed above are the *primary* endings, which are used in the present indicative (लट्). If we “translate” Pāṇini’s endings into the forms that actually appear, we obtain the following 3x3 matrix:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	-ti	-táḥ	-ánti / -áti
मध्यमपुरुषः	-si	-tháḥ	-thá
उत्तमपुरुषः	-mi	-váḥ	-máḥ

Important points to notice about these endings are:

- The endings of the singular are *unaccented*, and additionally, they and the plural of the *prathamapurusaḥ* end in an element *-i*, which Indo-Europeanists have considered a “*hic-et-nunc* particle,” indicating that the verb refers to the present. This element disappears in the secondary endings.
- The remaining endings of the *uttamapurusaḥ* end in an element *-ḥ*, which also disappears in the secondary endings.
- The plural ending of the *prathamapurusaḥ* has two variants, *-ánti* and *-áti*, which derive from two different grades of an earlier ending **-ént-i* and **-nt-i*.
- Most of these endings are well-attested in the other Indo-European languages:
 - *-ti* (एक. प्र०): Lat. *-t*, Hittite *-zi*, Greek *-τι* in *ἐστί*.
 - *-si* (एक. मध्य०): Lat. *-s*, Hittite *-si*.
 - *-mi* (एक. उत्त०): Hittite *-mi*, Greek *-μ* in verbs like *δείκνυμι*.
 - *-ánti* (बहु. प्र०): Hittite *-anzi*, Greek (Doric) *-οντι*, Latin *-unt*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	<i>-t</i>	<i>-tám</i>	<i>-án / -úḥ</i>
मध्यमपुरुषः	<i>-s</i>	<i>-tám</i>	<i>-tá</i>
उत्तमपुरुषः	<i>-am</i>	<i>-vá</i>	<i>-má</i>

Notes on these endings:

- The “*hic-et-nunc* particle” does not appear on the endings of the singular, or of the plural *prathamapurusaḥ*.
- The singular ending of the *uttamapurusaḥ* is *-am*, which derives from **-m* (the primary ending without *-i*); it is taught as *-am* because it takes this form after consonants, whereas after vowels, it is *-m*.

- Similarly, the element *-h* of the dual and plural *uttamapurusaḥ* endings does not appear, as it does in the primary endings.
- The plural ending of the *prathamapurusaḥ* has two variants. The first, *-án*, is used in the imperfect (लृङ्), and it is simply **-ánt*, after the application of the rule that no Sanskrit word can end in more than one consonant.
- The second plural ending of the *prathamapurusaḥ*, *-úh*, is used in the aorist (लृट्) and optative (लृङ्). Historically, it derives from **-rs*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	<i>-tu</i>	<i>-tām</i>	<i>-ántu / -ātu</i>
मध्यमपुरुषः	<i>-dhí / -hí / ∅</i>	<i>-tām</i>	<i>-tá</i>
उत्तमपुरुषः	<i>-āni</i>	<i>-āva</i>	<i>-āma</i>

The imperative endings are most similar to the secondary endings, with the following differences:

- The primary endings that terminate in an element *-i*—the three singular endings as well as the plural of the *prathamapurusaḥ*—take a similar element in the imperative, namely, *-u*.
- The singular of the *madhyamapurusaḥ*, however, always takes a special ending in the imperative:
 - after the stem-final vowel *-a-* (the so-called “thematic vowel”), the ending is \emptyset .
 - otherwise, the ending is *-dhí* (after consonants) and *-hí* after vowels (compare Greek *-thi*)

- There is no imperative of the *uttamaṇṇuṣaḥ*. The subjunctive forms are used instead.

§18.2. आत्मनेपदम् endings

This section will explain the आत्मनेपदम् endings for the various लकाराः, starting, once again, from the endings that Pāṇini teaches as basic:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	त	आताम्	झ
मध्यमपुरुषः	थास्	आथाम्	ध्वम्
उत्तमपुरुषः	इङ्	वहि	महिङ्

These are the basic आत्मनेपदम् endings, which can also be referred to using Pāṇini's abbreviation तङ्. In contrast to the परस्मैपदम् endings, Pāṇini teaches the *secondary* endings as basic, and has rules (e.g., *Aṣṭādhyāyī* 3.4.79) which change the secondary endings to primary endings in the लकाराः that require them. For the sake of convenience, here are the *primary* endings of the आत्मनेपदम्, that is, those which are used in the present indicative (लट्):

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	- <i>té</i>	- <i>átē</i>	- <i>ántē</i> / - <i>átē</i>
मध्यमपुरुषः	- <i>sé</i>	- <i>áthē</i>	- <i>dhvē</i>
उत्तमपुरुषः	- <i>é</i>	- <i>váhē</i>	- <i>máhē</i>

Notes on these endings:

- The element *-i*, which characterizes a certain set of primary endings in the परस्मैपदम्, also characterizes a set of primary endings in the आत्मनेपदम्. In the आत्मनेपदम्, however, this element almost always combines with a final vowel *-a* to yield *-ē*. The endings with this element can thus be analyzed as follows:

– *-tá + i* → *-tḗ* (एक० प्र०), cp. Greek *-εται*

– *-sá + i* → *-sḗ* (एक० मध्य०)

– *-á + i* → *-ḗ* (एक० उत्त०)

– *-ánta + i* → *-ántḗ* (बहु० प्र०), cp. Greek *-ονται*, Hittite *-anta*

- The terminal element *-ē* appears throughout the primary endings of the आत्मनेपदम्, even when it cannot be analyzed as the result of combining a final *-a* with a particle *-i*. Several of the corresponding secondary endings do not end in a *-a* but in *-am* or *-ām*.
- Several elements are recognizably the same as the परस्मैपदम् endings:
 - *-t-* as a marker of the एक० प्र० (here followed by a vowel *-a*)
 - *-s-* as a marker of the एक० मध्य० (here followed by a vowel *-a*)
 - *-nt-* as a marker of the बहु० प्र० (here followed by a vowel *-a*)
 - *-va-* as a marker of the द्वि० उत्त० (here followed by an element *-hi / -hē*)
 - *-ma-* as a marker of the बहु० उत्त० (here followed by an element *-hi / -hē*)

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	<i>-tá</i>	<i>-átām</i>	<i>-ánta / -átal / -rán</i>
मध्यमपुरुषः	<i>-tháḥ</i>	<i>-áthām</i>	<i>-dhvám</i>
उत्तमपुरुषः	<i>-í / -á</i>	<i>-váhi</i>	<i>-máhi</i>

The similarities of these endings to those of the परस्मैपदम् have been discussed above. When some relationship is evident between the forms, the principal difference is that the secondary endings of the आत्मनेपदम्, in contrast to those of the परस्मैपदम्, are followed by an element *-a* (extended to *-ē* in the primary endings) or *-hi* (extended, probably analogically, to *-hē* in the primary endings). A number of other points:

§18.3. The optative suffix

As noted above, the optative (लृङ्) always receives the “secondary” endings, like the aorist and imperfect. The optative, however, always includes an element *between* the verbal stem and the secondary endings which serves as the marker of this mood.

There are *two* related forms of this marker, या and ई. The former is used only in *athematic* verbs, that is, verbs belonging to classes 2, 3, 5, 7, 8 and 9, and then only in the so-called *strong* forms, i.e., the *singular* forms of the *parasmaipadām*. The marker *ī* is used in all other contexts, including in all of the thematic conjugations, where it combines with the stem-final vowel to form the ending *ē*.

NOTE: The marker of the optative in Indo-European was **-ih₁-* in the zero grade and **-yeh₁-* in the full grade.

§19. The past-tense augment

The past tenses—that is, the imperfect (लृङ्) and the aorist (लृङ्)—employ an *augment* that appears *prior to* the verbal form, although *after* any verbal prefixes. This augment, which Pāṇini teaches as अट्, is generally a short vowel *a*:

- अकरोत् “he did”
- अकार्षीत् “id.”

However, in the case of verbal roots beginning with a vowel, the combination of augment and initial vowel always results in *vr̥ddhiḥ* of the initial vowel:

- ऐच्छत् “he desired” (√इष्)
- ऐत् “he went” (√इ)
- आच्छत् “he went” (√ऋच्छ्)

In a small number of other cases, the augment is lengthened before an initial consonant of a verb:

- आवर् “he blocked”

NOTE: The lengthening of the augment before a consonant is an effect of a root-initial laryngeal (in the above example, the proto-form is **é-h₂u~~er~~-t*).

§20. The present system

The *present system* refers to a family of verbal forms that have in common the fact that they are formed from the same *verbal stem*, which is conventionally called the *present stem*. (Not all of these forms have a reference to the present time, however.) The verbal forms that belong to the present system are:

- the present indicative, or लट्;
- the imperfect indicative, or लङ्;
- the imperative, or लोट्; and
- the optative, or लिट्.

The present stem is formed in different ways from different verbal roots, and hence we talk about ten *classes* of verbs. A verb belongs to a class solely by virtue of how its present

stem is formed, which is to say, which present-stem-forming suffix (विकरणः) is added to the verbal root before the endings of the mood-tense complexes (लकाराः) that belong to the present system. In part, a verb's belonging to one or the other class is determined by *phonological* considerations; in part, it is also determined by *semantic* considerations. The reason is that some of the present-stem-forming suffixes (विकरणाः) had particular meanings—generally, nasal-infix presents are more “transitive,” and *-ya-* presents are more “stative” or “reflexive”—but most of those semantic nuances have been lost. A verb's membership in one (or more) of the ten classes must be memorized.

The ten classes are distinguished, as noted above, by the present-stem-forming suffix, or विकरणः, that is used to form the present stem. The following suffixes are used:

1. शप् (*Aṣṭādhyāyī* 3.1.68): Unaccented *-a-* which causes the root to be accented and full-grade (*guṇāḥ*). The list of verbs of this first class is called भ्वादिगणः.
2. **No suffix** (technically: *luk-*elision of the formant *ŚaP*, cf. *Aṣṭādhyāyī* 2.4.72). The root takes the full grade (*guṇa*) in the strong form of the stem, and the zero grade in the weak form of the stem. The list of verbs of this second class is called अदादिगणः.
3. **No suffix** (technically: *slu-*elision of the formant *ŚaP*, cf. *Aṣṭādhyāyī* 2.4.75). Reduplication (अभ्यासः) of the verbal root, which takes the full-grade (or *guṇa*) form in the strong forms of the stem, and the zero-grade form in the weak forms of the stem. The list of verbs of this third class is called ह्वादिगणः.
4. श्यन्: An unaccented suffix *-ya-*. The root takes its weakest (zero) grade before this suffix, but it is accented. The list of verbs of this fourth class is called दिवादिगणः.
5. श्च (*Aṣṭādhyāyī* 3.1.73): The suffix is *-nō-* in the strong form of the stem, and *-nu-* in the weak form of the stem. The list of verbs of this fifth class is called स्वादिगणः.

6. ञ (Aṣṭādhyāyī 3.1.77): The suffix is an accented *-á-*, and the root stays in the zero grade. The list of verbs of this sixth class is called तुदादिगणः.
7. ञम् (Aṣṭādhyāyī 3.1.78): The *vikaraṇaḥ* is actually an infix *-na-* before the final consonant in the strong forms, and *-n-* in the weak forms. The list of verbs of this seventh class is called रुधादिगणः.
8. उ (Aṣṭādhyāyī 3.1.79): The suffix is *-ō-* in the strong form of the stem, and *-u-* in the weak form. The list of verbs of this eighth class is called तनादिगणः.
9. ञा (Aṣṭādhyāyī 3.1.81): A suffix *-nā-* in the strong form of the stem, and *-nī-* in the weak form of the stem. The list of verbs of this ninth class is called कृयादिगणः.
10. णिच् (Aṣṭādhyāyī 3.1.25): The root is first suffixed with णिच्, which induces *N-vṛddhiḥ* in the root syllable; then the suffixed root takes the *vikaraṇaḥ* ञम्, which causes the preceding suffix to undergo *guṇāḥ*. Hence the entire suffix appears as *-áya-*. The list of verbs of this tenth class is called चुरादिगणः.

Full paradigms of all of the mood-tense complexes लकारः belonging to the present system will follow for verbs belonging to each of the ten classes.

§20.1. The first class (भ्वादिगणः)

Formed with a *vikaraṇaḥ -a-* that induces *guṇa* on the root, if the root is capable of taking *guṇāḥ*. (Recall that “superheavy” roots, which contain either a long vowel followed by a consonant, like √जीव्, or any vowel followed by two consonants, like √निन्द्, cannot take *guṇāḥ*.) The root is accented.

The first class is the largest. Here are some of the most common verbs:

- √भू “become” (*parasmaipadi*)

-
- √स्मृ “remember” (*parasmaipadi*)
 - √नद् “hum” (*parasmaipadi*)
 - √निन्द् “blame” (*parasmaipadi*)
 - √व्रज् “wander” (*parasmaipadi*)
 - √तप् “burn” (*parasmaipadi*)
 - √चम् “sip” (*parasmaipadi*)
 - √नम् “bow” (*parasmaipadi*)
 - √जि “win” (*parasmaipadi*)
 - √दह् “burn” (*parasmaipadi*)
 - √धाव् “run” (*parasmaipadi*)
 - √सृ “spread” (*parasmaipadi*)
 - √त् “cross” (*parasmaipadi*)
 - √वद् “speak” (*parasmaipadi*)
 - √वस् “dwell” (*parasmaipadi*)
 - √पत् “fall” (*parasmaipadi*)
 - √ईक्ष् “fall” (*ātmanēpadi*)
 - √ईह् “desire” (*ātmanēpadi*)
 - √द्युत् “shine” (*ātmanēpadi*)
 - √स्यन्द् “sprinkle” (*ātmanēpadi*)
 - √रम् “enjoy” (*ātmanēpadi*)
 - √त्वर “hurry” (*ātmanēpadi*)

- √नी “lead” (*ubhayapadi*)
- √सह “bear” (*ātmanēpadi*)
- √खन् “dig” (*ubhayapadi*)
- √ह “take” (*ubhayapadi*)
- √यज् “worship” (*ubhayapadi*)
- √वप् “sow” (*ubhayapadi*)
- √वह् “carry” (*ubhayapadi*)
- √श्रि “betake oneself” (*ubhayapadi*)

A number of roots form their present stem with a suffix *cha*. They are considered to belong to the first class, if the root syllable is accented, or the sixth class, if the suffix is accented. The root always takes the *zero grade* before this suffix. See (*Aṣṭādhyāyī* 7.3.77).

- √गम् “go” (*parasmaipadi*) → गच्छ-
- √यम् “stop” (*parasmaipadi*) → यच्छ-
- √ऋ “go” (*parasmaipadi*) → ऋच्छ- (cf. ἔρχομαι)
- √प्रच्छ “go” (*parasmaipadi*) → पृच्छ- (cf. poscō)
- √इष् “want” (*parasmaipadi*) → इच्छ-

NOTE: This suffix was originally a present stem forming suffix (*-s $\acute{k}e$ -/*-s $\acute{k}o$ -), and is attested in several other Indo-European languages. It probably had an “inchoative” sense, indicating that the agent is just beginning the action: hence *g \acute{m} -s $\acute{k}e$ -*ti* “he sets out.”

A very small number of verbal roots in this class form their present stem with an irregular kind of reduplication:

- √स्था “stand” (*parasmaipadi*) → तिष्ठ- (cf. ἵστημι)

- √पा “drink” (*parasmaipadi*) → पिबति-
- √भ्रा “sniff” (*parasmaipadi*) → जिब्र-

The following roots, historically ending in a laryngeal, form the present stem by lengthening the root vowel:

- √क्रम् “stride” (*parasmaipadi*) → क्रामति

The first class is exemplified with √भू “become” in the *parasmaipadām* and रुच् “shine” in the *ātmanēpadām*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	भवति	भवतः	भवन्ति
मध्यमपुरुषः	भवसि	भवथः	भवथ
उत्तमपुरुषः	भवामि	भवावः	भवामः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	रोचते	रोचेते	रोचन्ते
मध्यमपुरुषः	रोचसे	रोचेथे	रोचध्वे
उत्तमपुरुषः	रोचे	रोचावहे	रोचामहे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अभवत्	अभवताम्	अभवन्
मध्यमपुरुषः	अभवः	अभवतम्	अभवत
उत्तमपुरुषः	अभवम्	अभवाव	अभवाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अरोचत	अरोचेताम्	अरोचन्त
मध्यमपुरुषः	अरोचथाः	अरोचेथाम्	अरोचध्वम्
उत्तमपुरुषः	अरोचे	अरोचावहि	अरोचामहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	भवतु	भवताम्	भवन्तु
मध्यमपुरुषः	भव	भवतम्	भवत
उत्तमपुरुषः	[भवानि]	[भवाव]	[भवाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	रोचताम्	रोचेताम्	रोचन्ताम्
मध्यमपुरुषः	रोचस्व	रोचेथाम्	रोचध्वम्
उत्तमपुरुषः	[रोचै]	[रोचावहै]	[रोचामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	भवेत्	भवेताम्	भवेयुः
मध्यमपुरुषः	भवेः	भवेतम्	भवेत
उत्तमपुरुषः	भवेयम्	भवेव	भवेम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	रोचेत	रोचेयाताम्	रोचेरन्
मध्यमपुरुषः	रोचेथाः	रोचेयाथाम्	रोचेध्वम्
उत्तमपुरुषः	रोचेय	रोचेवहि	रोचेमहि

§20.2. The second class (अदादिगणः)

This is the *root* present. There is no present-stem forming suffix: the default suffix, णप् (*Aṣṭādhyāyī* 3.1.68), is deleted by *Aṣṭādhyāyī* 2.4.72. There is a distinction in *vowel gradation* for roots of this class: a *strong stem*, which generally features a full-grade root (or *gunābh*), and a *weak stem*, which generally features a zero-grade root. The strong stem is used before the singular endings of the *parasmaipadām* only, i.e., those endings that Pāṇini teaches with the *anubandha* प् (त्तिप्, सिप्, and मिप्), and that, too, only in the *present indicative* (लट्) and *imperfect indicative* (लृट्), as well as certain forms of the *imperative* (लोट्), namely, all forms of the first person (which are taken from the subjunctive) as well as the third person singular of the *parasmaipadām*.

If the verb is accented (see above), then the accent is on the *root* when the strong stem is used, i.e., in the singular forms of the *parasmaipadām*; the accent is on the *ending* in the other forms.

Here is a list of relatively common second class verbs, which I provide with their third persons singular and plural::

- √अद् “eat” (*parasmaipadi*), अत्ति, अदन्ति
- √या “go” (*parasmaipadi*), याति, यान्ति
- √हन् “kill” (*parasmaipadi*), हन्ति, म्रन्ति
- √वश् “desire” (*parasmaipadi*), वष्टि, उशन्ति
- √आस् “sit” (*ātmanēpadi*), आस्ते, आसते
- √विद् “know” (*parasmaipadi*), वेत्ति, विदन्ति
- √इ “go” (*parasmaipadi*), एति यन्ति
- √अस् “be” (*parasmaipadi*), अस्ति, सन्ति
- √वच् “speak” (*parasmaipadi*), वक्ति (no third person plural)

- √शास् “command” (*parasmaipadi*), शास्ति, शासति
- √ईश् “rule” (*ātmanēpadi*), ईशे, ईशते
- √ब्रू “speak” (*ubhayapadi*), ब्रवीति or ब्रूते, ब्रुवन्ति or ब्रुवते

To exemplify the paradigm, we use √इ “go” in the *parasmaipadām* and √आस् “sit” in the *ātmanēpadām*.

NOTE: All of the roots beginning with a long vowel in this class, including √आस्, maintain their accent on the root throughout.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	एति	इतः	यन्ति
मध्यमपुरुषः	एषि	इथः	इथ
उत्तमपुरुषः	एमि	इवः	इमः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आस्ते	आसाते	आसते
मध्यमपुरुषः	आस्से	आसाथे	आद्धे
उत्तमपुरुषः	आसे	आस्वहे	आस्महे

NOTE: The verb √इ has the strong stem ए and the weak stem इ. The strong stem only occurs before endings that begin with a consonant. The weak stem, however, occurs before both consonant-initial and vowel-initial endings. In the *parasmaipadām*, the only vowel-initial ending is *-anti*, and there is a special rule (*Aṣṭādhyāyī* 6.4.81) that tells us that the vowel of the stem, *i*, is replaced by the corresponding semivowel, *y*, before this ending, and hence we have third-person plural form यन्ति.

In the *ātmanēpadām*, however, there are many endings that begin with vowels. The *ātmanēpadām* forms of this verb only occur after a verbal prefix, and in this context, by a special rule, the stem *i*

is not replaced by the corresponding semivowel *y*, but by the sequence *iy* (which keeps the root as a distinct syllable), according to *Aṣṭādhyāyī* 6.4.77. Hence the forms in the *ātmanēpadām* would be इये, इयाथे, इयाते, इयते.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	ऐत्	ऐताम्	आयन्
मध्यमपुरुषः	ऐः	ऐताम्	ऐत
उत्तमपुरुषः	आयम्	ऐव	ऐम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आस्त	आसाताम्	आसत
मध्यमपुरुषः	आस्थाः	आसाथाम्	आद्धम्
उत्तमपुरुषः	आसि	आस्वहि	आस्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	एतु	इताम्	यन्तु
मध्यमपुरुषः	इहि	इतम्	इत
उत्तमपुरुषः	[अयानि]	[अयाव]	[अयाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आस्ताम्	आसाताम्	आसताम्
मध्यमपुरुषः	आस्त्व	आसाथाम्	आद्धम्
उत्तमपुरुषः	[आसै]	[आसावहै]	[आसामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	इयात्	इयाताम्	इयुः
मध्यमपुरुषः	इयाः	इयातम्	इयात
उत्तमपुरुषः	इयाम्	इयाव	इयाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आसीत्	आसीयाताम्	आसीरन्
मध्यमपुरुषः	आसीथाः	आसीयाथाम्	आसीध्वम्
उत्तमपुरुषः	आसीय	आसीवहि	आसीमहि

§20.3. The third class (ह्लादिगणः)

This is the “reduplicating” present, so called because it is formed with a reduplicated syllable, or (अभ्यासः), which is always a *modified version of the root*. The rules for the formation of the reduplicated syllable are almost exactly the same as for the reduplication of the perfect. Specifically:

- No aspiration is permitted in the reduplicated syllable. Aspirate stops become their corresponding unaspirated forms, and the voiced aspirate *h* becomes *j*.
- The reduplicated syllable itself is *always light*. This means that vowel of the root, if it is long, is shortened; if it is a diphthong (*ē, ō, ai* and *au*), it becomes the corresponding simple vowel (*i* or *u*). Generally the vowel *ā* in the root syllable becomes *a* in the reduplicated syllable (e.g., ददाति from √दा), but in a few roots, it becomes *i* (e.g., मिमाति from √मा). This rule also means that *any root-final consonants are lost*, since they would make the reduplicated syllable heavy.
- No complex consonants are permitted in the reduplicated syllable. Generally, if the onset of the root is C_1C_2 , the onset of the reduplicated syllable is C_1 (e.g., जिह्वेति

from √ही). If, however, root begins with a sibilant–stop combination, then the stop, rather than the sibilant, appears in the reduplicated syllable.

- Velar (कण्ठ्यः) consonants are replaced by their palatal (तालव्यः) counterparts. This is because the vowel of the reduplicated syllable in Indo-European was high (either *e or *i), which caused the palatalization of a preceding velar stop in Indo-Iranian.

The examples are √हु “pour out” for *parasmaipadām* and √मा “measure” for *ātmanēpadām*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	जुहोति	जुहुतः	जुह्वति
मध्यमपुरुषः	जुहोषि	जुहुथः	जुहुथ
उत्तमपुरुषः	जुहोमि	जुहुवः	जुहुमः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मिमीते	मिमाते	मिमते
मध्यमपुरुषः	मिमीषे	मिमाथे	मिमीध्वे
उत्तमपुरुषः	मिमे	मिमीवहे	मिमीमहे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अजुहोत्	अजुहुताम्	अजुहवुः
मध्यमपुरुषः	अजुहोः	अजुहुतम्	अजुहुत
उत्तमपुरुषः	अजुहवम्	अजुहुव	अजुहुम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अमिमीत	अमिमाताम्	अमिमत्
मध्यमपुरुषः	अमिमीथः	अमिमाथाम्	अमिमीध्वम्
उत्तमपुरुषः	अमिमि	अमिमीवहि	अमिमीमहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	जुहोतु	जुहुताम्	जुह्वतु
मध्यमपुरुषः	जुहुधि	जुहुतम्	जुहुत
उत्तमपुरुषः	[जुह्वानि]	[जुह्वान्]	[जुह्वाम्]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मिमिताम्	मिमाताम्	मिमताम्
मध्यमपुरुषः	मिमिष्व	मिमाथाम्	मिमिध्वम्
उत्तमपुरुषः	[मिमै]	[मिमावहै]	मिमामहै

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	जुहुयात्	जुहुयाताम्	जुहुयुः
मध्यमपुरुषः	जुहुयाः	जुहुयातम्	जुहुयात्
उत्तमपुरुषः	जुहुयाम्	जुहुयाव	जुहुयाम्

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मिमीत	मिमीयाताम्	मिमीरन्
मध्यमपुरुषः	मिमीथाः	मिमीयाथाम्	मिमीध्वम्
उत्तमपुरुषः	मिमीय	मिमीवहि	मिमीमहि

§20.4. The fourth class (दिवादिगणः)

The fourth class (“[the list of verbal roots] which begins with *div*”) forms its present stem with the present-stem-forming suffix रयन् (*Aṣṭādhyāyī* 3.1.69). This has the following properties:

- The form of the present-stem-forming suffix is an unaccented *-ya-*.
- The suffix requires that the root be in the *zero grade*. Hence:
 1. No *guṇāḥ* or *vṛddhiḥ* applies to the verbal root.
 2. If the verbal root is taught in a full-grade form (e.g., *tam*) then it will go into the corresponding zero-grade form (e.g., *tām*).
- The accent is on the root syllable.

Here is a list of relatively common fourth class verbs:

- √नश् “be lost” (*parasmaipadi*)
- √शुध् “be hungry” (*parasmaipadi*)
- √तृप् “be satisfied” (*parasmaipadi*)
- √नृत् “dance” (*parasmaipadi*)
- √सिक् “sew” (*parasmaipadi*)
- √दिव् “gamble” (*parasmaipadi*)
- √मन् “think” (*ātmanēpadi*)
- √नह् “tie up, bind” (*parasmaipadi*)
- √पुष् “nourish” (*parasmaipadi*) or “be nourished” (*ātmanēpadi*)

The root √श्रम् “become tired” lengthens its vowel when the present stem forming suffix is added, hence श्राम्यति.

The forms are exemplified with √पुष “nourish” in the *parasmaipadām* and √मन् “think” in the *ātmanēpadām*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	पुष्यति	पुष्यतः	पुष्यन्ति
मध्यमपुरुषः	पुष्यसि	पुष्यथः	पुष्यथ
उत्तमपुरुषः	पुष्यामि	पुष्यावः	पुष्यामः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मन्यते	मन्येते	मन्यन्ते
मध्यमपुरुषः	मन्यसे	मन्येथे	मन्यध्वे
उत्तमपुरुषः	मन्ये	मन्यावहे	मन्यामहे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अपुष्यत्	अपुष्यताम्	अपुष्यन्
मध्यमपुरुषः	अपुष्यः	अपुष्यतम्	अपुष्यत
उत्तमपुरुषः	अपुष्यम्	अपुष्याव	अपुष्याम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अमन्यते	अमन्येताम्	अमन्यन्त
मध्यमपुरुषः	अमन्यथाः	अमन्येथाम्	अमन्यध्वम्
उत्तमपुरुषः	अमन्ये	अमन्यावहि	अमन्यामहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	पुष्यतु	पुष्यताम्	पुष्यन्तु
मध्यमपुरुषः	पुष्य	पुष्यतम्	पुष्यत
उत्तमपुरुषः	[पुष्यानि]	[पुष्याव]	[पुष्याम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मन्यताम्	मन्येताम्	मन्यन्ताम्
मध्यमपुरुषः	मन्यस्व	मन्येथाम्	मन्यध्वम्
उत्तमपुरुषः	[मन्यै]	[मन्यावहै]	[मन्यामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	पुष्येत्	पुष्येताम्	पुष्येयुः
मध्यमपुरुषः	पुष्येः	पुष्येतम्	पुष्येत
उत्तमपुरुषः	पुष्येयम्	पुष्येव	पुष्येम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मन्येत	मन्येयाताम्	मन्येरन्
मध्यमपुरुषः	मन्येथाः	मन्येयाथाम्	मन्येध्वम्
उत्तमपुरुषः	मन्येय	मन्येवहि	मन्येमहि

§20.5. The fifth class (स्वादिगणः)

This class adds the stem-forming suffix (विकरणः) *-nó-/-nu-* to the verbal root. It is essentially identical to the eighth class, which adds the suffix *-ó-/-u-*. The strong forms are built with the full-grade suffix *-nó-*, and the weak forms, with the zero-grade suffix *-nu-*.

The accent is on the present-stem forming suffix in the strong forms and on the ending in the weak forms.

Roots of this class behave somewhat differently in their **internal sandhi** depending on whether they end in a vowel or a consonant. For roots that end in a vowel, the final *u* of the stem becomes *v* before endings that begin with a vowel (e.g., चिन्वन्ति). This final *u* also be dropped before the endings of the first person dual and plural (e.g., चिन्मः or चिनुमः).

For roots that end in a consonant, however, the consonant cluster *-C-n-* prevents the final *u* of the stem from becoming *v* (because that would result in an awkward consonant cluster *-Cnv-*). Instead, we have *uvaṅ*-sandhi, where the final *u* is replaced by *uv* before endings that begin with a vowel (e.g., आमुवन्ति). The *u* of the stem is retained before the endings of the first person dual and plural (e.g., आमुमः).

Here is a list of relatively common fifth class verbs:

- √शक् “be capable” (*parasmaipadi*)
- √श्रु “hear” (*parasmaipadi*); though this forms its stem as if from शृ
- √आप् “obtain” (*parasmaipadi*)
- √अस् “pervade” (*ātmanēpadi*)
- √सु “press” (*ubhayapadi*)
- √चि “collect” (*ubhayapadi*)
- √स्तृ “cover” (*ubhayapadi*)
- √वृ “choose” (*ubhayapadi*)

The paradigms are given using √आप् “obtain” for the *parasmaipadám* and √चि “gather” for the *ātmanēpadám*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आप्नोति	आप्नुतः	आप्नुवन्ति
मध्यमपुरुषः	आप्नोषि	आप्नुथः	आप्नुथ
उत्तमपुरुषः	आप्नोमि	आप्नुवः	आप्नुमः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	चिनुते	चिन्वाते	चिन्वते
मध्यमपुरुषः	चिनुषे	चिन्वाथे	चिनुध्वे
उत्तमपुरुषः	चिन्वे	चिन्वहे	चिन्महे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आप्नोत्	आप्नुताम्	आप्नुवन्
मध्यमपुरुषः	आप्नोः	आप्नुतम्	आप्नुत
उत्तमपुरुषः	आप्नुवम्	आप्नुव	आप्नुम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अचिनुत	अचिन्वाताम्	अचिन्वत
मध्यमपुरुषः	अचिनुथाः	अचिन्वाथाम्	अचिनुध्वम्
उत्तमपुरुषः	अचिन्वि	अचिन्वहि	अचिन्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आप्नोतु	आप्नुताम्	आप्नुवन्तु
मध्यमपुरुषः	आप्नु	आप्नुतम्	आप्नुत
उत्तमपुरुषः	[तनवानि]	[तनवाव]	[तनवाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	चिनुताम्	चिन्वाताम्	चिन्वथाम्
मध्यमपुरुषः	चिनुष्व	चिन्वाथाम्	चिनुध्वम्
उत्तमपुरुषः	[चिनवै]	[चिनवावहै]	[चिनवामहि]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आमुयात्	आमुयाताम्	आमुयुः
मध्यमपुरुषः	आमुयाः	आमुयातम्	आमुयात
उत्तमपुरुषः	आमुयाम्	आमुयाव	आमुयाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	चिन्वीत्	चिन्वीयाताम्	चिन्वीरन्
मध्यमपुरुषः	चिन्वीथाः	चिन्वीयाथाम्	चिन्वीमहि
उत्तमपुरुषः	चिन्वीय	चिन्वीवहि	चिन्वीमहि

§20.6. The sixth class (तुदादिगणः)

The sixth class (“[the list of verbal roots] which begins with *tud*”) forms its present stem with the present-stem-forming suffix श. This has the following properties:

- The form of the present-stem-forming suffix is an unaccented *-á-*.
- The suffix requires that the root be in the *zero grade*. Hence:
 1. No *gunāḥ* or *vṛddhiḥ* applies to the verbal root.
 2. If the verbal root is taught in a full-grade form (e.g., *prach*) then it will go into the corresponding zero-grade form (e.g., *pr̥ch*).

3. Typically these roots end in a consonant, but for roots that end in the vowel \bar{r} , the stem ends in $-irá-$.

- The accent is on the present-stem-forming suffix.

Here is a list of relatively common verbs that belong to the sixth class:

- $\sqrt{\text{विश्}}$ “enter” (*parasmaipadi*)
- $\sqrt{\text{दिश्}}$ “point out” (*parasmaipadi*)
- $\sqrt{\text{लिख्}}$ “write” (*parasmaipadi*)
- $\sqrt{\text{स्पृश्}}$ “touch” (*parasmaipadi*)
- $\sqrt{\text{कृ}}$ “scatter” (*parasmaipadi*)
- $\sqrt{\text{क्षिप्}}$ “throw” (*parasmaipadi*)
- $\sqrt{\text{विध्}}$ “worship” (*parasmaipadi*)
- $\sqrt{\text{लज्}}$ “be embarrassed” (*ātmanēpadi*)
- $\sqrt{\text{स्फुर्}}$ “tremble, flash, throb, pulse” (*parasmaipadi*)
- $\sqrt{\text{विश्}}$ “enter” (*parasmaipadi*)
- $\sqrt{\text{सृज्}}$ “emit” (*parasmaipadi*)
- $\sqrt{\text{कृष्}}$ “plow” (*ubhayapadi*)

The following roots form their present stem by inserting a nasal between the vowel and the final consonant (*Aṣṭādhyāyī* 7.1.59):

- $\sqrt{\text{मुञ्च}}$ “release” (*ubhayapadi*) → मुञ्च-
- $\sqrt{\text{लुप्}}$ “cut” (*ubhayapadi*) → लुप्-
- $\sqrt{\text{विद्}}$ “find” (*ubhayapadi*) → विन्द-

- √लिप् “smear” (*ubhayapadi*) → लिम्प-
- √सिञ्च “sprinkle” (*ubhayapadi*) → सिञ्च-
- √कृत् “cut” (*parasmaipadi*) → कृन्त-
- √खिद् “oppress” (*parasmaipadi*) → खिन्द-
- √पिश् “form” (*parasmaipadi*) → पिश-

The verbs listed as √प्रच्छ् and √इष् form their present stems as पृच्छति and इच्छति respectively. See the note on the verbs यच्छति and गच्छति under first-class verbs above.

The forms are exemplified with √सृज् “emit” in the *parasmaipadām* and √लज् “be embarrassed” in the *ātmanēpadām*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	सृजति	सृजतः	सृजन्ति
मध्यमपुरुषः	सृजसि	सृजथः	सृजथ
उत्तमपुरुषः	सृजामि	सृजावः	सृजामः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	लज्जते	लज्जते	लज्जन्ते
मध्यमपुरुषः	लज्जसे	लज्जथे	लज्जध्वे
उत्तमपुरुषः	लज्जे	लज्जावहे	लज्जामहे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	असृजत्	असृजताम्	असृजन्
मध्यमपुरुषः	असृजः	असृजतम्	असृजत
उत्तमपुरुषः	असृजम्	असृजाव	असृजाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अलज्जते	अलज्जेताम्	अलज्जन्त
मध्यमपुरुषः	अलज्जथाः	अलज्जेथाम्	अलज्जध्वम्
उत्तमपुरुषः	अलज्जे	अलज्जावहि	अलज्जामहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	सृजतु	सृजताम्	सृजन्तु
मध्यमपुरुषः	सृज	सृजतम्	सृजत
उत्तमपुरुषः	[सृजानि]	[सृजाव]	[सृजाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	लज्जताम्	लज्जेताम्	लज्जन्ताम्
मध्यमपुरुषः	लज्जस्व	लज्जेथाम्	लज्जध्वम्
उत्तमपुरुषः	[लज्जै]	[लज्जावहै]	[लज्जामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	सृजेत्	सृजेताम्	सृजेयुः
मध्यमपुरुषः	सृजेः	सृजेतम्	सृजेत
उत्तमपुरुषः	सृजेयम्	सृजेव	सृजेम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	लज्जेत	लज्जेयाताम्	लज्जेरन्
मध्यमपुरुषः	लज्जेथाः	लज्जेयाथाम्	लज्जेध्वम्
उत्तमपुरुषः	लज्जेय	लज्जेवहि	लज्जेमहि

§20.7. The seventh class (रुधादिगणः)

This class is sometimes called the ‘nasal infix’ class, because its stem-forming affix (विकरणः) is a nasal, which is not added onto the verbal root, but infixed between the root’s vowel and its final consonant.

In the strong forms, the infix full-grade form *-ná-*. In the weak forms, the infix takes the zero-grade form *-n-*. Note that, because the root ends in a consonant, there will be **internal sandhi** between the root and endings beginning with a consonant. Note, also, that the *-n-* of the infix is subject to retroflexion by NATI in its strong forms.

The accent is on the infix in the strong forms and on the ending in the weak forms.

Some of the most common roots in this class are:

- √रुध् “block” (*ubhayapadī*) → रुणध्-, रुन्ध्-
- √युञ्ज् “join” (*ubhayapadī*) → युनञ्ज्-, युञ्ज्-
- √भुञ्ज् “enjoy” (*ātmanēpadī*) → भुनञ्ज्-, भुञ्ज्-
- √हिस् “strike” (*parasmaipadī*) → हिंस्-, हिनस्-
- √शिष् “distinguish” (*parasmaipadī*) → शिनष्-, शिष्-
- √भञ्ज् “break” (*parasmaipadī*) → भनञ्ज्-, भञ्ज्-
- √अञ्ज् “annoint” (*parasmaipadī*) → अनञ्ज्-, अञ्ज्-

The following paradigms use the verb √रुध् “block” for *parasmaipadām* and √भुञ्ज् “enjoy” for *ātmanēpadām*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	रुणद्धि	रुन्दः	रुन्धन्ति
मध्यमपुरुषः	रुणत्सि	रुन्दः	रुन्द
उत्तमपुरुषः	रुणध्मि	रुन्ध्वः	रुन्ध्मः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	भुङ्क्ते	भुञ्जाते	भुञ्जते
मध्यमपुरुषः	भुङ्क्ते	भुञ्जाथे	भुङ्ग्ध्वे
उत्तमपुरुषः	भुञ्जे	भुञ्ज्वहे	भुञ्ज्महे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अरुणत्	अरुन्दाम्	अरुन्दन्
मध्यमपुरुषः	अरुणत्	अरुन्दम्	अरुन्द
उत्तमपुरुषः	अरुणधम्	अरुन्ध्व	अरुन्ध्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अभुङ्क्ते	अभुङ्जाताम्	अभुञ्जते
मध्यमपुरुषः	अभुङ्क्ताः	अभुञ्जाथाम्	अभुङ्ग्ध्वम्
उत्तमपुरुषः	अभुञ्जि	अभुञ्ज्वहि	अभुञ्ज्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	रुणद्भु	रुन्दाम्	रुन्धन्तु
मध्यमपुरुषः	रुन्द्धि	रुन्दम्	रुन्द
उत्तमपुरुषः	[रुणधानि]	[रुणधाव]	[रुणधाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	भुङ्गाम्	भुञ्जाताम्	भुञ्जताम्
मध्यमपुरुषः	भुङ्क्ष्व	भुञ्जाथाम्	भुङ्ग्ध्वम्
उत्तमपुरुषः	[भुनजै]	[भुनजावहै]	[भुनजामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	रुन्ध्यात्	रुन्ध्याताम्	रुन्ध्युः
मध्यमपुरुषः	रुन्ध्याः	रुन्ध्यातम्	रुन्ध्यात
उत्तमपुरुषः	रुन्ध्याम्	रुन्ध्याव	रुन्ध्याम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	भुञ्जीत	भुञ्जीयाताम्	भुञ्जीरन्
मध्यमपुरुषः	भुञ्जीथाः	भुञ्जीयाथाम्	भुञ्जीध्वम्
उत्तमपुरुषः	भुञ्जीय	भुञ्जीवहि	भुञ्जीमहि

§20.8. The eighth class (तनादिगणः)

The stem-forming affix (विकरणः) in this class is the vowel *u*, which takes the full-grade or *gunāḥ* form *-ō-* in the strong forms, and the zero-grade form *-u-* in the weak forms.

The accent is on the suffix in the strong forms and on the verbal ending in the weak forms.

This class of verbs is exactly parallel to the fifth class, which builds its strong forms with the affix *-nō-* and its weak forms with the affix *-nu-*.

NOTE: The primary verb of the eighth class, $\sqrt{\text{तन्}}$ “stretch,” historically was a *nu*-present. The root takes the zero-grade form before the suffix, so the inherited form would have been **tn-nu-* or **tn-néu-*. But because an inherited *n* between consonants develops into *a* in Sanskrit, the zero-

grade form of the root ends up looking like *ta*, and for convenience, the Sanskrit grammarians considered the *n* of the suffix to belong to the root.

The forms are exemplified with √तन् “stretch” in both the *parasmaipadām* and the *ātmanē-padām*.

In addition, the full paradigm of the verb √कृ “do” is given here, which presents a number of particularities: in the strong forms, the stem takes the form करो-, and in the weak forms, it appears as कुरु- or कुर-. The latter is the reflex of the zero-grade form *kr* before the stem-forming suffix *-u-*. In addition, the verb √कृ drops the stem-final *u* before the endings of the first person dual and plural (like fifth-class verbs such as √चि, √सु, etc.).

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तनोति	तनुतः	तन्वन्ति
मध्यमपुरुषः	तनोषि	तनुथः	तनुथ
उत्तमपुरुषः	तनोमि	तनुवः	तनुमः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तनुते	तन्वाते	तन्वते
मध्यमपुरुषः	तनुषे	तन्वाथे	तनुध्वे
उत्तमपुरुषः	तन्वे	तनुवहे	तनुमहे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	करोति	कुरुतः	कुर्वन्ति
मध्यमपुरुषः	करोषि	कुरुथः	कुरुथ
उत्तमपुरुषः	करोमि	कुर्वः	कुर्मः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	कुरुते	कुर्वाते	कुर्वते
मध्यमपुरुषः	कुरुषे	कुर्वाथे	कुरुध्वे
उत्तमपुरुषः	कुर्वे	कुर्वहे	कुर्महे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अतनोत्	अतनुताम्	अतन्वन्
मध्यमपुरुषः	अतनोः	अतनुतम्	अतनुत
उत्तमपुरुषः	अतनुवम्	अतनुव	अतनुम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अतनुत	अतन्वाताम्	अतन्वत
मध्यमपुरुषः	अतनुथाः	अतन्वाथाम्	अतनुध्वम्
उत्तमपुरुषः	अतन्वि	अतनुवाहि	अतनुमहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अकरोत्	अकुरुताम्	अकुर्वन्
मध्यमपुरुषः	अकरोः	अकुरुतम्	अकुरुत
उत्तमपुरुषः	अकरवम्	अकुर्व	अकुर्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अकुरुत	अकुर्वाताम्	अकुर्वत
मध्यमपुरुषः	अकुरुथाः	अकुर्वाथाम्	अकुरुध्वम्
उत्तमपुरुषः	अकुर्वि	अकुर्वहि	अकुर्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तनोतु	तनुताम्	तन्वन्तु
मध्यमपुरुषः	तनु	तनुतम्	तनुत
उत्तमपुरुषः	[तनवानि]	[तनवाव]	[तनवाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तनुताम्	तन्वाताम्	तन्वताम्
मध्यमपुरुषः	तनुष्व	तन्वाथाम्	तनुध्वम्
उत्तमपुरुषः	[तनवै]	[तनवावहै]	[तनवामहि]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	करोतु	कुरुताम्	कुर्वन्तु
मध्यमपुरुषः	कुरु	कुरुतम्	कुरुत
उत्तमपुरुषः	[करवाणि]	[करवाव]	[करवाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	कुरुताम्	कुर्वाताम्	कुर्वताम्
मध्यमपुरुषः	कुरुष्व	कुर्वाथाम्	कुरुध्वम्
उत्तमपुरुषः	[करवै]	[करवावहै]	[करवामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तनुयात्	तनुयाताम्	तनुयुः
मध्यमपुरुषः	तनुयाः	तनुयातम्	तनुयात
उत्तमपुरुषः	तनुयाम्	तनुयाव	तनुयाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	तन्वीत	तन्वीयाताम्	तन्वीरन्
मध्यमपुरुषः	तन्वीथाः	तन्वीयाथाम्	तन्वीमहि
उत्तमपुरुषः	तन्वीय	तन्वीवहि	तन्वीमहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	कुर्यात्	कुर्याताम्	कुर्युः
मध्यमपुरुषः	कुर्याः	कुर्यातम्	कुर्यात
उत्तमपुरुषः	कुर्याम्	कुर्याव	कुर्याम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	कुर्वीत	कुर्वीयाताम्	कुर्वीरन्
मध्यमपुरुषः	कुर्वीथाः	कुर्वीयाथाम्	कुर्वीध्वम्
उत्तमपुरुषः	कुर्वीय	कुर्वीवहि	कुर्वीमहि

§20.9. The ninth class (त्रयादिगणः)

The present-stem forming suffix (*vikaraṇaḥ*) for this class is *-nā-* in the strong forms and *-nī-* (before consonants) or *-n-* (before vowels) in the weak forms. The accent is on the suffix in the strong forms and on the verbal endings in the weak forms.

NOTE: Historically, this class is a subset of the seventh class, which forms the stem with an infix *-na-* or *-n-*. The roots of the ninth class happened to end in a laryngeal in Indo-European, and the combinations of the infix and the final consonant, **-ne-H-* and **-n-H-*, resulted in *-nā-* and *-nī-* in Sanskrit.

The *parasmaipadām* forms are exemplified with √बन्ध् “bind,” and the *ātmanēpadām* forms with √ज्ञा “know.”

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	बध्नाति	बध्नीतः	बध्नन्ति
मध्यमपुरुषः	बध्नासि	बध्नीथः	बध्नीथ
उत्तमपुरुषः	बध्नामि	बध्नीवः	बध्नीमः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	जानीते	जानाते	जानते
मध्यमपुरुषः	जानीषे	जानाथे	जानीध्वे
उत्तमपुरुषः	जाने	जानीवहे	जानीमहे

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अबध्नात्	अबध्नीताम्	अबध्नन्
मध्यमपुरुषः	अबध्नाः	अबध्नीतम्	अबध्नीत
उत्तमपुरुषः	अबध्नाम्	अबध्नीव	अबध्नीम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अजानीत	अजानाताम्	अजानत
मध्यमपुरुषः	अजानीथाः	अजानाथाम्	अजानीध्वम्
उत्तमपुरुषः	अजानि	अजानीवहि	अजानीमहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	बध्नातु	बध्नीताम्	बध्नन्तु
मध्यमपुरुषः	बध्नीहि	बध्नीतम्	बध्नीत
उत्तमपुरुषः	[बध्नानि]	[बध्नाव]	[बध्नाम]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	जानीताम्	जानाताम्	जानताम्
मध्यमपुरुषः	जानीष्व	जानाथाम्	जानीध्वम्
उत्तमपुरुषः	[जानै]	[जानावहै]	[जानामहै]

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	बध्नीयात्	बध्नीयाताम्	बध्नीयुः
मध्यमपुरुषः	बध्नीयाः	बध्नीयातम्	बध्नीयात्
उत्तमपुरुषः	बध्नीयाम्	बध्नीयाव	बध्नीयाम्

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	जानीत	जानीयाताम्	जानीरौ
मध्यमपुरुषः	जानीथाः	जानीयाथाम्	जानीध्वम्
उत्तमपुरुषः	जानीय	जानीवहि	जानीमहि

§20.10. The tenth class (चुरादिगणः)

The tenth class mostly includes deverbial verbs, such as causative verbs. But it includes a number of roots that have no corresponding simple verb. These roots are listed in the चुरादिगणः.

They are formed with the present stem forming suffix *-áya-*, which induces $\text{N-v}^{\text{r}}\text{ddhi}$ on the root syllable. (In Pāṇini's system, these stems are formed by adding the suffix णिच् to the root, and then adding the suffix षप्, just as in the first class of verbs: णिच् strengthens the root syllable, and षप् strengthens the root-extension णिच् to *guṇáḥ*, hence the composite form *-áya-*.)

Some roots in this class are:

- √गण् “count” → गणय-
- √कथ् “say” → कथय-
- √चिन्त् “think” → चिन्तय-

The *parasmaipadām* forms are exemplified with √चुर् “steal.” There are no non-causative *ātmanēpadām* verbs.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	चोरयति	चोरयतः	चोरयन्ति
मध्यमपुरुषः	चोरयसि	चोरयथः	चोरयथ
उत्तमपुरुषः	चोरयामि	चोरयावः	चोरयामः

§20.11. The passive/impersonal of the present system (यक्)

All of the finite verb forms listed above are used “in reference to the agent of the verbal action” (कर्तरि प्रयोगः). Sanskrit, however, allows for any verb of any of the ten classes to be used either with reference to the patient of the verbal action (कर्मणि प्रयोगः), if the verb is transitive, or with reference to the verbal action itself (भावे प्रयोगः). (For more on these three constructions, see the agentive, patientive, and impersonal constructions below.)

In the present system, a passive/impersonal construction is available with a special present stem forming suffix (विकरणः) that Pāṇini calls यक्. The effect of the final diacritical letter (अनुबन्धः) क् is to put the root into the zero grade (see vowel gradation above). Once the **passive stem** (i.e., the stem used for both passive and impersonal expressions) has been formed by adding the suffix यक् to the verbal root in the zero grade, the *ātmanēpadām* endings are added, since these endings are obligatory whenever the verbal form expresses the patient or the verbal action *Aṣṭādhyāyī* 1.3.13.

The **formation** of the passive stem is generally straightforward: add the suffix *-ya-* to the unstrengthened verbal root:

- $\sqrt{\text{गम्}} + \text{यक्} [+ \text{ते}] \rightarrow \text{गम्यते}$ “goes” [impersonal]
- $\sqrt{\text{नी}} + \text{यक्} [+ \text{ते}] \rightarrow \text{नीयते}$ “is led”
- $\sqrt{\text{पच}} + \text{यक्} [+ \text{ते}] \rightarrow \text{पच्यते}$ “is cooked”
- $\sqrt{\text{पठ}} + \text{यक्} [+ \text{ते}] \rightarrow \text{पठ्यते}$ “is recited”

However the root sometimes undergoes changes. One type of change relates to the combination of root-final vowel with the *-ya-* of the present stem forming suffix. Before the suffix, the vowels *i* and *u* are lengthened, and the vowel *r* is changed to *ri*; a long \bar{r} is changed to \bar{ir} generally, but to \bar{ur} after labial consonants:

- $\sqrt{\text{श्रु}} + \text{यक्} [+ \text{ते}] \rightarrow \text{श्रूयते}$ “is heard”
- $\sqrt{\text{स्तु}} + \text{यक्} [+ \text{ते}] \rightarrow \text{स्तूयते}$ “is praised”
- $\sqrt{\text{चि}} + \text{यक्} [+ \text{ते}] \rightarrow \text{चीयते}$ “is piled”
- $\sqrt{\text{कृ}} + \text{यक्} [+ \text{ते}] \rightarrow \text{क्रियते}$ “is done”
- $\sqrt{\text{हृ}} + \text{यक्} [+ \text{ते}] \rightarrow \text{ह्रियते}$ “is taken”
- $\sqrt{\text{तृ}} + \text{यक्} [+ \text{ते}] \rightarrow \text{तीर्यते}$ “is crossed”
- $\sqrt{\text{पृ}} + \text{यक्} [+ \text{ते}] \rightarrow \text{पूर्यते}$ “is filled”

NOTE: An exception to this rule is $\sqrt{\text{शी}}$ “lie,” which forms the impersonal stem शय्य- (*Aṣṭādhyāyī* 7.4.22).

Verbal roots ending in *r* that begin with conjunct consonants, however, do not turn the *r* into *ri*, but into *ar*, probably to avoid an awkward combination of consonants such as *smr-*, (*Aṣṭādhyāyī* 7.4.29)

- $\sqrt{\text{स्मृ}} + \text{यक्} [+ \text{ते}] \rightarrow \text{स्मर्यते}$ “it is remembered”

The following verbs take संप्रसारणम् in the passive stem *Aṣṭādhyāyī* 6.1.15:

- √वच् + यक् [+ ते] → उच्यते “is said”
- √स्वप् + यक् [+ ते] → सुप्यते “sleeps” [impersonal]
- √वश् + यक् [+ ते] → उश्यते “is wished”
- √यज् + यक् [+ ते] → इज्यते “is sacrificed”
- √वप् + यक् [+ ते] → उप्यते “is sown”
- √वह् + यक् [+ ते] → उह्यते “is carried”
- √वस् + यक् [+ ते] → उप्यते “stays” [impersonal]
- √वे + यक् [+ ते] → ऊयते “is weaved”
- √व्ये + यक् [+ ते] → वीयते “is covered”
- √ह्वे + यक् [+ ते] → ह्वयते “is called”
- √वद् + यक् [+ ते] → उद्यते “is spoken”
- √श्वि + यक् [+ ते] → शूयते “expands” [impersonal]
- √ग्रह् + यक् [+ ते] → गृह्यते “is taken”
- √ज्या + यक् [+ ते] → जीयते “fails” [impersonal]
- √व्यध् + यक् [+ ते] → विध्यते “is pierced”
- √व्यच् + यक् [+ ते] → विच्यते “is surrounded”
- √व्रश्च + यक् [+ ते] → वृश्यते “is cut”
- √प्रच्छ् + यक् [+ ते] → पृच्छ्यते “is asked”
- √भ्रज्ज् + यक् [+ ते] → भृज्यते “is fried”
- √स्यम् + यक् [+ ते] → सिम्यते “cries” [impersonal]

The following verbal roots ending a long vowel (and historically in a laryngeal) form their zero-grade forms with *i* (*Aṣṭādhyāyī* 6.4.66):

- √दा + यक् [+ ते] → दीयते “is given”
- √धा + यक् [+ ते] → धीयते “is placed”
- √मा + यक् [+ ते] → मीयते “is measured”
- √स्था + यक् [+ ते] → स्थीयते “stands” [impersonal]
- √हा + यक् [+ ते] → हीयते “is abandoned”
- √गै + यक् [+ ते] → गीयते “is sung”
- √पा + यक् [+ ते] → पीयते “is drunk”
- √सो + यक् [+ ते] → सीयते “is finished”

NOTE: The verbal root √शास् forms the passive stem शिष्य- (*Aṣṭādhyāyī* 6.4.34).

Roots that have a *penultimate* nasal typically lose it in the passive:

- √रञ्ज् + यक् [+ ते] → रज्यते “is attached” [impersonal]
- √स्रस् + यक् [+ ते] → स्रस्यते “falls” [impersonal]
- √बन्ध् + यक् [+ ते] → बध्यते “is bound”

Among the roots ending in a nasal consonant, most do not change, but a few can optionally lose the final nasal and lengthen the preceding vowel (*Aṣṭādhyāyī* 6.4.43). All of these historically ended in a laryngeal consonant.

- √जन् + यक् [+ ते] → जन्यते or जायते “is born”
- √तन् + यक् [+ ते] → तन्यते or तायते “is stretched”
- √सन् + यक् [+ ते] → सन्यते or सायते “is attained”
- √खन् + यक् [+ ते] → खन्यते or खायते “is dug”

§20.12. The present participle

The verbal adjective of the present stem is formed by the addition of two suffixes: one corresponding to *parasmaipadám* forms, which Pāṇini calls शतृ, and one corresponding to *ātmanēpadám* forms, which Pāṇini calls शानच्. The form that these suffixes take depends on the class of the verb, according to the following rule:

- verbal roots belonging to the **thematic** classes—that is, those whose present-stem forming suffix ends in the thematic vowel *a*, including the first (भ्वादिगणः), the fourth (दिवादिगणः), the sixth (तुदादिगणः), and the tenth (चुरादिगणः)—affix the suffix *-at* in the *parasmaipadám* and the suffix *-māna-* in the *ātmanēpadám*;
- verbal roots belonging to all other classes, or **athematic** roots, affix the suffix *-at-* in the *parasmaipadám* and the suffix *-āna-* in the *ātmanēpadám*.

NOTE: The reason for the different suffixes of the *ātmanēpadám* participle in the thematic and non-thematic verb classes is the different development of the inherited suffix, **-mh₁no-*, after a vowel (as was always the case in the thematic verb classes) and after a consonant (as was often the case in the athematic verb classes). After a vowel, the suffix probably developed into **-mīna-*, for which there is some inscriptional evidence. After a consonant, it developed into **-āna-*. Analogy from the postconsonantal version of the suffix probably reshaped the postvocalic version.

The declension of the present participle of the *parasmaipadám* is covered above: in the masculine and nominative, it is inflected as a stem ending in *-ant* in the strong cases and *-at* in the weak cases. The feminine is formed with the suffix ङीप्. As noted in the section on the participle's declension, there is an important exception to general principle that the strong stem is formed with *-ant-* and the weak stem with *-at-*: in the participle of **verbs of the third class**, which have a reduplicated stem, the form of the stem is **always** *-at-*, even in the strong cases (although it is optionally *-ant-* in the nominative-accusative-vocative of the neuter).

Whether the feminine suffix is added onto the stem in *-ant-* or *-at-*, and also whether

the neuter nominative-accusative dual is formed by adding the suffix *-ī* onto the stem in *-ant-* or *-at-*, depends on the verb class. The general principle is as follows:

- verbs of the first, fourth, and tenth classes use the stem ending in *-ant-*;
- verbs of the second, third, fifth, seventh, eighth, and ninth classes use the stem ending in *-at-*;
 - (except verbs of the second class ending in *-ā*, which may use either the stem ending in *-at-* or the stem ending in *-ant-*)
- verbs of the sixth class may use either stem.

Class	Masculine	Feminine
1. भ्वादिः	भवन्	भवन्ती
2. अदादिः	अदन्	अदती
2. अदादिः	यान्	यान्ती / याती
3. ह्वादिः	जुह्वन्	जुह्वती
4. दिवादिः	दीव्यन्	दीव्यन्ती
5. स्वादिः	सुन्वन्	सुन्वती
6. तुदादिः	तुदन्	तुदन्ती / तुदती
7. रुधादिः	रुन्धन्	रुन्धती
8. तनादिः	तन्वन्	तन्वती
9. ऋयादिः	क्रीणन्	क्रीणती
10. चुरादिः	चोरयन्	चोरयन्ती

§21. The perfect system

The perfect system refers to a set of verbal forms that are derived with the tense-mood marker लिट्. Unlike the present system, there is no distinction between classes in the

perfect: all verbs are formed according to the same rules. Not all verbs, however, can be inflected in the perfect: verbs beginning with a vowel (besides *a* or *ā*) that is “superheavy” (i.e., a long vowel followed by a consonant, or a short vowel followed by two consonants), such as $\sqrt{\text{ईद}}$, $\sqrt{\text{उन्द}}$, $\sqrt{\text{एध}}$, and $\sqrt{\text{इन्ध}}$, cannot be inflected in this tense.

The forms of the perfect are generally used with reference to past time; Pāṇini prescribes the perfect tense for events in the past that one has not personally witnessed (*parōkṣē liṭ* in *Aṣṭādhyāyī* 3.2.115), and it is commonly used in discussing the remote past, or as a general narrative tense..

As with all other verbal forms, the perfect can be thought of as a combination of a stem with a given ending. As with athematic verbs in the present system, the verbs in the perfect generally distinguish between a **strong** and **weak** form of the stem, the former displaying a full-grade form of the root, and the latter a zero-grade form.

The characteristic of the perfect stem is not a **suffix**, but rather a **reduplication** (अभ्यासः) of the root. In addition, the perfect takes a distinctive set of **endings** in both the *parasmaipadām* and the *ātmanēpadām*.

§21.1. Reduplication

The basic principles of reduplication in the perfect are similar to that of third-class verbs in the present tense (see above): the reduplicated syllable is the verbal root, only subject to a greater number of phonological constraints, and subject to certain modifications:

- **No coda consonants.** If the root ends in a consonant, it is omitted from the reduplicated syllable. (This is due to a broader constraint on *heavy syllables*.)
 - *car* “go” → *ca-*
 - *pac* “go” → *pa-*
 - *labh* “touch” → *la-*

- **No long vowels.** If the vowel of the root is long, it is shortened in the reduplicated syllable. The short equivalents of \bar{e} and \bar{o} are i and respectively (*Aṣṭādhyāyī* 1.1.48). (This, too, is due to the aforementioned constraint on *heavy syllables*.) Note that the vowel of the reduplicated syllable of $\sqrt{\text{च}}$ is $ba-$ rather than $bu-$ (*Aṣṭādhyāyī* 7.4.73).

- $nī$ “lead” → $ni-$
- $sēv$ “serve” → $si-$
- $dā$ “give” → $da-$
- $bhū$ “become” → $ba-$

- **No vocalic r .** r becomes a .

- $vṛ$ “open” → $va-$
- $mṛ$ “die” → $ma-$

- ***Samprasāraṇam* if possible.** Roots that contain a semivowel followed by the vowel a and which are subject to *samprasāraṇam* form the reduplicated syllable with the corresponding vowel (*Aṣṭādhyāyī* 6.1.17). Roots that would form a *samprasāraṇam* stem with r use a in the reduplicated syllable because of the above constraint on r .

- vac “speak” → $u-$
- vad “speak” → $u-$
- vap “sow” → $u-$
- $vaś$ “wish” → $u-$
- vas “dwell” → $u-$
- $svap$ “sleep” → $su-$
- yaj “sacrifice” → $i-$
- $vyadh$ “strike” → $vi-$

-
- **No velars.** Velars turn into the corresponding palatal sounds. See the above examples, as well as:
 - *kāś* “shine” → *ca-*
 - *kṛ* “play” → *ca-*
 - *gāh* “dive into” → *ja-*
 - **No aspirates.** Aspirates are replaced by the corresponding non-aspirate sounds, and the phoneme *h* is replaced by *j*.
 - *bhū* “become” → *ba-*
 - *bhuj* “enjoy” → *bu-*
 - *dhā* “place” → *da-*
 - *hā* “leave” → *ja-*
 - **No conjunct consonants.** If the root begins with a conjunct consonant, it must be reduced to a single consonant. Generally the *least sonorous* consonant remains, where **stops** are the least sonorous of all, followed by **sibilants**, followed by **nasals**, and finally followed by **semivowels**, the least sonorous consonants. Here are examples of the possible combinations:
 - stop + sibilant:
 - *spṛś* “touch” → *pa-*
 - *skhal* “trip” → *ca-*
 - *kṣip* “throw” → *ci-*
 - sibilant + nasal:
 - *smṛ* “remember” → *sa-*
 - stop + semivowel:
 - *kruś* “shout” → *cu-*

- *tras* “be afraid” → *ta-*

Roots beginning with a vowel follow the same rules, although some *sandhi* changes occur: in the weak form of the stem, the vowel of the reduplicated syllable will combine with the vowel of the root, and in the strong form, if the root takes *guṇāḥ* or *vṛddhiḥ*, the glide *y* or *v* will be inserted between the reduplicated syllable and the root.

§21.2. Endings

The endings of the perfect are different from those of the present system. In the tables below, they have been presented with the augment *i*, which very often appears between a stem ending in a consonant, and an ending beginning with a consonant.

In the following, the *parasmaipadām* endings are given with Pāṇini’s diacritic letters (*anubandhaḥ*):

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	णल्	अतुः	उः
मध्यमपुरुषः	थल्	अथुः	अ
उत्तमपुरुषः	णल्	व	म

The *ātmanēpadām* endings are generally the same as the primary secondary endings that are used, for example, in the present tense:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	ए	आते	इरे
मध्यमपुरुषः	से	आथे	ध्वे
उत्तमपुरुषः	ए	वहे	महे

Note, however, the distinct endings ए in the third person singular (in contrast to ते) and ईरे in the third person plural.

The augment इद् very commonly occurs between the perfect stem and endings that begin with a consonant. The presence or absence of इद् depends very much on the root in question, but the endings can be put into three groups:

always with iT	$rē$	3pl. $\dot{a}tmanē$.
	va	1du. $\dot{p}arasmai$.
ma		1pl. $\dot{p}arasmai$.
$sē$		2sg. $\dot{a}tmanē$.
mostly with iT		2pl. $\dot{a}tmanē$.
$dhvē$		
$vahē$		1du. $\dot{a}tmanē$.
$mahē$		1pl. $\dot{a}tmanē$.
less often with iT	tha	2sg. $\dot{p}arasmai$.

Note that the augment is generally optional before the second person singular $\dot{p}arasmaipadām$ ending tha , hence उक्थ or उक्थिथ.

The verb $\sqrt{\text{क्}}$ *never* takes the augment iT in the perfect, except before the third person plural $\dot{a}tmanēpadām$ ending $rē$ (which is, for all intents and purposes, $irē$).

Roots ending in a vowel like $\sqrt{\text{दा}}$ “give” or $\sqrt{\text{धा}}$ “place” take a **special ending** in the first person and third person singular $\dot{p}arasmaipadam$. In those cases the vowel of the root combines with the ending to produce *au* (see the paradigms below).

§21.3. Vowel gradation

In the perfect, as in all of the other ‘athematic’ verb conjugations, there is a pattern of accent mobility between the stem and the endings, which accompanies a pattern of vowel

gradation. According to this pattern, the stem exhibits a *full grade* of the root syllable when it is accented, and a *zero grade* of the root syllable when it is unaccented. Hence the perfect distinguishes between a **strong** and **weak** form of the stem.

As usual, the *singular endings of the parasmaipadām* are unaccented and therefore accompany the **strong** form of the stem, whereas the stem is **weak** before all of the other endings (the dual and plural of the *parasmaipadām* and all of the *ātmanēpadām* endings).

§21.4. The weak stem

The **weak** form of the root is simply the zero grade, which involves all of the transformations associated with the diacritic marker *K* (which is implicit in all of the endings of the perfect other than the singular *parasmaipadām*). The most important such transformation is *samprasāraṇam*: for many verbs that contain a semivowel followed by the vowel *a*, the *a* is lost and the semivowel becomes a vowel. In many of those cases, internal *sandhi* will unite the reduplicating syllable and the root syllable, since *both* are formed with *samprasāraṇam*:

Root	Meaning	Weak stem
√ग्रह्	“grasp”	ज-गृह्-
√वच्	“say”	ऊच्-
√स्वप्	“sleep”	सु-षुप्-
√यज्	“sacrifice”	ईज्-
√व्यध्	“pierce”	वि-विध्-

For roots ending in vowels, whether the final vowel of the weak stem becomes a semivowel before endings beginning with a vowel (*yaN*) or whether it is substituted with a combination of a short vowel plus a semivowel (*iyaN̄/uvvaN̄*) depends on the number of consonants

that precede it. If the final vowel is preceded by one consonant, it is regularly converted into a semivowel; if it is preceded by more than one, it is replaced with *iyaṅ* or *uvaṅ*:

Root	Meaning	3pl. <i>parasmai</i> .
√नी	“lead”	नि-न्-उः
√क्री	“buy”	चि-क्रिय-उः
√श्रु	“hear”	शु-श्रुव-उः

In the case of the verb √भू, however, the augment वृक् is always inserted between the root and endings beginning with a vowel:

Root	Meaning	3pl. <i>parasmai</i> .
√भू	“lead”	ब-भू-व-उः

One important class of verbal roots does not employ reduplication in the weak form of the stem, but instead uses a **collapsed** stem. These are roots that (1) contain the vowel *a* followed by a single consonant, and (2) form their reduplicating syllable with the *exact same consonant* that is used in the root, i.e., they do not begin with a conjunct consonant, a velar, or an aspirate. Such roots form the weak stem by replacing the medial vowel *a* with *ē*, as follows:

Root	Meaning	Weak stem
√सद्	“sit”	सेद्-
√पच्	“cook”	पेच्-
√मन्	“think”	मेन्-
√तन्	“stretch”	तेन्-

An even smaller class of verbs with a medial *a* (i.e., the vowel *a* followed by one and only one consonant) forms the weak stem of the perfect with reduplication, but accompanied by the deletion of the vowel of the root syllable. These roots are as follows *Aṣṭādhyāyī* 6.4.98:

Root	Meaning	Weak stem
√गम्	“go”	ज-ग्म्-
√हन्	“strike”	ज-घ्न-
√जन्	“be born”	ज-ञ्-
√खन्	“dig”	च-ख्-
√घस्	“eat”	ज-क्ष-

Note that √हन् substitutes its original velar, *gh*, for *h* in the perfect forms.

Finally, roots that end in the vowel *ā* form the strong stem with *ā* (which takes special endings in the first and third person *parasmaipadam*) and their weak stem with *i* before consonants and zero before vowels:

Root	Meaning	Weak stem
√दा	“give”	द-द्-, द-दि-

§21.5. The strong stem

For verbs of a certain phonological shape, the **strong** form of the stem itself takes different forms depending on which of the endings follows. The vowel gradation of the strong stem is:

ending	vowel grade
<i>NaL</i> (1sg. <i>parasmai.</i>)	optionally <i>guṇāḥ</i> or <i>Ṇ-ṽṛddhiḥ</i>
<i>thaL</i> (2sg. <i>parasmai.</i>)	<i>guṇāḥ</i>
<i>NaL</i> (3sg. <i>parasmai.</i>)	<i>Ṇ-ṽṛddhiḥ</i>

“*Ṇ-ṽṛddhiḥ*” means that the root will take either *guṇāḥ* or *ṽṛddhiḥ* depending on its phonological shape. Roots endings in a *vowel*, or which have the vowel *a* followed by one and only one consonant, take *ṽṛddhiḥ* in these forms; all other roots take *guṇāḥ*.

A root like √भिद् “split” will never take *ṽṛddhiḥ* before endings marked with *Ṇ*, because it has neither a final vowel nor a medial *a*. Hence its paradigm will be as follows:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	बिभेद	बिभिदतुः	बिभिदुः
मध्यमपुरुषः	बिभेदिथ	बिभिदतुः	बिभिद
उत्तमपुरुषः	बिभेद	बिभिदिव	बिभिदिम

For a verb like √नी, however, *ṽṛddhiḥ* is *required* in the third person singular, and *guṇāḥ* is *required* in the second person singular. In the first person singular, either *guṇāḥ* or *ṽṛddhiḥ* may be used. Hence:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	निनाय	निन्यतुः	निन्युः
मध्यमपुरुषः	निनेथ, निनयिथ	निन्यथुः	निन्य
उत्तमपुरुषः	निनाय, निनय	निन्यिव	निन्यिम

NOTE: The reason for the difference in vowel gradation in the strong form of the stem has to do with *Brugmann's Law*. The Proto-Indo-European vowel **o* generally became *a* in Sanskrit. However, when it occurred in an *open* syllable—that is, when it was not followed by a consonant in the same syllable—it developed into the long vowel *ā*. The full grade of the perfect stem was formed with an accented **ó* in Proto-Indo-European. Most often, Indo-European roots end in a single consonant. Hence this **ó* stood in an *open* syllable before endings beginning with a vowel. The endings reconstructed for the perfect in Proto-Indo-European are **e* in the third person singular, **ih₂e* in the second person singular, and **h₂e* in the first person singular. Hence Brugmann's Law generally converted a medial **ó* into *a* in the first and second person singular, and *ā* in the third person singular. Possibly the option for *guṇāḥ* or *N-vṛddhiḥ* in the first person singular arose from the fact that the laryngeal consonant with which the first person singular ending began, **h₂*, was already unstable at the time that Brugmann's Law operated. Below are the reconstructions for the perfect of √शृ “hear”, with a dash marking the boundary between the stem and the ending, and a dot marking the boundary between syllables:

Form	Proto-Indo-European	Sanskrit
3sg. <i>parasmai</i> .	<i>*ke.kl̥ó.w-e</i>	शुश्राव
2sg. <i>parasmai</i> .	<i>*ke.kl̥ó.w-t.h₂e</i>	शुश्रोथ
1sg. <i>parasmai</i> .	<i>*ke-kl̥ó.w.-h₂e</i>	शुश्रव

§21.6. Paradigms

The verb √भू “become” is peculiar first of all because it reduplicates with *ba-*, rather than the expected *bu-*, and second because it does not undergo any kind of vowel gradation in the perfect, and third because a glide (वृक्) always appears between the root and endings beginning with a vowel.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	बभूव	बभूवतुः	बभूवुः
मध्यमपुरुषः	बभूविथ	बभूवथुः	बभूव
उत्तमपुरुषः	बभूव	बभूविव	बभूविम

The verb √मन् “think” is conjugated in the *ātmanēpadām*, and it forms its weak stem through a “collapse” of the reduplicating syllable and the root.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	मेने	मेनाते	मेनिरे
मध्यमपुरुषः	मेनिषे	मेनाथे	मेनिध्वे
उत्तमपुरुषः	मेने	मेनिवहे	मेनिमहे

The verb √दा “give” exhibits the special ending of the first and third person singular *paras-maipadam* for verbs ending in a long *ā*:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	ददौ	ददतुः	ददुः
मध्यमपुरुषः	ददाथ, ददिथ	ददाथुः	दद
उत्तमपुरुषः	ददौ	ददिव	ददिम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	ददे	ददाते	ददिरे
मध्यमपुरुषः	ददिषे	ददाथे	ददिध्वे
उत्तमपुरुषः	ददे	ददिवहे	ददिमहे

§22. The aorist systems

The aorist refers to a set of verbal formations that constitute a system in alternation with the present and perfect system. Originally, the aorist system was associated with *perfective aspect*, that is, to speak of actions as complete in themselves, and usually thus as punctual (e.g., ‘he dropped the glass’ vs. ‘he kept dropping the glass’). The significance of aspect, however, has largely disappeared from the Sanskrit verbal system, and aorist forms are used as the ‘default’ past tense (*Aṣṭādhyāyī* 3.2.110). They contrast with the imperfect, which is used for actions which have taken place within the lifetime of the speaker but not generally in the timeframe of discourse (e.g., ‘Obama was elected in 2008’), and with the perfect, which is generally reserved for the remote past (e.g., ‘Harṣa defeated Śaśānka’). The association of aorist forms with perfective aspect, however, lives on in the common use of augmentless aorist forms to express prohibitions (‘don’t do that’ = मा तत् कार्षीः; see the injunctive below).

The aorist system, like the present system, comprises a number of different stem formations. But whereas each verbal root is generally associated with one and only one present stem, a given verbal root may be associated with several different aorist stems. Moreover the *phonological shape* of a root is of greater importance in determining the stems that it can form in the aorist system than in the present system. The major modes of aorist stem formation are:

- the *sigmatic* aorists:
 - the simple sigmatic aorist or *s-aorist* (सिच);
 - the *iṣ-aorist*;
 - the *siṣ-aorist*;
 - the *sa-aorist* (क्स);
- the *root* aorist;

- the *thematic* aorist (अङ्);
- the *reduplicated* aorist (चङ्); and
- the *passive* aorist (चिण्).

Some of these formations are reserved for specific syntactic functions. Thus, just as the suffix यक् forms an impersonal or passive present stem, so too the suffix चिण् forms an impersonal or passive aorist. Similarly, just as the suffix णिच् forms a causative root that can be conjugated in the present system, so too the suffix चङ् forms a causative aorist. Whether a particular root takes a particular aorist formation, however, is otherwise largely determined by its phonological shape.

Pāṇini groups all of the aorist forms together firstly under the abstract tense-aspect-mood marker लुङ् (*Aṣṭādhyāyī* 3.2.110), which is always replaced with the suffix चि (*Aṣṭādhyāyī* 3.1.43). This general suffix of the aorist is then substituted as needed to form the aorist stems discussed below. The *default* form is the *s*-aorist (*Aṣṭādhyāyī* 3.1.44).

The *endings* of the aorist are the secondary endings of both the *parasmaipadām* and *ātmanēpadām*. The only major point to note in connection with the aorist endings is the third person plural. The *thematic* aorist conjugations (those formed with क्स and अङ्) take *-an* in the *parasmaipadām* and *-anta* in the *ātmanēpadām*. (The root aorist of √च, which is athematic, also takes the ending *-an*.) The *athematic* aorist conjugations, however, take the ending *-uḥ* in the *parasmaipadām* and *-ata* in the *ātmanēpadām*.

The aorist, as an indicative past tense, always features the past tense augment अट् (= अ-). The augment is added before the root, but after all of the verbal prefixes. In case the root begins with a vowel, the augmented form of the root is represented by *vṛddhiḥ* of that vowel.

§22.1. The sigmatic aorists

The most common forms of the aorist feature the aorist marker *s*, which appears between the root and the endings. There are, however, a number of different ways to form this aorist—which is called the *sigmatic* or *sibilant* aorist because of this marker—depending partly on the phonological shape of the verbal root:

- the *s*-aorist,
- the *iṣ*-aorist,
- the *siṣ*-aorist, and
- the *sa*-aorist.

The *s*-aorist is the default aorist formation, and is formed by the addition of the suffix *s* (Pāṇini's सिच्) directly to the verbal root. The default pattern of vowel gradation for this form is lengthened grade (*vṛddhiḥ*) in the *parasmaipadām* and zero grade in the *ātmanēpadām*. However, verbal roots that end in the vowels *i*, *ī*, *u* and *ū* take full grade (*gunāḥ*) in the *ātmanēpadām*. Verbs that end in a long *ā* turn this into *i* or *ī* in the *ātmanēpadām* (in the *parasmaipadām* such verbs usually form another aorist).

The *endings* of the *s*-aorist are the regular secondary endings for athematic verbs, including *-uḥ* in the third person plural *parasmaipadām* and *-ata* in the third person plural *ātmanēpadām*. However, because these endings are added directly onto a stem characterized by *s*, a number of *sandhi* changes, and pseudo-*sandhi* changes, occur:

- between the verbal root and endings that consist of a single phoneme (i.e., *-s* of the 2sg. *parasmai.* and *-t* of the 3sg. *parasmai.*) an augment *-ī-* is inserted, so that the endings of the 2sg. and 3sg. *parasmai.* are effectively *-iḥ* and *-īt* respectively;
- before the ending *-dhvam* of the 2pl. *ātmanē.*, the aorist marker *s* is lost, and in case the *s* would have been retroflexed, the ending becomes *-dhvam*;

- before endings that begin with *t* or *th* stop, the aorist marker *-s-* is lost in two circumstances:
 - if the sound preceding *s* is a *consonant*; and
 - if the sound preceding *s* is a *short vowel* (as in the *ātmanēpadam* of certain vowel-final roots).

NOTE: Regarding the insertion of the augment *ī*: this is a relatively new feature of the *s*-aorist, which begins to appear in the *Atharvaveda* and, with some regularity, in the *Brāhmaṇa* texts. The older form of the *s*-aorist was simply (e.g.) अनैः, अजैः, अक्ताः, अपाक्, etc. The augment *ī* was introduced from the *īṣ*-aorist (see below).

Regarding the loss of *s/ṣ* before *-dhvam*, this is a normal (although rare) *sandhi* phenomenon, according to which the *s/ṣ* is voiced due to regressive assimilation of voicing. The voiced dental sibilant (call it *z* if you like) disappears without any visible effect, but the voiced retroflex sibilant (call it *ʒ*) almost always produces retroflexion in the following dental stop, and hence the outcome *-dhvam*.

Regarding the loss of *s* after the *r* of a verbal root, this is likely not a *sandhi* phenomenon at all, but the appearance of root aorist forms in the paradigm of the *s*-aorist.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अपाक्षीत्	अपाक्ताम्	अपाक्षुः
मध्यमपुरुषः	अपाक्षीः	अपाक्तम्	अपाक्त
उत्तमपुरुषः	अपाक्षम्	अपाक्ष्व	अपाक्ष्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अपक्त	अपक्षाताम्	अपक्षत
मध्यमपुरुषः	अपक्थाः	अपक्षाथाम्	अपग्ध्वम्
उत्तमपुरुषः	अपक्षि	अपक्ष्वहि	अपक्ष्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अनैषीत्	अनैष्टाम्	अनैषुः
मध्यमपुरुषः	अनैषीः	अनैष्टम्	अनैष्ट
उत्तमपुरुषः	अनैषम्	अनैष्व	अनैष्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अनेष्ट	अनेषाताम्	अनेषत
मध्यमपुरुषः	अनेष्टाः	अनेषाथाम्	अनेद्भम्
उत्तमपुरुषः	अनेषि	अनेष्वहि	अनेष्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	व्यजेष्ट	व्यजेषाताम्	व्यजेषत
मध्यमपुरुषः	व्यजेष्टाः	व्यजेषाथाम्	व्यजेद्भम्
उत्तमपुरुषः	व्यजेषि	व्यजेष्वहि	व्यजेष्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	आदित	आदिषाताम्	आदिषत
मध्यमपुरुषः	आदिथाः	आदिषाथाम्	आदिद्भम्
उत्तमपुरुषः	आदिषि	आदिष्वहि	आदिष्महि

The *iṣ*-aorist is, in origin, just the form that the *s*-aorist took when the verbal root takes the augment *iṭ* (i.e., if it is a *sēṭ* root). It uses the same endings as the *s*-aorist, but the vowel gradation is different: the augment *i* generally causes the root to enter the full grade, or *gunāḥ*, although roots ending in a vowel (and some roots with a penultimate *a*) take *vṛddhiḥ* in the *parasmaipadām*, just as in the *s*-aorist.

Note that the second and third person singular of the *parasmaipadām* are not **-iṣīḥ* and **-iṣīt*, but *-iḥ* and *-īt* (as noted above, these forms actually originated in the *iṣ*-aorist, and secondarily spread to the *s*-aorist).

NOTE: The roots that took this augment, as explained above, historically ended in a laryngeal consonant, which became *i* in interconsonantal position.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अबोधीत्	अबोधिष्टाम्	अबोधिषुः
मध्यमपुरुषः	अबोधीः	अबोधिष्टम्	अबोधिष्ट
उत्तमपुरुषः	अबोधिषम्	अबोधिष्व	अबोधिष्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अबोधिष्ट	अबोधिषाताम्	अबोधिषत
मध्यमपुरुषः	अबोधिष्टाः	अबोधिषाथाम्	अबोधिष्टम्
उत्तमपुरुषः	अबोधिषि	अबोधिष्वहि	अबोधिष्महि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अपावीत्	अपाविष्टाम्	अपाविषुः
मध्यमपुरुषः	अपावीः	अपाविष्टम्	अपाविष्ट
उत्तमपुरुषः	अपाविषम्	अपाविष्व	अपाविष्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अपविष्ट	अपविषाताम्	अपविषत
मध्यमपुरुषः	अपविष्टाः	अपविषाथाम्	अपविष्टम्
उत्तमपुरुषः	अपविषि	अपविष्वहि	अपविष्म

In a few verbs ($\sqrt{\text{रम्}}$ ‘besport,’ $\sqrt{\text{यम्}}$ ‘control,’ $\sqrt{\text{नम्}}$ ‘bow,’ and those ending in $-\bar{a}$), the augment $-s-$ (*sak*) is added between the root and the augment $-i-$. This form is therefore often called the “*siṣ*-aorist.” The root stays in its full grade form (*guṇāḥ*), and only the *parasmaipadām* is used. In the *ātmanēpadām* of these verbs, the *s*-aorist is used instead.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अयासीत्	अयासिष्टाम्	अपविषत
मध्यमपुरुषः	अयासीः	अयासिष्टम्	अयासिष्ट
उत्तमपुरुषः	अयासिषम्	अयासिष्व	अपाविष्म

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अनंसीत्	अनंसिष्टाम्	अनंसिषत
मध्यमपुरुषः	अनंसीः	अनंसिष्टम्	अनंसिष्ट
उत्तमपुरुषः	अनंसिषम्	अनंसिष्व	अनंसिष्म

§22.2. The *sa*-aorist (क्स)

Another aorist paradigm, using the suffix $-sa$, is used for the following types of verbs (*Aṣṭādhyāyī* 3.1.45):

- those ending in \acute{s} , $\acute{ṣ}$, s or h ;
- those that have a medial i , \bar{i} , u , \bar{u} , r , or \bar{r} ;
- those that do not take the augment iT .

Hence roots that take this form include $\sqrt{\text{दिश}}$ “point out,” $\sqrt{\text{विश}}$ “enter,” $\sqrt{\text{लिह}}$ “lick,” $\sqrt{\text{बुह}}$ “milk,” and so on. (Not $\sqrt{\text{दृश}}$ “see,” which takes the *s*-aorist instead.)

In these forms, the root always stands in the zero grade. The endings *-an* and *-anta* of the third person plural are used instead of the endings *-ubh* and *-ata*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अदिक्षत्	अदिक्षताम्	अदिक्षन्
मध्यमपुरुषः	अदिक्षः	अदिक्षतम्	अदिक्षत
उत्तमपुरुषः	अदिक्षम्	अदिक्षाव	अदिक्षाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अदिक्षत	अदिक्षाताम्	अदिक्षन्त
मध्यमपुरुषः	अदिक्षथाः	अदिक्षथम्	अदिक्षध्वम्
उत्तमपुरुषः	अदिक्षि	अदिक्षावहि	अदिक्षामहि

Four verbs that end in *h* ($\sqrt{\text{दुह}}$ “milk,” $\sqrt{\text{दिह}}$ “smear,” $\sqrt{\text{लिह}}$ “lick,” and $\sqrt{\text{गुह}}$ “hide”) optionally take the regular *s*-aorist endings before *ātmanēpadām* endings that begin with a dental (that is to say, the **entire** suffix of the *sa*-aorist is optionally deleted in such environments, see *Aṣṭādhyāyī* 7.3.73):

- $\sqrt{\text{दुह}}$ 3rd person singular *ātmanēpadām*: अधुक्षत् or अदुग्ध
- $\sqrt{\text{दुह}}$ 2nd person singular *ātmanēpadām*: अधुक्षथाः or अदुग्धाः
- $\sqrt{\text{दुह}}$ 2nd person plural *ātmanēpadām*: अधुक्षध्वम् or अदुग्ध्वम्

§22.3. The root aorist

The *root aorist* refers to an aorist form in which the endings are added directly to the verbal root. In Classical Sanskrit, this form is only available for a small class of verbs — five that end in *-ā* ($\sqrt{\text{दा}}$, $\sqrt{\text{धा}}$, $\sqrt{\text{स्था}}$, $\sqrt{\text{पा}}$, and $\sqrt{\text{गा}}$, the last of which is a substitution of $\sqrt{\text{गम्}}$

“go” in certain contexts), and $\sqrt{\text{भू}}$ — and only in the *parasmaipadām* (*Aṣṭādhyāyī* 2.4.77). (These same roots use the *s*-aorist in the *ātmanēpadām*.) But in the Vedas forms from other roots, and *ātmanēpadām* forms, are attested.

The third-person plural ending in *-uḥ* for roots endings in *-ā*, before which this vowel is lost; for $\sqrt{\text{भू}}$, the ending is *-an*, before which *bbū* becomes *bhuw-*.

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अदात्	अदाताम्	अदुः
मध्यमपुरुषः	अदाः	अदातम्	अदात
उत्तमपुरुषः	अदाम्	अदाव	अदाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अभुत्	अभूताम्	अभुवन्
मध्यमपुरुषः	अभूः	अभूतम्	अभूत
उत्तमपुरुषः	अभूवम्	अभूव	अभूम

§22.4. The thematic aorist (अङ्)

The thematic aorist is formed by a suffix *-a-* (Pāṇini’s अण) added to root in the zero grade. The root $\sqrt{\text{दृश्}}$, and roots ending in the vowel *-ṛ*, take *guṇāḥ* instead (*Aṣṭādhyāyī* 7.4.14). It has both *parasmaipadām* and *ātmanēpadām* forms, but not all roots can take both. Following Pāṇini we can think of three classes of roots that take this form:

- those that take the *a*-aorist in both the *parasmaipadām* and *ātmanēpadām*, like $\sqrt{\text{सृ}}$ “go,” $\sqrt{\text{शास्}}$ “order,” and $\sqrt{\text{ऋ}}$ “go”;
- those that take it in the *parasmaipadām* and only **optionally** in the *ātmanēpadām*, like $\sqrt{\text{लिप्}}$ “smear,” $\sqrt{\text{सिच}}$ “sprinkle,” and $\sqrt{\text{ह्वे}}$ “call”;

- those that take it in the *parasmaipadām* and **not** in the *ātmanēpadām*, like √पुष् “nourish,” √शुष् “dry out,” and √द्युत् “shine.”

The thematic aorist is very similar to the imperfect of thematic verbs, especially those in class 6, which also appear in the zero grade. One difference, however, is that the imperfect uses the present stem, which in some cases is formed by nasal infixation, whereas the aorist stem never has a nasal infix. Contrast:

- √सिच् “sprinkle” → *á-siñc-a-t* “he sprinkled” (imperfect)
- √सिच् “sprinkle” → *á-sic-a-t* “he sprinkled” (aorist)

There are two verbs that form their thematic aorist stems by reduplication: √वच् “speak” and √पत् “fly.” In both cases the root syllable appears in the zero grade:

- √वच् + अण् → *á-va-vc-a-* → *ávōca-*
- √पत् + अण् → *á-pa-pt-a-* → *ápapta-*

A few other verbs have idiosyncratic *a*-aorist formations:

- √अस् “throw” + अण् → *ástba-*
- √शास् “teach” + अण् → *ásiṣa-*
- √नश् “perish” + अण् → *ánēśa-*

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अविदत्	अविदताम्	अविदन्
मध्यमपुरुषः	अविदः	अविदतम्	अविदत
उत्तमपुरुषः	अविदम्	अविदाव	अविदाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अविदत्	अविदेताम्	अविदन्त
मध्यमपुरुषः	अविदथाः	अविदेथाम्	अविदध्वम्
उत्तमपुरुषः	अविदे	अविदावहि	अविदामहि

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	असरत्	असरताम्	असरन्
मध्यमपुरुषः	असरः	असरतम्	असरत
उत्तमपुरुषः	असरम्	असराव	असराम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	असरत	असरेताम्	असरन्त
मध्यमपुरुषः	असरथाः	असरेथाम्	असरध्वम्
उत्तमपुरुषः	असरे	असरावहि	असरामहि

§22.5. The reduplicated aorist (चङ्)

The reduplicated aorist, formed with the suffix चङ्, forms verbs with a *causative* meaning as well as verbs that are conjugated in the tenth class in the present system. The stem-forming suffix चङ् thus corresponds, in the aorist system, to the stem-forming suffix णिच् (technically णिच् + षप्) in the present system. The roots √श्चि “resort to,” √द् “melt,” and √स्रु “run” (as liquid) have a non-causative meaning in this tense. Generally the root takes the zero grade, but roots that end in *r̥* take *gunāḥ*, and roots that have a medial *r̥* have the option of taking zero grade or *gunāḥ* (see below).

The reduplicated syllable (अभ्यासः) is formed similarly to third-class presents, with two exceptions: an *a* and *ā* in the root syllable become *i* in the reduplicated syllable, and

the *length* of the vowel in the reduplicated syllable is adjusted to conform to a prosodic template. The reduplicated syllable and root syllable should either fit the template $\sim\sim$ (heavy-light), or failing that, $\sim\bar{\sim}$ (light-heavy). Verbs with a medial r can take both forms, depending on whether they take *gunāḥ*. Here are some examples:

- $\sim\sim$ (heavy-light)
 - $\sqrt{\text{द्रु}} + \text{चङ्}$ “melt” → अदुद्रुव-
 - $\sqrt{\text{क्षिप्}} + \text{चङ्}$ “throw” → अचिक्षिप-
 - $\sqrt{\text{जन्}} + \text{चङ्}$ “be born” → अजीजन-
 - $\sqrt{\text{भिद्}} + \text{चङ्}$ “break” → अवीभिद-
 - $\sqrt{\text{कृ}} + \text{चङ्}$ “do” → अचीकर-
 - $\sqrt{\text{वृध्}} + \text{चङ्}$ “grow” → अवीवृध- (but see below)
 - $\sqrt{\text{वृत्}} + \text{चङ्}$ “turn” → अवीवृत्- (but see below)
- $\sim\bar{\sim}$ (light-heavy)
 - $\sqrt{\text{रक्ष्}} + \text{चङ्}$ “guard” → अररक्ष-
 - $\sqrt{\text{वृध्}} + \text{चङ्}$ “grow” → अववर्ध- (but see above)
 - $\sqrt{\text{वृत्}} + \text{चङ्}$ “turn” → अववर्त्- (but see above)

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अशिश्रियत्	अशिश्रियताम्	अशिश्रियन्
मध्यमपुरुषः	अशिश्रियः	अशिश्रियतम्	अशिश्रियत
उत्तमपुरुषः	अशिश्रियम्	अशिश्रियाव	अशिश्रियाम

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	अशिप्रियत	अशिप्रियेताम्	अशिप्रियन्त
मध्यमपुरुषः	अशिप्रियथाः	अशिप्रियेथाम्	अशिप्रियध्वम्
उत्तमपुरुषः	अशिप्रिये	अशिप्रियावहि	अशिप्रियामहि

§22.6. The passive aorist (चिण्)

The passive aorist is formed with चिण्, i.e., the suffix *-i* added onto a root that takes N-*vṛddhi*. This form is called the “passive aorist” because it is taught in an impersonal and passive sense (*Aṣṭādhyāyī* 3.1.66), although there are a number of cases when it is used actively.

- *ākāri* (√कृ) “it was done”
- *ājani* (√जन) “it was produced”
- *āvadhi* (√वध) “it was killed”
- *ādarsī* (√दृश) “it was seen”
- *abhyādhāyi* (√धा) “it was expressed”
- *ābōdhi* (√बुध) “it was realized”
- *āvāci* (√वच्) “it was said”
- *anvābhāvi* (अनु-√भू) “it was experienced”

§22.7. The injunctive

The injunctive is just an aorist form with an augment. It is primarily used with the prohibitive particle *mā* to express a prohibition.

§23. The futures

The future is a verbal form that refers to the future (“what will happen,” भविष्यत्). Sanskrit has two such forms: one, called लृट् by Pāṇini, is like the other *lakāras* in that it involves the addition of a stem-forming suffix (विकरणः) to a verbal root (धातुः) followed by the personal endings; the other, called लृट्, can be thought of as a verbal use of an agent noun. The former, which I will “the simple future” or just “the future,” is used much more often than the latter.

§23.1. The future (लृट्)

The simple future is formed by adding the stem-forming suffix *syá* to the root (*Aṣṭādhyāyī* 3.1.33), which is generally in the *full grade* (*guṇāḥ*). Many verbs take the augment *i* (इट्) between the root and the suffix *syá*, and hence the future suffix in these verbs can be thought of as *i:syá*.

NOTE: Of roots ending in vowels, none of those ending in *ā*, *i*, and *ī*, and all of those ending in *r̥* and *r̄* take the augment; those ending in *u* or *ū* must be learned on a case-by-case basis. Those ending in consonants must be learned on a case-by-case basis as well.

For verbs that do not take the augment *i*, a number of *sandhi* changes might occur between the root and the suffix:

- Voicing assimilation:
 - $\sqrt{labh} + sya [+ ti] \rightarrow lapsyáti$ “will receive”
 - $\sqrt{pad} + sya [+ ti] \rightarrow patsyáti$ “will occur”
 - $\sqrt{budh} + sya [+ ti] \rightarrow bhōtsyáti$ “will become aware”
- RUKI:
 - $\sqrt{bhaj} + sya [+ tē] \rightarrow bhaksyátē$ “will partake”

- $\sqrt{spr\ddot{s}}$ + *sya* [+ *ti*] → *sprakṣyāti* “will touch”

The *padām* (*parasmaipadām* or *ātmanēpadām*) is the same as that of the present tense for any given verb.

The *endings* are the same as those of the present tense as well.

Here are a number of examples of the third-person singular of the future from verbal roots of various shapes. The full paradigm can be formed on the analogy of the present.

- Vowel-final roots (no *i*)
 - $\sqrt{dā}$ + *sya* [+ *ti*] → *dāsyāti* “will give”
 - $\sqrt{sthā}$ + *sya* [+ *ti*] → *sthāsyāti* “will stand”
 - \sqrt{gai} + *sya* [+ *ti*] → *gāsyāti* “will sing”
 - \sqrt{i} + *sya* [+ *ti*] → *ēsyāti* “will go”
 - \sqrt{ji} + *sya* [+ *ti*] → *jēsyāti* “will prevail”
 - $\sqrt{nī}$ + *sya* [+ *ti*] → *nēsyāti* “will lead”
 - $\sqrt{śru}$ + *sya* [+ *ti*] → *śrōsyāti* “will hear”
- Vowel-final roots (with *i*)
 - $\sqrt{bhū}$ + *sya* [+ *ti*] → *bhaviṣyāti* “will become”
 - $\sqrt{kṛ}$ + *sya* [+ *ti*] → *kariṣyāti* “will do”
 - \sqrt{hr} + *sya* [+ *ti*] → *hariṣyāti* “will take”
- Consonant-final roots (no *i*)
 - \sqrt{prach} + *sya* [+ *ti*] → *prakṣyāti* “will ask”
 - \sqrt{vac} + *sya* [+ *ti*] → *vakṣyāti* “will say”
 - \sqrt{tyaj} + *sya* [+ *ti*] → *tyakṣyāti* “will take”

- $\sqrt{srj} + sya [+ ti] \rightarrow srakṣyāti$ “will create”
 - $\sqrt{sprś} + sya [+ ti] \rightarrow sprakṣyāti$ “will touch”
 - $\sqrt{dṛś} + sya [+ ti] \rightarrow drakṣyāti$ “will see”
 - $\sqrt{pad} + sya [+ ti] \rightarrow patsyāti$ “will occur”
 - $\sqrt{ad} + sya [+ ti] \rightarrow atsyāti$ “will each”
 - $\sqrt{bhid} + sya [+ ti] \rightarrow bhitsyāti$ “will break”
 - $\sqrt{dah} + sya [+ ti] \rightarrow dbakṣyāti$ “will burn”
 - $\sqrt{dub} + sya [+ ti] \rightarrow dbōkṣyāti$ “will milk”
 - $\sqrt{krudh} + sya [+ ti] \rightarrow krōtsyāti$ “will get angry”
 - $\sqrt{yudh} + sya [+ ti] \rightarrow yōtsyāti$ “will fight”
 - $\sqrt{budh} + sya [+ ti] \rightarrow bhōtsyāti$ “will become aware”
 - $\sqrt{vṛt} + sya [+ ti] \rightarrow vartsyāti$ “will turn”
 - $\sqrt{labh} + sya [+ tē] \rightarrow lapsyātē$ “will receive”
 - $\sqrt{man} + sya [+ tē] \rightarrow maṁsyātē$ “will think”
 - $\sqrt{kram} + sya [+ tē] \rightarrow kramṣyāti$ “will step”
 - $\sqrt{dviṣ} + sya [+ ti] \rightarrow dvēkṣyāti$ “will hate”
 - $\sqrt{viṣ} + sya [+ ti] \rightarrow vēkṣyāti$ “will enter”
- Consonant-final roots (with *i*)
 - $\sqrt{pat} + sya [+ ti] \rightarrow patiṣyāti$ “will fly”
 - $\sqrt{granth} + sya [+ ti] \rightarrow granthiṣyāti$ “will knot”
 - $\sqrt{gam} + sya [+ ti] \rightarrow gamiṣyāti$ “will go”
 - $\sqrt{śubh} + sya [+ ti] \rightarrow śōbhiṣyāti$ “will shine”
 - $\sqrt{has} + sya [+ ti] \rightarrow hasiṣyāti$ “will laugh”

- $\sqrt{sams} + sya [+ ti] \rightarrow samsisyāti$ “will praise”

§23.2. The periphrastic future (लुट्)

The “periphrastic future” लुट् is so called because it is composed of an agent noun in *-tr* (see below) and the inflected forms of the copula $\sqrt{अस्}$. (There are only *parasmaipadām* forms.) However, the copula is only used in the first and second person, and the agent noun is only inflected for number in the third person. The agent noun generally takes *i* in those cases where the simple future also takes *i*, with one important exception: roots ending in *-r*, which necessarily take the augment in the simple future, do not take it in the periphrastic future. The accent is on the final syllable of the agent noun.

It is more rare than the simple future, and it is said to be used “not with reference to the present day” (अनद्यन्तने लुट्, *Aṣṭādhyāyī* 3.3.15).

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	कर्ता	कर्तारौ	कर्तारः
मध्यमपुरुषः	कर्तासि	कर्तास्थः	कर्तास्थ
उत्तमपुरुषः	कर्तास्मि	कर्तास्वः	कर्तास्मः

§24. Secondary verbs (सनादिः)

Secondary verbs are those which are derived not from a simple, unanalyzeable verbal root (धातुः), but from a verbal root that has been formed from other elements. Those elements may include other *verbal roots*, *nominal stems*, and *suffixes*. We can in general distinguish secondary verbs into two main classes:

- Deverbal verbs (those formed from other verbs):

– The causative (णिच्)

- The desiderative (सन्)
- The intensive (यङ्)
- Denominative verbs (those formed from nominal stems):
 - Denominative verbs proper (क्यङ्)
 - Verbs formed with denominal prefixes (च्चि)

§24.1. The causative

The causative refers to a verb that is formed from an existing verbal root (here referred to as the “simple verb”) by the addition of a suffix that Pāṇini calls णिच् that expresses the cause (हेतुः) whereby the agent of the simple verb is made to perform the action of that verb.

Sanskrit grammarians refer to the action of having someone else do something as “employing” (प्रयोजनम्). The cause, or as I will refer to it, the **causer**, is therefore the **employing agent** (प्रयोजककर्तृ) of the causative verb, while the agent of the simple verb, the **causee**, is the **employed agent** (प्रयोज्यकर्तृ) of the causative verb.

Causative verbs can therefore be considered **valency-increasing** because they add an argument, namely the causer, to the argument structure of the verb. Thus, with the addition of a causative suffix, intransitive verbs (valency 1) become transitive (valency 2), and transitive verbs (valency 2) become ditransitive (valency 3).

English, and every other language, also has “causative alternations,” or ways in which an expression involving a causer alternates with an expression without a causer. Here are a few examples:

- The tree **falls** (वृक्षः पतति).
He **fells** the tree (वृक्षं पातयति).

[Morphological alternation]

- The cake **bakes** (पुरोडाशस् तपति).
He **bakes** the cake (पुरोडाशं तापयति).

[Unmarked alternation]

- The tree **stands** (वृक्षस् तिष्ठति).
He **stands** the tree **up** (वृक्षं स्थापयति).

[Phrasal alternation]

- He **eats** (भुङ्क्ते).
He **feeds** him (तं भोजयति).

[Lexical alternation]

As the translations above suggest, Sanskrit expresses such alternations **morphologically**, that is, by using a form of the verb that is explicitly marked as causative through the suffix णिच्.

In the suffix णिच्, the marker-letter (अनुबन्धः) *C* means that the accent of the causative base is on the final syllable, and the marker-letter *N* means that the root will undergo a particular kind of vowel gradation, namely *N-v̄ddhiḥ*). This requires the following changes (I leave off the suffix *i* in this presentation but give the root in the form it would take before a vowel) :

- *v̄ddhiḥ* in the case of a final vowel (for exceptions see below);
 - √कृ “do” → कार्
 - √श्रु “hear” → श्राव्
 - √इ “go” → आय्
 - √नी “lead” → नाय्
 - √मृ “die” → मार्

- √हृ “take away” → हार
- *vṛddhiḥ* in the case of a medial vowel *a*;
 - √पत् “fall” → पात्
 - √पद् “occur” → पाद्
 - √पच् “cook” → पाच्
 - √खन् “dig” → खान्
 - √शप् “curse” → शाप्
 - √रम् “play” → राम् (also रम्; see below)
- particular to the causative is the **cancellation** of *vṛddhiḥ* in a list of verbal roots that are taught with the marker *m* in the *dhātupāṭhaḥ*, as well as some others that end in a nasal, all of which are given here for reference (*Aṣṭādhyāyī* 6.4.92):
 - √गम् “go”
 - √श्रम् “become tired”
 - √दम् “(become) tame”
 - √शम् “become quiet”
 - √तम् “gasp”
 - √घट् “fit”
 - √व्यथ् “fear”
 - √प्रथ् “spread”
 - √म्रद् “rub”
 - √ऋप् “pity”
 - √त्वर “hurry”
 - √ज्वर् “burn”

- √नट् “dance”
- √श्रथ् “kill”
- √वन् “act”
- √ज्वल् “shine”
- √स्मृ “remember”
- √दृ “respect”
- √श्रा “boil”
- √ज्ञा “know”
- √चल् “move”
- √मद् “rejoice”
- √ध्वन् “sound”
- √मद् “rejoice”
- √दल् “cut”
- √बल् “cover”
- √स्वल् “skip”
- √त्रप् “be ashamed”
- √क्षै “wane”
- √जन् “be born”
- √जृ “get old”
- √रञ्ज् “dye”
- √ग्ला “fade”
- √स्ना “wash”
- √वन् “cherish”
- √फण् “approach”

- a handful of roots insert a nasal (Pāṇini's *num*) rather than taking *vṛddhiḥ* by *Aṣṭādhyāyī* 7.1.61 and the following rules:
 - √लभ् “obtain” → लम्
 - √रम् “begin” → रम्
 - √रध् “cook” → रन्ध्
 - √जम् “snap” → जम्
- *gunāḥ* of all other roots;
 - √भिद् “split” → भेद्
 - √बुध् “awaken” → बोध्
 - √तृप् “be satisfied” → तर्प्
 - √दृश् “see” → दर्श
 - √तुद् “hit” → तोद्
- except roots that end either in *two consonants* or a long vowel followed by a consonant, which are not subject to vowel gradation in the first place.
 - √चुम्ब् “kiss”
 - √जीव् “live”
 - √क्रीड् “play”

All roots ending in *ā*, as well as a few others, appear in the causative with an **augment** (आगमः) interposed between the final vowel of the root and the causative suffix. The default augment is *p* (*Aṣṭādhyāyī* 7.3.36):

- √स्था “stand” → स्थाप्
- √दा “give” → दाप्

- √धा “place” → धाप्
- √मा “measure” → माप्
- √हा “abandon” → हाप्
- √ही “be ashamed” → हेप्
- √ल्ली “press down” → ल्लेप्
- √ऋ “go” → अर्प्

Three verbs which end in vowels and therefore would take the usual *vṛddhiḥ* strengthening instead replace their *i*-vowel with *ā* and thus take the augment *p* (*Aṣṭādhyāyī* 6.1.48, *Aṣṭādhyāyī* 6.1.57):

- √जि “conquer” → जाप्
- अधि-√इ → अध्याप्
- √क्री “buy” → क्राप्
- √स्मि “smile” → स्माप्

Another common augment is *y* (*Aṣṭādhyāyī* 7.3.37), especially with those roots that are taught as ending in long diphthongs (indeed the *y* can be considered part of the root in these cases rather than an augment):

- √द्वा or √द्वे “call” → द्वाय्
- √सा or √सो “conclude” → साय्
- √पा “drink” → पाय्

The augment *ṣ* is used with the verb √भी “be afraid” in the meaning of “terrify” or “be scary,” forming the causative root √भीष् *Aṣṭādhyāyī* 6.1.56.

Two further special cases deserve notice. The root √रुह् “ascend” can either make its causative form as √रोह् or √रोप् (*Aṣṭādhyāyī* 7.3.43). The root √हन् “strike” makes its causative form as √घात् (*Aṣṭādhyāyī* 7.3.32).

NOTE: The pattern of vowel gradation in the causative is based on two aspects of Proto-Indo-European. First, the forms from which the Sanskrit causative were derived featured the vowel **o* rather than an **e*, and in accordance with Brugmann’s Law, an ablauting (i.e., morphologically alternating) vowel **o* became a long *ā* in Sanskrit if and only if that **o* appeared in an **open** syllables (i.e., if it was followed by one and only one consonant within the word). Hence we have, e.g., पातयति from **potéyeti*, but दर्शयति from **dorkéyeti*. Secondly, many roots ended with a **laryngeal** consonant that was lost in Sanskrit, but which made the root syllable **closed** for the purposes of Brugmann’s Law. That is why we have, e.g., शमयति from **komHéyeti*, दमयति from **domHéyeti*, and so on. A few roots that did not actually end in a laryngeal consonant in Proto-Indo-European, such as √गम् (**gʷom*) were nevertheless remodelled on the analogy of roots like √शम्, √दम्, etc. which did.

Presence or absence of the causative suffix. Once the root has been strengthened as described above, it **never changes** in any causative form. What does change, however, is whether a particular form exhibits the suffix of the causative, namely *-ay-* (the *gunāḥ* form of *i*), or whether the suffix is deleted. Compare, for example, the infinitive कारयितुम् “to cause to do” and the past passive participle कारितः “caused to do.” The causative suffix is deleted in the latter but not the former.

The deletion of the causative suffix is covered by two relatively simple rules, *Aṣṭādhyāyī* 6.4.51 and *Aṣṭādhyāyī* 6.4.52. These rules say that **the causative suffix is deleted before an *ārdhabhātukaḥ* suffix that does not take the augment *i*, as well as before the past passive and past active participle suffix.** Hence:

- the suffix is **retained** throughout the **present system** of verbs, which is formed throughout with *sārvadbhātukaḥ* suffixes;
- it is **retained** in the conjugational future tense and the conditional;

- it is **retained** before most primary suffixes (कृत्) that begin with a consonant, before which the augment *i* appears, hence:
 - तुमुन् (infinitive): कारयितुम्, श्रावयितुम्, दापयितुम्
 - क्त्वा (converb): कारयित्वा, श्रावयित्वा, दापयित्वा
 - लुट् (periphrastic future): कारयिता, श्रावयिता, दापयिता
 - तव्य (future passive participle): कारयितव्यः, श्रावयितव्यः, दापयितव्यः
- it is **deleted** before those primary suffixes that begin with a vowel or the consonant *y*, hence:
 - ल्यप् (converb): संस्कार्य, आदाप्य
 - * **However**, if the converb suffix is preceded by a short vowel and a single consonant, then the causative suffix is retained (*Aṣṭādhyāyī* 6.4.56): प्रणमय्य, अवगमय्य, प्रशामय्य, etc.
 - क्यप् and ण्यत् (future passive participle): कार्यः, श्राव्यः, दाप्यः
- it is **deleted** in the past passive participle and past active participle (निष्ठा), hence:
 - क्त (past passive participle): कारितः, श्रावितः, दापितः
 - क्तवत् (past active participle): कारितवान्, श्रावितवान्, दापितवान्
- it is **deleted** in the passive of the present system, i.e., before the stem-forming suffix यक्, hence:
 - कार्यते, श्राव्यते, दाप्यते

The present system. Causative verbs are used in all of the tenses and moods of the present system, including the present (लट्), imperfect (लङ्), optative (लृट्), and imperative (लोट्). The present stem is formed by adding the suffix *-āya-* (i.e., the causative suffix *i* = *ṆiC*, followed by the present-stem forming suffix *a* = *ŚaP*, which induces *guṇāḥ* of the causative

suffix). The exact same suffix is used in the tenth present class of verbs, which are therefore formally identical to the causative.

The future system. Causative verbs form their future by adding *-iṣya* to the causative stem: कारयिष्यति, श्रावयिष्यति, दापयिष्यति.

The perfect system. Causative verbs use the periphrastic perfect. The form used in the periphrastic perfect is a verbal noun formed by adding *-ām* onto the causative base with *-ay-* (*Aṣṭādhyāyī* 6.4.55), hence कारयां चकार, भावयां चकार, दापयां चकार, etc.

The aorist system. Causative verbs use the reduplicated aorist.

§24.2. The desiderative (सन्)

The “desiderative” refers to the fact that the agent desires to do the action expressed by the verb *Aṣṭādhyāyī* 3.1.7. Sanskrit has a number of closely-related desiderative forms, exemplified here using √जि “conquer”:

- a conjugated verbal form, formed with the suffix *sa* (सन्):
 - जिगीषति “he wants to conquer”
- an action noun, formed with the suffix *sā*:
 - जिगीषा “the desire to conquer”
- an agent noun, formed with the suffix *su*:
 - जिगीषुः “one who wants to conquer”

As these examples show, the verbal and nominal forms share a stem, which is characterized by reduplication and a final *s*. The rules for reduplication are the same as those of the present (a *u* or *ū* in the root gives *u* in the reduplicant, but otherwise the vowel of the reduplicant is *i*). However, a number of roots form the desiderative in a slightly irregular

way, and their forms ought to be memorized. This includes the following long-vowel roots:

- $\sqrt{\text{दा}} + \text{स} [+ \text{ति}] \rightarrow \text{दित्सति}$ “wants to give”
- $\sqrt{\text{धा}} + \text{स} [+ \text{ति}] \rightarrow \text{धित्सति}$ “wants to place”
- $\sqrt{\text{मा}} + \text{स} [+ \text{ति}] \rightarrow \text{मित्सति}$ “wants to measure”
- $\sqrt{\text{मी}} + \text{स} [+ \text{ति}] \rightarrow \text{मित्सति}$ “wants to destroy”

As well as the following other roots:

- $\sqrt{\text{आप्}} + \text{स} [+ \text{ति}] \rightarrow \text{इप्सति}$ “wants to obtain”
- $\sqrt{\text{रभ्}} + \text{स} [+ \text{ते}] \rightarrow \text{रिप्सते}$ “wants to begin”
- $\sqrt{\text{लभ्}} + \text{स} [+ \text{ते}] \rightarrow \text{लिप्सते}$ “wants to take”
- $\sqrt{\text{दम्भ्}} + \text{स} [+ \text{ति}] \rightarrow \text{धिप्सति}$ or धीप्सति “wants to deceive”
- $\sqrt{\text{शक्}} + \text{स} [+ \text{ति}] \rightarrow \text{शिक्षति}$ “wants to be able, learns”
- $\sqrt{\text{पत्}} + \text{स} [+ \text{ति}] \rightarrow \text{पित्सति}$ “wants to fall”
- $\sqrt{\text{पद्}} + \text{स} [+ \text{ते}] \rightarrow \text{पित्सते}$ “wants to occur”
- $\sqrt{\text{ज्ञप्}} + \text{स} [+ \text{ते}] \rightarrow \text{ज्ञीप्सति}$ “wants to command”
- $\sqrt{\text{मुञ्च}} + \text{स} [+ \text{ते}] \rightarrow \text{मोक्षते}$ “wants to be free” (or मुमुक्षते)

NOTE: Some of these forms can be explained as remodeled stems arising from a reduplicant followed by a zero-grade root, e.g., $*\text{pí-pt-sa-} \rightarrow \text{pítsa-}$, $*\text{sí-sk-sa-} \rightarrow \text{síksa-}$, etc.

Generally the root appears in the zero grade, except of course when it is followed by the augment *i* (इट्), which induces *gunāḥ*. Roots that end in the vowels *i* and *u* lengthen this vowel, and roots that end in *r* change it to *īr* or, after labels, to *ūr*:

- $\sqrt{\text{कृ}} + \text{स} [+ \text{ति}] \rightarrow \text{चिकीर्षति}$ “wants to do”

- √श्रु + स [+ ति] → श्रुषति “wants to listen, obeys”
- √श्रि + स [+ ति] → शिश्रीषति “wants to adhere”

§24.3. The intensive

The intensive (sometimes also called the frequentative) is another secondary verb form that indicates the action of the verb is performed repeatedly, concentratedly, or intensely (समभिहारः, *Aṣṭādhyāyī* 3.1.22). It is easily recognized from his **heavy reduplication**, discussed below. Any root that has a single vowel (i.e., is monosyllabic) and begins with a consonant can form an intensive; this excludes tenth-class verbs (which are technically considered not to be monosyllabic) as well as most roots beginning with vowels (see Kātyāyana on 3.1.22 for exceptions).

The intensive is formed by combining (a) one of three forms of “heavy reduplication” with (b) one of two present stem forming suffixes (विकरणः). The combination is relatively free, i.e., either form of the present stem may take any form of reduplication. The options for (b) are:

- a **thematic** verb, formed with the suffix *-ya-* with the root in the **zero grade** (यङ्), which is used exclusively in the *ātmanēpadām*;
- an **athematic** verb, formed with a zero suffix (यङ्लुक्), which is used exclusively in the *parasmaipadām* (very few *ātmanēpadām* forms are found even in the Veda).

The thematic *ātmanēpadām* form uses the regular thematic *ātmanēpadām* endings. Apart from the reduplication, roots undergo exactly the same changes that they undergo before the suffixes यक् (of the present passive) or यन् (of fourth-class presents). One exception is that verbs that end in *r* substitute *rī* rather than *ri* before the suffix (*Aṣṭādhyāyī* 7.4.27).

The athematic *parasmaipadām* form uses the same endings, and indeed the same alternation between strong and weak forms of the verbal stem, that are found in third-class

presents. That is to say, the athematic forms use the strong (*guṇāḥ*) form in the singular of the present and the imperfect, and the first person and third person singular of the imperative, and the weak form (zero-grade) everywhere else. There is one major distinction, however: in the singular, it is generally possible to use the linking-vowel *ī* (इडागमः) between a **final consonant** of the root and the **initial consonant** of the singular ending, and in such cases, the root syllable remains in the weak form (*Aṣṭādhyāyī* 7.3.87). Here, then, is a paradigm of the athematic *parasmaipadām* form and, for completeness, the thematic *ātmanēpadām* form:

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	वेवेत्ति, वेविदीति	वेवित्तः	वेविदति
मध्यमपुरुषः	वेवेत्सि, वेविदीषि	वेवित्थः	वेवित्थ
उत्तमपुरुषः	वेवेद्मि, वेविदीमि	वेविद्वः	वेविद्मः

	एकवचने	द्विवचने	बहुवचने
प्रथमपुरुषः	वेविद्यते	वेविद्येते	वेविद्यन्ते
मध्यमपुरुषः	वेविद्यसे	वेविद्येथे	वेविद्यध्वे
उत्तमपुरुषः	वेविद्ये	वेविद्यावहि	वेविद्यामहि

The characteristic **heavy reduplication** of the intensive is formed in one of the following ways.

The **preferred option** is to reduplicate using a template, CaC (where C represents a consonant), that is made from the verbal root. The first consonant is, as usual, a “reduced” (i.e., phonologically unmarked) copy of the initial consonant of the root, observing the constraints well-known from other types of reduplication (no conjunct consonants, no aspirates, and no velar consonants — although one form of this reduplication allows ve-

lar consonants in rare circumstances). The vowel of the reduplicant is the *guṇāḥ* vowel *a*. The final consonant of the reduplicant then **first consonant segment of the syllabic nucleus** of the root. You can think of this in the following way: (a) put the root into the *guṇāḥ* or full-grade form, so that the vowel *a* will appear between the initial (onset) consonants and any final (coda) consonants; (b) take as the reduplicant a reduced form of the initial (onset) consonant, followed by the vowel *a*, followed by the *first consonant* after this vowel. In most cases, when the vowel of the root is *i*, *ī*, *u*, *ū*, *ṛ* or *ṝ*, then this process can be summarized by saying: **reduplicate with a *guṇāḥ* form of the root**. Here are some examples:

- √विद् “know” (template *(v)ay*) → वेविद्-
- √नी “lead” (template *(n)ay*) → नेनी-
- √कृ “do” (template *(k)ar*) → चकृ-
- √क्रुश “become angry” (template *(kr)av*) → चोक्रुश-
- √श्रु “hear” (template *(śr)av*) → शोश्रु-
- √भू “become” (template *(bh)av*) → भोभू-
- √हु “offer” (template *(h)av*) → जोहु-
- √वृत् “turn” (template *(v)ar*) → चवृत्-
- √चर् “walk” (template *(c)ar*) → चर्चर्-
- √चल् “walk” (template *(c)al*) → चल्ल-
- √क्रन्द “scream” (template *(kr)an*) → चक्रन्द-
- √हन् “kill” (template *(h)an*) → जहन्-
- √गम् “go” (template *(g)am*) → जङ्गम्-
- √नम् “bow” (template *(n)am*) → नन्नम्-
- √भ्रम् “roam” (template *(bhr)am*) → बभ्रम्-

NOTE: A number of forms show a nasal in the reduplicant that is not obviously there in the root (*Aṣṭādhyāyī* 7.4.86): जङ्जप्- from √जप् “mutter,” जङ्जम्- from √जम् “yawn,” जङ्गद्- from √गद् “enter into,” दन्दश्- from √दश् “bite,” and दन्दद्- from √दद् “burn,” among others. In most of these cases the medial *a* of the root is in fact the reflex of a vocalized **n̄* or **m̄*, so that the template of the reduplicant is in fact *Can* or *Cam* (for the nasal, compare the forms दंश: “biting,” दंश्यति “shines,” जम्भ: “tusk,” and the Prakrit verb जम्भा “talks”).

In the thematic intensive, the form of the reduplicant is not determined by the root itself, but the root as modified by the following suffix यङ्. Hence, for roots of the form *Cā* or *Cr*, the thematic intensive will form the modified stem *Cīyá-* and *Crīyá-* after the reduplication, and the reduplication will use the *guṇāḥ* form of the vowel *i*, i.e., *ē*:

- √कृ “do” → चेक्रीय-
- √कृ “scatter” → चेकीर्य-
- √दा “give” → देदीय-
- √व्रा “smell” → जेव्रीय-
- √स्वप् “sleep” → सोषुप्य-

You may have noticed that this mode of reduplication is only used when it would result in a reduplicant of the form *CaC* where the second consonant is either a nasal (*n*, *m*) or a semivowel (*y*, *v*, *r*, *l*). When there is no nasal or semivowel as the first consonant segment of the full-grade root, this mode of reduplication is not possible. Instead, the reduplicant is formed with a long *ā* instead. This also happens to a number of roots with the vowel *ṛ*, which also allow the earlier kind of reduplication:

- √स्वप् “sleep” → सास्वप्- (but thematic सोषुप्य- above)
- √वश् “wish” → वावश्-
- √श्वस् “breathe” → शाश्वस्-
- √वद् “speak” → वावद्-

- √धृ “carry” → दाधृ-
- √दृ “split” → दादृ-

NOTE: In fact the earlier language very rarely allows the preferred template CaC to be formed even from roots with a final stop consonant: hence बद्धधृ- and बद्धाधृ- from √बाधृ “press into.”

The above processes of reduplication result in a reduplicant that is **prosodically heavy** but still consists of a single syllable (which ends either with a long vowel or a consonant). There is another process of reduplication available to certain verbs in the intensive that similarly results in a prosodically heavy reduplicant, but in this case the reduplicant consists of **two** syllables. The process is simple: take the prosodic template *CaC*, discussed above, and then add the linking-vowel *i* (if the root begins with a conjunct consonant) or *ī* (if the root begins with a simple consonant). This option is available for all roots that contain the vowel *r̥* (*Aṣṭādhyāyī* 7.4.91):

- √वृत् “turn” (template *(v)ar*) → वरीवृत्-
- √वृधृ “grow” (template *(v)ar*) → वरीवृधृ-
- √कृ “do” (template *(k)ar*) → चरीकृ-
- √मृञ् “wipe” (template *(m)ar*) → मरीमृञ्-

A number of roots — most of which would have formed their template as *Can* — take a version of this reduplication, whereby the reduplicant is *Canī-* (*Aṣṭādhyāyī* 7.4.84):

- √ध्वंस “perish (template *(dhv)an*) → दनिध्वंस-
- √स्कन्द “leap” (template *(sk)an*) → चनिष्कन्द-
- √भ्रंश् “fall” (template *(bhr)an*) → बरीभ्रंश्-
- √श्रंस “fall” (template *(śr)an*) → सनीश्रंस-
- √वञ्च “become crooked” (template *(v)an*) → वनीवञ्च-

- √पद् “occur” (irregular) → पनीपद्-
- √पत् “fly” (irregular) → पनीपत्-
- √गम् “go” (irregular) → गनीगम्-

Finally, we can note that in this final type of reduplication, the original velar consonant of the root is sometimes retained in the reduplicant, such as गनीगन्ति (from √गम्), करीकर्ति (√कृ), कनिक्रन्ति (√क्रन्द), कनिष्कन्ति (√स्कन्द). See *Aṣṭādhyāyī* 7.4.91 for further exceptions.

To summarize we can list the available intensive forms of the third person singular of √कृ “do” in the present tense: चर्कर्ति, चर्करीति, चरीकर्ति, चरीकरीति, करीकर्ति, करीकरीति, and चेक्रीयते.

§25. Denominal verbs

Denominal verbs are verbs which are formed on the basis of a nominal stem (प्रातिपदिकम्). There are two general strategies of forming verbs from nominal stems: one turns the nominal stem into a **verbal prefix** (गतिः, see below), which can then be used with other verbs; the other turns the nominal stem into a **verbal stem** by means of a stem-forming suffix (विकरणः).

§25.1. Compounded verbs (च्चि)

The suffix च्चि can be added onto a nominal stem in order to convert it into a verbal prefix (गतिः), by *Aṣṭādhyāyī* 1.4.61. The condition for using च्चि is that whatever is referred to by the nominal stem ‘becomes something that it was not before,’ i.e., it undergoes a change of state (*Aṣṭādhyāyī* 5.4.50: अभूततद्भावे कृभ्वस्तियोगे संपद्यकर्तरि च्चिः). Pāṇini restricts such prefixes to use with the verbal roots √कृ ‘do,’ √भू ‘become,’ and √अस् ‘be.’

In terms of their form, such prefixes substitute *i* in place of a stem-final *a* or *ā* (*Aṣṭādhyāyī* 7.4.32).

- शुक्लीकरोति 'he makes white, he whitens' (something that was not white before: शुक्ल- 'white')
- शुक्लीभवति 'it becomes white'
- दीर्घीभवति 'it becomes long' (दीर्घ- 'long')
- भस्मीकृतः 'made into ashes' (भस्मन्- 'ashes')

Note the very common forms स्वी-√कृ and अङ्गी-√कृ, both of which mean “accept,” and are formed by च्वि from स्व- and अङ्ग- respectively. Similarly formed (although technically not with च्वि) is ऊरी-√कृ “accept.”

§25.2. Denominative verbs (नामधातवः)

Like English, Sanskrit allows nominal stems to be used as verbs (i.e., to take the person-number-tense endings of the present system) by adding a *present stem forming suffix* to the nominal stem. The resulting forms are called **denominatives**. They are quite diverse in their formation and in their meaning. If x represents the meaning of the underlying nominal stem, the resulting denominative verb could have a range of meanings (from Wikipedia, with some additional notes):

- to make (something) into x (resultative / transitive);
- to become x (resultative / intransitive);
- to treat (something) like x (similative / transitive);
- to act like x (similative / intransitive);
- to perform x (performative);

The reason for distinguishing transitive and intransitive versions of various denominative meanings is because these meanings are often produced by different suffixes in Sanskrit.

Transitive denominatives tend to take *parasmaipadám* endings, while intransitive denominatives tend to take *ātmanēpadám* endings. Note the following pairs:

- शिथिल- adj. “loose”
 - शिथिलयति “he makes (something) loose” (resultative / transitive)
 - शिथिलायते “it becomes loose” (resultative / intransitive)
- कलुष- adj. “turbid”
 - कलुषयति “he makes (something) turbid” (resultative / transitive)
 - कलुषायते “it becomes turbid” (resultative / intransitive)

Most denominative suffixes involve the element *-ya-* added onto a nominal stem. When the nominal stem ends in *a*, we can distinguish three types of denominative suffixes, exemplified in turn:

- *-aya-*, with either *parasmaipadám* endings (णिच्) or *ātmanēpadám* endings (णिङ्);
- *-īya-*, with *parasmaipadám* endings (क्वच्); or
- *-āya-*, with *ātmanēpadám* endings (क्वङ्).

-aya- (णिच्/णिङ्). This suffix should already be familiar from the causative and tenth-class verbs. It is added onto a relatively small set of nominal stems, and its meaning is usually transitive and resultative (to make something *x* or to endow something with *x*), and in these senses takes *parasmaipadám* endings. In a very few cases the resulting verb takes *ātmanēpadám* endings (see *Aṣṭādhyāyī* 3.1.20 and *Aṣṭādhyāyī* 3.1.21 and *Aṣṭādhyāyī* 3.1.24).

- मुण्ड- adj. “bald” → मुण्डयति “he shaves” (resultative / transitive)
- मिश्र- adj. “mixed” → मिश्रयति “he mixes” (resultative / transitive)
- श्लक्ष्ण- adj. “soft” → श्लक्ष्णयति “he softens” (resultative / transitive)
- लवण- adj. “salty” → लवणयति “he salts” (resultative / transitive)

- व्रत- n. “vow” → व्रतयति “he vows” (resultative / transitive)
- वस्त्र- n. “clothing” → वस्त्रयति “he wears” (resultative / transitive)
- हल- n. “plough” → हलयति “he ploughs”
- कल- m. “the die *kali*” → कलयति “he rolls *kali*”
- कृत- n. “the die *kr̥ta*” → कृतयति “he rolls *kr̥ta*”
- तूस्त- n. “dreadlocks” → तूस्तयति “he wears dreadlocks”
- रूप- n. “form” → रूपयति “he discerns”
- वर्ण- m. “description” → वर्णयति “he describes”

-*ya*- (यक्/क्यच्/क्यङ्). We can treat these suffixes together when they come after a nominal stem ending in a consonant, because the consonant of the stem is retained. They are typically performatives, which tend to take *ātmanēpadām* endings when they primarily affect the agent himself/herself, and *parasmaipadām* endings when they primarily affect someone else (*Aṣṭādhyāyī* 3.1.19, *Aṣṭādhyāyī* 3.1.15).

- भिषज्- m. “(medical) treatment” → भिषज्यति “he treats” (यक्)
- कण्डू- f. “itch” → कण्डूयते “he itches” (यक्)
- मनस्- n. “mind” → मनस्यति “he is minded” (यक्)
- दुवस्- n. “reverence” → दुवस्यति “he reveres” (यक्)
- नमस्- n. “reverence” → नमस्यति “he reveres” (क्यच्)
- तपस्- n. “penance” → तपस्यते “he performs penance” (क्यङ्)
- वरिवस्- n. “honor” → वरिवस्यति “he honors” (क्यच्)

-*īya*- (क्यच्). This suffix, which replaces the final *a* of a nominal stem with *ī*, primarily has a desiderative meaning (to desire *x*) when intransitive *Aṣṭādhyāyī* 3.1.8 and a simulative meaning (to treat someone like *x* when transitive (*Aṣṭādhyāyī* 3.1.10)):

- पुत्र- m. “son”
 - पुत्रीयति “he desires a son” (क्यच्, desiderative intransitive)
 - पुत्रीयति “he treats (someone) like a son” (क्यच्, simultative transitive)
- प्रावार- m. “cloak”
 - प्रावारीयति “he desires a cloak” (क्यच्, desiderative intransitive)
 - प्रावारीयति “he uses as a cloak” (क्यच्, simultative transitive)

The sense of “desiring *x*” is also found in the suffix काम्यच्, e.g., पुत्रकाम्यति “he desires a son,” which transparently builds denominatives from a compound noun *x-kāmaḥ* “desire for *x*.”

-āya- (क्यष्/क्यङ्). This is the **most common** desiderative suffix. It has resultative and performative meanings, both transitive (generally with *parasmaipadām* endings, using the suffix क्यष्) and intransitive (generally with *ātmanēpadām* endings, using the suffixes क्यष् and क्यङ्). In the resultative (but not performative) meanings, a final consonant of a stem is usually lost, and the preceding vowel is lengthened.

- लोहित- adj. “red” → लोहितायते “he becomes red” (क्यष्, resultative intransitive)
- सुमनस्- adj. “well-disposed” → सुमनायते “he becomes well-disposed” (क्यङ्, resultative intransitive)
- शश्वत्- adj. “eternal” → शश्वायते “he becomes eternal” (क्यङ्, resultative intransitive)
- शीघ्र- adj. “quick” → शीघ्रायते “he becomes quick” (क्यङ्, resultative intransitive)
- करुणा- adj. “compassion” → करुणायते “he becomes compassionate” (क्यष्, resultative intransitive)
- कृपा- f. “pity” → कृपायते “he take pity” (क्यष्, resultative intransitive)
- निद्रा- f. “sleep” → निद्रायते “he sleeps” (क्यष्, performative intransitive)
- शब्द- m. “sound” → शब्दायते “he makes a sound” (क्यङ्, performative intransitive)
- वैर- n. “hostility” → वैरायते “he is hostile” (क्यङ्, performative intransitive)

- कलह- m. “quarrel” → कलहायते “he quarrels” (क्यङ्, performative intransitive)

The most productive meaning of this suffix, however, is an intransitive simultative (“to act like *x*”). In this meaning, the final consonant of a nominal stem is usually lost, and the preceding vowel is lengthened.

- द्रुम- m. “tree” → द्रुमायते “it acts as a tree” (क्यङ्, simultative intransitive)
- राजन्- m. “king” → राजायते “he acts like a king” (क्यङ्, simultative intransitive)
- अप्सरस्- f. “*apsaras*” → अप्सरायते “she is like an *apsaras*” (क्यङ्, simultative intransitive)
- श्येन- m. “hawk” → श्येनायते “it acts like a hawk” (क्यङ्, simultative intransitive)

§26. Verbal prefixes (गतिः)

Sanskrit has several classes of indeclinable words (अव्ययानि)—words that do not change their form based on their grammatical category. One important class of such words can be called *verbal prefixes*, so called because they occur before, and modify the meaning of, verbal forms.

Pāṇini actually distinguishes between several categories of verbal prefixes. The smaller category is called उपसर्गाः or “preverbs.” These are basically unanalyzeable particles. There are about twenty of them, and nearly all of them are familiar from other Indo-European languages. Many of these preverbs are also used in a different syntactic function, namely, as adpositions (कर्मप्रवचनीयानि). The larger category, which includes preverbs, is called गतिः in Pāṇini’s technical terminology. We will refer to it as “verbal prefixes” in general, since it includes the preverbs alongside a wide range of other words—mostly indeclinables—that immediately precede a verbal form and either modify its meaning or, in a few cases, supply its primary meaning.

§26.1. Preverbs (उपसर्गः)

The smaller category of *preverbs* is taught as a list beginning with प्र. Hence they are called प्रादि “[the list which] begins with *pra*” (mentioned in *Aṣṭādhyāyī* 1.4.58). When they are used with verbs, they receive the technical term “preverb” (उपसर्गः) according to *Aṣṭādhyāyī* 1.4.59. But they are also all considered verbal prefixes (गतिः), which has consequences for the accentuation of prefixed forms.

As to their *meaning*, the general senses of all of the prefixes have been listed below. In many cases, however, the preverb can change the meaning of the verb entirely. As to their *form*, prefixes will sometimes trigger the application of certain phonological or morphological rules in the following verbal form. One important example is the selection of the converb ending: verbs with a prefix (गतिः) take the converb ending य (ल्यप्), as opposed to त्वा (त्त्वा), which is only used for unprefixed verbs.

Preverbs can also **combine** with each other. Usually no more than three preverbs are to be found on any one form. There is a strong tendency towards certain orders of preverbs. The preverb आ, for example, is almost always *closest* to, or *most interior to*, the verb. For a study of preverb ordering, see the dissertation of Julia Papke.

For the retroflexion of a root-initial *s* or *n* by a trigger in a preverb, see the discussion of retroflexion in internal *sandhi* above.

- प्र “forth”
- परा “away, beyond”
- अप “away”
- सम् “together with”
- अच् “after”
- अव “down”

- नि: “out of, away from”
- दु: “bad, difficult”
- वि “apart, in different directions”
- आ (taught as आङ् by Pāṇini) “near, in this direction”
- नि “down”
- अधि “over”
- अपि “close, near”
- अति “beyond”
- सु “good”
- उद् “up”
- अभि “towards”
- प्रति “against”
- परि “around”
- उप “close by”

§26.2. Other verbal prefixes

A wide range of other indeclinable forms can be used as verbal prefixes. Here is a selection:

- अलम् (*Aṣṭādhyāyī* 1.4.64)
- तिर: (*Aṣṭādhyāyī* 1.4.71) “disappearance”
- सत् (*Aṣṭādhyāyī* 1.4.63)
- असत् (*Aṣṭādhyāyī* 1.4.63)

- अन्तर (Aṣṭādhyāyī 1.4.65) under certain circumstances
- पुरस् (Aṣṭādhyāyī 1.4.67) “in front of”
- अस्तम् (Aṣṭādhyāyī 1.4.68) “setting”
- अच्छ (Aṣṭādhyāyī 1.4.69)

A number are only used with कृ (following Aṣṭādhyāyī 1.4.72):

- साक्षात्
- हस्ते

§26.3. “Honorary prefixes” (च्वि)

Most nominal stems can be turned into a verbal prefix by adding a suffix that Pāṇini calls च्वि (Aṣṭādhyāyī 1.4.61). He assigns this suffix the sense of “becoming something which it was previously not.” The prefixes so formed are used only with the verbs √कृ and √भू, which mean “make [something] *x*” or “become *x*.” The suffix च्वि replaces the final *-a* or *-ā* of a nominal stem with the long vowel *-ī* (Aṣṭādhyāyī 7.4.32).

- *śukla-* “white” → शुक्लीकरोति “he makes white, whitens”; शुक्लीभवति “it becomes white”
- *ghaṭa-* “pot” → घटीकरोति “he turns [something] into a pot”; घटीभवति “it becomes a pot”
- सानूनि गन्धः सुरभीकरोति ।

“The scent makes fragrant the peaks.”

(Kumārasambhavaḥ 1.19)

§27. The infinitive

The infinitive is an indeclinable verbal noun that is primarily used as the *complement* of another verb or an adjective, similar to the “to” infinitive in English (“he is able *to read*,” “he wants *to read*,” etc.).

The infinitive of all verbs is formed directly from the verbal root by the addition of the suffix तुमुन्, i.e., *-tum* with full grade of the verbal root and an accent on the first syllable of the resulting form. The only variable in the formation of the infinitive in *-tum* is whether the root takes the augment इट् before such an ending or not. As noted above, the rules for the augment इट् are one of the trickiest parts of Sanskrit grammar, and generally they should be known inductively.

Here are some verbs that do not take the augment:

- Most roots ending in vowels, *apart from ū and ̄:*
 - √दा “give” → दातुम्
 - √ज्ञा “know” → ज्ञातुम्
 - √जि “conquer” → जेतुम्
 - √नी “lead” → नेतुम्
 - √श्रु “hear” → श्रोतुम्
 - √स्मृ “remember” → स्मर्तुम्
- √त्यज् “abandon” → त्यक्तुम्
- √भुज् “enjoy” → भोक्तुम्
- √वच् “speak” → वक्तुम्
- √शक् “be able” → शक्तुम्
- √विद् “find” → वेत्तुम्
- √हन् “kill” → हन्तुम्
- √तप् “heat” → तप्तुम्
- √लभ् “obtain” → लब्धुम्
- √रम् “enjoy” → रन्तुम्

- √गम् “go” → गन्तुम्
- √दृश् “see” → द्रष्टुम्
- √वह् “carry” → वोढुम्

Roots that optionally take the augment:

- √सह् “put up with” → सोढुम् or सहितुम्
- √सू “give birth” → सोतुम् or सवितुम्
- √इष् “desire” → एष्टुम् or एषितुम्
- √शास् “discipline” → शास्तुम् or शासितुम्

Most other roots do take the augment:

- Most roots ending in the vowel *ū* or *ī*:
 - √भू “become” → भवितुम्
 - √लू “cut” → लवितुम्
 - √खाद् “eat” → खादितुम्
 - √ईक्ष् “see” → प्रेक्षितुम्
 - √वद् “speak” → वदितुम्
 - √ग्रह् “grasp” → ग्रहीतुम् (with special lengthening of the augment)

There are two primary **usages** of the infinitive. The first, and most common, is as a complement to a verb (*Aṣṭādhyāyī* 3.4.65: these include √शक् “be able, *potere*” √अर्ह् “be deserving, *debere*” √इष् “want, *volere*”, √सह् “be capable,” √ज्ञा “know,” √रम् or उप-क्रम् “begin”) or adjective (adjectival forms of all of the preceding as well as समर्थ- “capable”) or the indeclinable अलम् “enough, sufficient, capable”:

- *rāmaḥ śatrūñ jētum alam* “Rāma is capable of conquering his enemies”

- *rāmaḥ śatrūñ jētum samarthah* “id.”
- *rāmaḥ śatrūñ jētum śaknōti* “id.”
- *tad vaktum na śaknōmi* “I am not able to say that.”
- *sā jñātum icchati* “She wants to know.”
- *āsitum arhasi* “You ought to sit down.”
- *kaṇṇī racitum ārabhatē* “The poet begins to compose.”
- *na nivāritum śahantē* “They are not capable of resisting.”

The infinitive is not marked for agreement with either an agent or a patient; it inherits its construction from the form that governs it. That is, if an infinitive is governed by a verb in the कर्मणि प्रयोगः, it should be understood as referring to the *patient* of the verbal action:

- *rāmaḥ śatrubhir jētum na śakyatē* “Rāma cannot be conquered by his enemies”
- *tad vaktum nēśyatē* “That is not desired to be said.”
- *hētir na nivāritum śakyatē* “The missile cannot be resisted.”

This restriction means that the construction cannot shift from the main verb to its infinitive complement, i.e., you cannot literally say “he does not want this to be said,” and instead you must say “by him this is not wanted to be said” (*tēna nēdam vaktum iśyatē*).

One other use of the infinitive is to express the *purpose* with which an action is undertaken by a particular agent (*Aṣṭādhyāyī* 3.3.10). As in the previous case, the agent of the infinitive is identical with the agent of the verbal form that governs it:

- *bhōktum vrajati* “He is going to eat.”

§28. The converb

Sanskrit has a verbal form called a “converb” that is unfamiliar to speakers of Indo-European languages but identical in function to certain forms in Dravidian languages (such as the Tamil *vinaiyeccam*). European grammar have come up with various names: “gerunds” (Müller, Whitney, Macdonell, followed by Deshpande, the Goldmans, and Maurer); “absolutives” (Shulman and Priya Hart, Ruppel); “continuatives” (George Hart); as well as “adverbial,” “indeclinable,” or “conjunctive participles.” To avoid confusion with other forms, and align with the emerging literature in linguistic typology, I call these forms “converbs.”

Converbs are **non-finite** verbal forms. They do not express the categories of person, number, tense, or diathesis, and accordingly they are *uninflected*. In this sense they are similar to “infinitives” (कृष्ण). Similarly both converbs and infinitives (in normal circumstances) must be used with another verbal form. And similarly both converbs and infinitives are “controlled” by this other verbal form, which supplies the **agent** for both. (Note that the requirement is for the verbal predicate to have the same *agent* as the converb, not the same *subject*.) Whereas infinitives are generally the **complement** of another verb, however, converbs are **adverbial modifiers** of another verb. A verb without its infinitive complement is incomplete; a verb without a converb is not. Since they are *adverbial*, converbs (and the phrases they govern) answer the question “how” the agent performs the action expressed by the main verb. Pāṇini’s rule (*Aṣṭādhyāyī* 3.4.21) says that converbs are used to express the **temporally prior** of two actions that have the same agent. Hence they can generally be translated, at least at a first pass, as “having *xed*.” Adverbial clauses in English (“after having...,” “when...,” “once...”) will generally be good translation options.

Converbs are, like infinitives, essentially agentless verbs, and they can take any of the arguments or modifiers that the corresponding verb form can take, except those that express the agent. They can also be used *in sequence*, i.e., a single sentence may have more

than one converb phrase. The converbs are typically not connected with *ca*.

- आपृच्छ्य गतः “Having taken his leave, he left.”
- मत्वा प्रतिवक्ति “Having thought, he responds.”
- भूतं दृष्ट्वा त्रसति “Having seen a ghost, he is afraid.”
- लेखं लिखित्वा गता “Having written a letter, she left.”
- राज्यं मन्त्रिणि आरोप्य सुखम् अनुभवति “Having made over the kingdom to his minister, he experiences pleasure.”

NOTE: The requirement of having the same agent is relaxed in cases of metonymy, e.g., तं दृष्ट्वा हृदयं द्रवति “my heart melts when I see him” (the agent of द्रवति is not the same as the agent of दृष्ट्वा, but the former is located inside the latter).

Note that multiple converbs can be used in a sentence:

- पथिको ग्रामं प्राप्य तत्रैव उषित्वा प्रातः बुद्ध्वा सामग्रीम् समादाय निरगात्।
“The traveller reached the village, stayed the night there, woke up in the morning, gathered his belongings and left.”

Sanskrit has a number of converb forms. The most common one is formed with the suffixes -त्वा (त्त्वा) and -य (ल्यप्), which are in complementary distribution with each other. Another, formed with -अम् (णमुल्), is used less frequently in Classical Sanskrit, but is common in Vedic prose.

§28.1. -त्वा (त्त्वा)

This suffix is used when the verbal root is not prefixed. (When a verbal prefix, or गतिः, appears, the suffix -य is used instead.) The suffix is added onto the **zero grade** of the root (as indicated by the marker *K*); if the root is capable of undergoing *samprasāraṇam*, it does. See the discussion of vowel gradation. The accent is on the suffix.

- $\sqrt{\text{कृ}} + \text{त्वा} \rightarrow \text{कृत्वा}$ “having done”
- $\sqrt{\text{या}} + \text{त्वा} \rightarrow \text{यात्वा}$ “having gone”
- $\sqrt{\text{प्रच्छ}} + \text{त्वा} \rightarrow \text{पृष्ट्वा}$ “having asked” (with सम्प्रसारणम्)
- $\sqrt{\text{वच्}} + \text{त्वा} \rightarrow \text{उक्त्वा}$ “having said” (with सम्प्रसारणम्)

Because the suffix begins with a consonant, the augment इ (इट्) will be added between the root and the suffix in some verbs. Fewer roots take the augment with -त्वा than they do with the infinitive suffix -तुम्: hence भवितुम्, but भूत्वा. Most roots ending in vowels do not take this augment, the one exception being $\sqrt{\text{शी}}$ “lie,” which forms शयित्वा. Among the roots ending in consonants, recall that some *always* take the augment: all of those that are “superheavy” and therefore not susceptible to vowel gradation (including roots with a long vowel followed by a consonant, such as $\sqrt{\text{जीव्}}$ “live” and $\sqrt{\text{सेव्}}$ “serve,” as well as roots with two final consonants, such as $\sqrt{\text{चुम्ब्}}$ “kiss” and $\sqrt{\text{मज्ज्}}$ “sink”); and those that end in retroflex consonants ($\sqrt{\text{पठ्}}$ “read”), voiceless aspirate stops ($\sqrt{\text{लिख्}}$ “write”), or the sound *li* ($\sqrt{\text{मिल्}}$ “meet”).

Generally a root goes into the full grade, or गुणः, when it takes the augment इ. Consider वर्तित्वा from $\sqrt{\text{वृत्}}$ “turn.” But there are several important exceptions. Roots that start with a consonant, have the vowel *i/i* or *u/u*, and end in a consonant other than *y* or *v* have the option of taking गुणः or not before the augment; the same option extends to the roots $\sqrt{\text{कृश्}}$ “grow thin,” $\sqrt{\text{मृष्}}$ “put up with,” and $\sqrt{\text{तृष्}}$ “be thirsty” (*Aṣṭādhyāyī* 1.2.25):

- $\sqrt{\text{द्युत्}} + \text{त्वा} \rightarrow \text{द्युतित्वा}$ or द्योतित्वा “having shone”
- $\sqrt{\text{तृष्}} + \text{त्वा} \rightarrow \text{तृषित्वा}$ or तर्षित्वा “having felt thirst”

A short but important list of verbs always takes zero grade before the suffix, namely, $\sqrt{\text{रुद्}}$ “cry,” $\sqrt{\text{विद्}}$ “know,” $\sqrt{\text{मुष्}}$ “steal,” $\sqrt{\text{ग्रह्}}$ “grasp,” $\sqrt{\text{मृद्}}$ “delight,” and $\sqrt{\text{गुध्}}$ “cover,” $\sqrt{\text{क्लिश्}}$ “afflict,” $\sqrt{\text{वद्}}$ “speak,” and $\sqrt{\text{वस्}}$ “stay (in a place).” Of these roots, note that $\sqrt{\text{ग्रह्}}$ exceptionally takes *i* rather than *i* as its augment.

- $\sqrt{\text{ग्रह}} + \text{त्वा} \rightarrow \text{गृहीत्वा}$ “having grasped”
- $\sqrt{\text{वद्}} + \text{त्वा} \rightarrow \text{उदित्वा}$ “having spoken”
- $\sqrt{\text{वस्}} + \text{त्वा} \rightarrow \text{उषित्वा}$ “having stayed”

§28.2. -य (ल्यप्)

This suffix is used when the verbal root has any prefix (गतिः), including but not limited to a preverb (उपसर्गः). It, too, is added to the **zero grade** of the root (but see the complications below). If the weight of the verbal root itself is *light*, that is, if it has a short vowel that is not followed by a consonant, then the augment त् (तुक्) is added between the verbal root and the suffix. The accent is on the syllable before the suffix, as indicated by the marker *L*.

- अधि + $\sqrt{\text{कृ}} + \text{य} \rightarrow \text{अधिकृत्य}$ “having made the topic”
- व + $\sqrt{\text{गाह}} + \text{य} \rightarrow \text{वगाह्य}$ “having plunged into”
- परि + $\sqrt{\text{प्रच्छ}} + \text{य} \rightarrow \text{परिपृच्छ्य}$ “having inquired”

Verbs that end in *-am* or *-an*, which would generally form their zero grade by simply dropping the nasal (i.e., not those verbs, like $\sqrt{\text{श्रम्}}$, $\sqrt{\text{दम्}}$, and $\sqrt{\text{क्रम}}$, which historically ended in a laryngeal and formed their zero grade by lengthening the vowel before the nasal), have the option of counting either as “light roots,” by dropping the nasal and taking the suffix -त्य, or “heavy roots,” by keeping the nasal and taking the suffix -यः

- अव + $\sqrt{\text{गम्}} + \text{य} \rightarrow \text{अवगत्य}$ or अवगम्य “having understood”
- प्र + $\sqrt{\text{नम्}} + \text{य} \rightarrow \text{प्रणत्य}$ or प्रणम्य “having bowed”

The augment इ (इट्) is never used before this suffix. There are, however, a number of complications regarding the gradation of the root that ought to be noted. The root standardly appears in the zero grade, with सम्प्रसारणम् if applicable, as shown above. But roots that end

in a long $-ā$ (or $-ai$) do not take their standard zero-grade form in $-i$ or $-ī$. Rather, they retain their long $-ā$ vowel (*Aṣṭādhyāyī* 6.4.69):

- वि + √ज्ञा + य → विज्ञाय “having discerned”
- निः + √मा + य → निर्माय “having created”

Among **causative** verbs, those in which the root ends in a short vowel followed by a consonant, like √गम्, keep the causative suffix $-āy-$ before the suffix $(-)$, while all others drop it:

- अव + √गम् + अय् + य → अवगमय्य “having caused to understand”
- प्र + √तृ + अय् + य → प्रतार्य “having caused to advance”

§28.3. -अम् (णमुल)

The suffix *NamUL* is, parallel to *Ktvā* and *LyaP*, used to form a converb. A root lengthened by \bar{N} -vr̥ddhi takes the suffix $-am$. When it does occur, it is often repeated in a distributive sense (वीप्सायाम्).

The accent is on the syllable before the suffix (due to the *anubandha L*).

- √कृ + *NamUL* → कारम् “having done”
- √स्मृ + *NamUL* → स्मारम् “having remembered”
- √पा + *NamUL* → पायम् “having drunk”

§28.4. Negating the converb

The converb, as an indeclinable, is considered a *nominal* form, and therefore it is not negated with the proclitic particle न्, but rather with the nominal prefix अ- (before consonants) and अन्- before vowels.

- अकृत्वा “without having done”
- अउत्तवा “without having said”
- अपरिपृच्छ्य “without having inquired”

Chapter 4

Indeclinables

§29. Particles

Indeclinable words, which are called निपाताः (“exceptions”) and अव्ययानि (“indeclinables”), are words that do not change their form according to grammatical categories like gender, number, case, or person. They can be classified into several categories, but the in classification adopted here, they are twofold:

- **particles**, or indeclinable words that are used *on their own* to modify the meaning of a phrase or clause; and
- **adpositions**, or indeclinable words that are used *with a nominal complement* (उपपदम्).

What distinguishes particles from other indeclinables, such as adverbs (*kriyāviśeṣaṇāni*), is that they “indicate” certain aspects of the meaning, or syntax, of the *phrase* or *clause* to which they are attached. In Sanskrit they are often called द्योतकानि or “indicators” of the meaning of a syntactically-connected unit of speech, such as a phrase or clause, rather than “expressors” (वाचकानि) of a meaning of their own.

NOTE: Particles are also sometimes called वाक्यालङ्कारः, “ornaments of a sentence”: I suspect that this phrase means not that the particles are meaningless verse-fillers, as it is often taken to mean, but rather that the particles slightly change the sense of the entire phrase or clause (वाक्यम्) in which they occur.

Speijer (§394) categorized the use of particles under two general headings: *modality* and *connection*. I am not convinced that this categorization can be sustained, but the use of the particles will be discussed in detail below.

The *position* of particles within the clause tells us what unit of speech the particle is connected with. Many Sanskrit particles are *postpositive*, that is, they occur *after* another word, and cannot occur at the beginning of a sentence. It is important to bear phrase structure in mind: a phrase will often consist of multiple words, and a postpositive particle connected with that phrase will very often appear not at the end of the entire phrase, but after the first word in the phrase. For example:

- *pallavāḥ puṣpāni ca mṛdūni* “shoots and soft flowers”

Here we have two noun phrases, one consisting of a single noun (*pallavāḥ*) and the other consisting of a noun with an adjective (*puṣpāni mṛdūni*). The particle *ca* is syntactically connected with the second phrase, but rather than following the *entire* phrase, it follows the *first* word in the phrase.

When a postpositive particle connects with an entire clause, it usually appears in the second position of the clause. This is sometimes called *Wackernagel's Position* after Jacob Wackernagel, who discovered evidence across several Indo-European languages for the tendency to put either unaccented or weakly-accented words immediately after the first accented word in a clause.

A few particles are not only postpositive but *enclitic* as well, which means that the particle has no accent of its own, and forms a single phonological and accentual unit with a

preceding word (its *host*). Sanskrit also has one *proclitic* particle, namely *na*, which forms a single phonological unit with the word a following word.

Despairing of a coherent classification of particles based either on their syntax or on their usage, I present them below in an alphabetical list.

§29.1. अपि

This is an **enclitic** particle, added primarily onto **phrases**, which has the force of **inclusion** (समुच्चयः).

Its most general usage is to mark its host phrase as included in, or added to, something else. That “something else” is implied by the discursive context. In this sense it corresponds closely to the English words “also” or “too.”

- *tēnāpi praśnaḥ pṛṣṭaḥ* “He too asked a question”
 - “He” is included (*samuccitaḥ*) in the set of people who have asked a question.
- *sūrya udēty api* “The sun also rises”
 - “Rising” is included in the set of things that the sun does.
- *sō ’py āgacchati* “He is coming, too.”
 - “He” is included in the set of people who are coming.

Closely related to this inclusive sense of अपि is another sense, which we might call **inclusion contrary to expectation**, which corresponds closely to one usage of the English word “even.” In many cases, only context can tell us whether the expectation of non-inclusion is present, and thus whether अपि should be translated as “even” instead of “also.”

- *sō ’py āgaccati* “Even he is coming.”
 - If there is an expectation that “he” would not come, अपि tells us that “he” is included in the set of people who are coming, contrary to this expectation.

- *sāpi jānāti* “Even she knows.”
 - If there is no expectation that “she” would not know, अपि tells us that “she” is included in the set of people who know, contrary to this expectation.

The inclusive force of अपि is present in one of its most common usages, namely, as a marker of **polarity**, including especially negative polarity:

- *na śabdō 'pi śrutah* “Not even a sound was heard.”
- *sō svam nāmāpi na smṛtavān* “He couldn’t even remember his name.”

Note here that अपि can be added to the interrogative pronoun to give it an indefinite, rather than interrogative, force: hence को 'पि (m.), कपि (f.), and किमपि (n.) mean “someone” or “something.” These pronouns are often found in negative sentences as polarity markers:

- *tēna na kimic chrutam* “He didn’t hear anything.”

Another very common usage of अपि is to give phrases or clauses a **concessive** force.

- *sa rājā dhanavān api nārthibhyō dadāti* “That king, although he is wealthy, does not give to those in need.”

It is also used, especially with numbers, to indicate the sum or totality of a set:

- *saptāpy ṛṣayaḥ* “[all] seven sages”
- *trayō 'pi kālāḥ* “[all] three times”

As its accent indicates, अपि is not a true enclitic, and hence it can stand at the beginning of a sentence. When it does so, however, it obviously does not modify the meaning of a *phrasal* host, because there is nothing that precedes it. Rather, it turns the entire clause into a question:

- *api sandēśō mē dṛṣṭō bhavatā* “Did you see my message?”

§29.2. इव

This is a **postpositive** and **enclitic** particle, connected primarily with **phrases**, which indicates that the phrase with which it is connected serves as the standard (उपमानम्) of **comparison** उपमा. The standard introduced by इव has the same syntactic role in the sentence as the target of comparison (उपमेयम्), and thus if the latter is the nominative case, the former will be, and so on.

- *naur iva bhūś cacāla* “the earth shook like a ship” (*Buddhacarita* 1.21)
- *ālakṣyaraśanā rējē sphuradvidyud iva kṣapā* “[The women] whose girdles became momentarily visible were like the night flashing with lightning” (*Buddhacarita* 4.33)
 - The target (उपमेयम्) is the women, and the standard (उपमानम्) is a two-word phrase, “the night flashing with lightning” (*sphuradvidyut kṣapā*); इव, as a post-positive particle, appears after the first word of the phrase.

§29.3. एव

This is a **postpositive** particle, connected primarily with **phrases**, which has the force of **exclusion** (व्यवच्छेदः), or **restriction** (अवधारणम्).

The philosopher Dharmakīrti formulated two senses of एव:

1. अन्ययोगव्यवच्छेदः “the exclusion of a connection [between whatever is predicated of the subject under discussion and a contextually-determined set of other possible subjects]”
 - *pārtha ēva dhanurdharaḥ* “Arjuna *alone* is an archer” → “It is not the case that anyone besides Arjuna is an archer”
2. अयोगव्यवच्छेदः “the exclusion of a lack of connection” [between the subject under discussion and what is predicated of it]:

- *caitrō dhanurdhara ēva* “Caitra is indeed an archer” → “It is not the case that Caitra does not have the quality of being an archer”
- *nīlam sarōjam bhavaty ēva* “The lotus is *surely* blue” → “It is not the case that the lotus is not blue” (actually considered to be a case of अत्यन्तायोगव्यवच्छेदः “exclusion of an absolute lack of connection,” which I follow Jonardan Ganeri in assuming to be subsumed under the general case of अयोगव्यवच्छेदः at least regarding its logical form).

Insofar as it expresses the *exclusion* of either a connection between something and a set of other things, or the lack of a connection between something and another thing, the particle एव depends on context: specifically, the connection, or lack thereof, must either be supplied or presumed from the discursive context:

1. In the sentence *pārtha ēva dhanurdharaḥ*, we know from context that what is excluded by *ēva* is the connection between being an archer and *the other four Pāṇḍava brothers*, not all other things in the universe.
2. The sentence *caitrō dhanurdhara ēva* would only be produced against the background of a doubt about whether Caitra is an archer or not. The lack of a connection between Caitra and being an archer is thus discursively salient, and the particle एव excludes this lack of connection.

NOTE: For further details on the properties of एव, see J. Ganeri, “Dharmakīrti’s Semantics for the Particle *eva*,” pp. 101–115 in Shoryu Katsura (ed.), *Dharmakīrti’s Thought and Its Impact on Indian and Tibetan Philosophy*. Vienna: Austrian Academy of Sciences, 1999.

A few further examples:

- *bhōgā na bhuktā vāyam ēva bhuktāḥ* (*Vairāgyaśatakam*) “Pleasures were not consumed [by us]; rather, it is we who have consumed.”

- What is excluded by एव is the connection between “being consumed” and anything other than “us” (*vayam*).

एव is often used, in the अन्ययोगव्यवच्छेदः sense above, in *identifications*:

- *sa ēva rāmaḥ* “he is that very Rāma”
- *yad ēva śrutam tad ēva paśyāmi* “I now see the very thing that I had heard about”
- *navavadbū makaranda ēva* “The newly-married bride was none other than Makaranda”

एव is also used, in the अयोगव्यवच्छेदः sense, in affirming something when a doubt about it is either raised or implied. Here it functions as an affirmative particle, and can be seen as giving emphasis to something, but it is important to remember that affirmation and emphasis are *derived* from the more basic sense of exclusion, in this case against the background of an implicit or explicit doubt or negation.

- *satyam ēva* “That is indeed true” (although one might have presumed that it was not)
- *ibaiṣa rājā* “The king is right here” (although one might have presumed that he was not)

With past participles, एव often has the अयोगव्यवच्छेदः sense, i.e., that it is not the case that the action has not taken place. Hence when it follows a past participle, it can very often be translated as “already”:

- *tārūyam gataṃ ēva* (*Vairāgyasatakam* 46): “my youth has already gone away.”

§29.4. च

This is a **postpositive** and **enclitic** particle, connected with both **phrases** and **clauses**, which has the force of **coordination**. च coordinates two or more elements, similar in

function to the English word “and.” As an enclitic particle, however, च must follow its host.

NOTE: च derives, like Latin *que* and Greek $\tau\epsilon$, from Indo-European **k₂e*, and corresponds to its cognates in both form and function.

च may follow *every* element that is coordinated, or it may only follow the *last* such element. Hence X-*ca* Y-*ca*, and X Y-*ca*, are both acceptable usages.

Here are some examples of च as a **phrasal** particle, where it coordinates two or more noun phrases, or adjective phrases, or adverbial phrases:

- *prītā ca bhītā ca babbhūva dēvi* “The queen was both pleased and frightened” (*Buddhacaritam* 1.29)
- *taṁ ... snēhēna bhāvēna ca ... samvardhayām ātmajavad babbhūva* “They raised him like a son, with love and affection.” (*Buddhacaritam* 2.19)
- *striyam tasyās ca cēṣṁ paśyāmi* “I see a woman and her servant”

§29.5. तच्च

This is a **postpositive** particle, connected with **clauses**, which signals that the clause will be contrasted with another, subsequent clause. It therefore is similar in function to English “on the one hand” and Greek $\mu\acute{\epsilon}\nu$.

NOTE: The particle तच्च is identical with the neuter nominative-accusative singular of the adjectival stem *tāv-ant-*; carefully distinguish between its use as an adjective and as a particular.

§29.6. च्च

This is a **postpositive** particle, connected with **clauses**, which has the force of **contrast**. As a clausal particle, it almost always occurs in the second (or “Wackernagel’s”) position.

तु is often added onto the words अपि, परम् and किम् to form non-enclitic markers of contrast, similar to the English word “but.”

- *śṛṇōmi kiṃtu na draṣṭuṃ śaknōmi* “I hear it, but I’m not able to see it.”

§29.7. न

This is a **prepositive** particle, connected with both **phrases** and **clauses**, which **negates** that with which it is construed.

§29.8. पुनर्

As a particle, this word is **postpositive**, and combines with **clauses**. It is the counterpart to तावत्, and hence introduces a new idea—usually in contrast to the clause modified by तावत्—and can often be translated as “on the other hand.”

NOTE: Distinguish the use of पुनर् as a particle (वाक्यालङ्कारः) from the use of पुनर् as an adverb (क्रियाविशेषणम्). In the latter case it means “again” or “repeatedly.”

§29.9. मा

This is a **prepositive** particle, connected with **clauses**, which **negates** the verbal predicate with which it is connected. In contrast to न, मा is used primarily to negate verbs in the imperative (लृट्) and in the injunctive, an augmentless form of the aorist.

- मा भैषी: “Don’t be afraid”
- मा भूत् “May it not happen” ☒ “God forbid”

§29.10. वा

This is a **postpositive** and **enclitic** particle, connected with both **phrases** and **clauses**, which has the force of **disjunction**. It corresponds closely to the English word “or,” with

the difference that, like च, वा is an enclitic particle and must come *after* the element it coordinates, or more precisely, after the first accented member of the coordinated phrase or clause.

NOTE: वा is cognate with Latin *ue*, but in my reading, it can be used for both inclusive and exclusive disjunction, in contrast to what is commonly said about Latin *ue* (and *uel*). The exclusive sense probably predominates, although both senses will be exemplified below.

वा, exactly like च may follow *every* element that is coordinated, or it may only follow the *last* such element. Hence *X-va Y-va*, and *X Y-va*, are both acceptable usages.

Here are some examples of वा as a **phrasal** particle, where it coordinates two or more noun phrases, or adjective phrases, or adverbial phrases:

- *mṛtyur vā pāṇḍityam vā* “Either death or scholarship.”
 - This is clearly an exclusive use of वा.
- *trayaḥ puruṣān paśyāmi, caturō vā* “I see three or four people”
 - Here वा represents inclusive disjunction.

§29.II. स्म

This is a **postpositive** and **enclitic** particle, connected with **clauses**, that is most commonly use to give a verbal form that would otherwise refer to the present tense (e.g., a present-tense verb or participle) a reference to past time. When used in this way, it regularly follows the verb that it “converts,” effectively, to a past-tense form.

- *tataḥ praṇētā vadati sma tasmai* “Then his leader said to him” (*Buddhacarita* 3.59)

§29.12. हे

This is a **vocative** particle, generally used before a vocative noun, to get the listener's or reader's attention. It is relatively neutral in terms of politeness.

§29.13. रे

This is a **vocative** particle. It has a somewhat *impolite* or *casual* tone.

§30. Adpositions (कर्मप्रवचनीयाः)

“Adposition” is what I will call an indeclinable word that *takes a nominal complement* in a specified case. These words, which are called कर्मप्रवचनीयाः in Sanskrit, are similar to *prepositions* in European languages (like *to, for, by means of*, etc.) and *postpositions* in Hindi, Gujarati, etc. (e.g., *mēm, kē liyē*, etc.). They are called adpositions because in Sanskrit they can occur either before or after the nominal phrase that they govern.

In terms of their form and meaning, the adpositions are largely identical to the preverbs. That is to say, the same indeclinable word can be used as a preverb (e.g., *prāti-varatāḥ*) and as an adposition (e.g., *grhām prāti*). The entire phrase (AP or “adpositional phrase”) will usually have an adverbial meaning within the clause in which it occurs.

§30.1. अलम्

“**enough**”. Takes a complement in the **instrumental** case (तृतीया विभक्तिः). Expresses the sense of “enough.” Unlike most other कर्मप्रवचनीयाः, the phrase governed by अलम् it is usually the predicate in a sentence.

- अलम् अतिविस्तरेण “Enough of this going on and on” = “I have gone on long enough”
- अलं खेदेन “We’ve had suffering enough”

NOTE: Carefully distinguish the use of अलम् as a कर्मप्रवचनीयः from its use with an infinitive to mean “capable of.”

§30.2. आ

“**up to, as far as, since**”. Takes a complement in the **ablative** case (पञ्चमी विभक्तिः), signifying an inclusive limit (अभिविधिः) or an exclusive limit (मर्यादा), according to *Aṣṭādhyāyī* 2.1.13. This word generally comes *before* its complement.

- आ जन्मनः “since birth”

§30.3. प्रति

“**towards**”. Generally takes a complement in the **accusative** case (द्वितीया विभक्तिः) and expresses the ideas of (1) motion towards something (“towards *x*”), (2) reference or respect (“as far as *x* is concerned,” “with reference to *x*”).

- गत्वैकं सशुचा गृहं प्रति पदं “Having, in her suffering, taken a single step in the direction of her house” (*Subhāṣitaratnakōśā*).
- सर्वदेवनमस्कारः केशवं प्रति गच्छति “Reverence done to all of the gods makes its way to Kēśava” (*Mahāsubhāṣitasāṅgraha*).

NOTE: Distinguish the use of प्रति as a कर्मप्रवचनीयः from its use as a preverb (उपसर्गः).

§30.4. सह

“**with**”. Takes a complement in the **instrumental** case (तृतीया विभक्तिः). Expresses accompaniment, or an action that is done with another person.

- *rāmō lakṣmaṇēna saha vanam gacchati* “Rāma goes to the forest *with Lakṣmaṇa*.”
- *sarasō mahiṣaiḥ saha āgacchanti* “They are coming out of the lake *with the buffalos*.”

Chapter 5

Derivational Suffixes

§3I. Derivation

Derivation refers to the process of forming words on the basis of other words. This chapter will only treat of *nominal* derivation, that is, the process of forming nominals; the formation of verbs, including denominal verbs (those formed from an existing nominal base) and deverbal verbs (those formed from an existing verbal base), is treated in the chapter on verbal morphology.

Derivation in Sanskrit is straightforward. The process begins with a *base* (अङ्गम्) to which is added an *suffix* (प्रत्ययः). The affix will sometimes induce additional changes in the base, either in terms of vowel gradation or accent. Pāṇini's names for these affixes contain diacritics (अनुबन्धः) that represent the gradational and accentual properties of the resulting nominal form.

In a number of cases, the suffix is a *null* suffix: nothing is actually added to the base, although the base might be modified by the suffix in some way, but as a result of the addition of such a suffix, the base becomes a declinable nominal form.

§32. Primary derivational suffixes (कृत्)

Primary derivatives are those that are formed directly from verbal roots (धातुः). The suffixes that are added to verbal roots are called कृत्, and hence primary derivatives are often called कृदन्तम् “ending in a *kṛt* suffix.”

In most cases, primary nominal derivatives have a *meaning* that is composed of (a) the meaning of the verbal root, (b) the particular thematic role that the suffix is associated with, representing a participant in the action of the verb, and (c) some additional component of meaning, related to time, aspect, and so on.

For adjectives formed from a verbal *stem* (participles), see the section on verbs. The following sections only discuss adjectives formed directed from a verbal *root*. They can also be called “participles,” because they are adjectival forms derived from verbal roots that often function as verbs in a sentence.

§33. Past verbal adjectives (निष्ठा)

Pāṇini calls two sets of closely-related forms, those formed with the suffix क्तः and those formed with the suffix क्तवत्, by the common designation निष्ठा. These are both generally **past** verbal adjectives, in that they refer to an action that occurred prior to the time in which the statement is made. Hence they can be called “past participles” (भूते कृदन्तानि).

The difference between them is the thematic roles (कारकाणि, see below) to which they refer. क्तः, which is often called the “past passive participle,” can refer to one the following three:

1. the *patient* (कर्म) of a transitive (सकर्मकः) verb;
2. the *agent* (कर्तृ) of an intransitive (अकर्मकः) verb (and sometimes of transitive verbs as well); and

3. the *verbal action* itself (भावः).

By contrast, क्वत्तु, which is often called the “past active participle,” can only refer to:

- i. the *agent* (कर्तृ), either of a transitive or intransitive verb.

Thus it is more accurate to think of कः as an *absolutive* form, and क्वत्तु as a standard *active* form, of the past verbal adjective.

NOTE: Many languages have *nominative-accusative* patterns of alignment, according to which the agent of a transitive verb, or an intransitive verb, takes one form (the *nominative*), and the patient of a transitive verb takes another form (the *accusative*). Some languages, however, have *ergative-absolutive* patterns of alignment, where the agent of an intransitive verb and the patient of a transitive verb take the same form (the *absolutive*) while the agent of a transitive verb takes another (the *ergative*).

Sanskrit, like many of the modern Indic languages such as Hindi, exhibits a split between the two patterns of alignment. Whenever finite verb forms are used, the alignment pattern is *nominative-accusative*. Whenever non-finite verb forms, such as participles, are used, the alignment pattern is *ergative-absolutive*. This more or less maps on to the distinction between past and non-past, since non-finite verb forms are very commonly used with reference to past time, and finite verb forms, by contrast, are typically used to refer to the present, or to hypothetical situations.

§33.1. The past passive participle (-त्त-)

The form that Pāṇini calls कः, that is, -*tá-*, is the primary form of what is often called the “past passive participle” or “p.p.p.” (Everything that is said in this section will apply equally to the form in -*ná-*, discussed below, which is a substitute for कः after certain verbs.) This form is called the “past passive participle” for the following reasons:

- it is generally used in reference to the *past* (भूते);

- it is commonly used in reference to the patient of a transitive verb (कर्मणि प्रयोगः, see below), which is similar to *passive* constructions in English; and
- it is an adjectival form of a verb (a *participle*).

NOTE: The initial *K* of क्तः is an *anubandhabh*, that is, a marker that is not part of the form itself, but conveys information about its accentual and gradational properties. The *K* marker indicates that the form to which it is added does not undergo *gunābh*, and therefore remains in the zero grade (or in some cases undergoes changes in order to reach the zero grade).

However, it can also be used of the *agent* of an intransitive verb. Pāṇini outlines the use of क्तः as follows:

- It can refer to the *patient* (कर्म) of a verb (i.e., of a transitive verb, since only such verbs have patients in the first place), according to *Aṣṭādhyāyī* 3.4.70. This is the most common use of the suffix. Some examples:
 - √दा + त → दत्त- “given”
 - √कृ + त → कृत- “done”
 - √दृश् + त → दृष्ट- “seen”
 - √क्री + त → क्रीत- “bought”
- It can refer to the *verbal action* (भावः) in the case of intransitive verbs, also according to according to *Aṣṭādhyāyī* 3.4.70. Some examples:
 - √आस् + त → आसित- “sitting down”
 - √शी + त → शयित- “lying down”
- It can refer to the *agent* (कर्तृ) in the case of intransitive verbs, according to *Aṣṭādhyāyī* 3.4.72. But in addition to intransitive verbs, Pāṇini lists a number of other verbs, which are either treated as transitive in the *Aṣṭādhyāyī* or could possibly be transitive with certain verbal prefixes (उपसर्गाः), in order to ensure that क्तः can be used to refer to

the agent in the case of those verbs as well. The complete list is: verbs of movement (गत्यर्थाः), √श्लिष् “embrace,” √शी “lie down,” √स्था “stand,” √आस् “sit,” √वस् “dwell,” √जन् “be born,” √रुह् “mount,” and √वृक् “grow old.” Some examples:

- रामो वनं गतः ।
“Rāma went to the forest” (√गम्)
- सीता शयिता ।
“Sītā laid down” (√शीङ्)
- उपासितो गुरुं देवदत्तः ।
“Dēvadatta served his teacher (√आस्)
- उदयगिरिम् अधिरूढः सूर्यः ।
“The sun ascended the eastern mountain” (√रुह्)
- It can be used to refer to the *beginning* of an action, with reference to either the agent or the patient, according to *Aṣṭādhyāyī* 3.4.71.
 - प्रभुक्त ओदनं देवदत्तः ।
“Devadatta has started to eat his rice.” (√भुञ्ज्)
 - प्रभुक्तम् ओदनं देवदत्तेन ।
id.

NOTE: See Speijer §360.

It is also worth noting that क्तः generally refers to an action in the past, but in several cases, it is more salient that the *consequences* of that action have continued into the present, and hence the form refers to the present. For example:

- अहम् इह स्थितः ।
“I *have stood* here” → “I am (standing) here” (√स्था)
cf. Greek statives like ἔστηκα “I am standing”

- सो मृतः ।
“He *has died*” → “He is dead” (√मृ)
- सा शक्ता ।
“She is capable” (√शक्)

In general, however, the form in *Ktāh* only refers the action to the past in the vaguest terms. When used **predicatively**, it can often be translated by a range of English past tenses depending on the context, for example:

- ओदनं भुक्तं देवदत्तेन ।
translating it as an *active* sentence in English:

- “Dēvadatta ate the rice.”
- “Dēvadatta has eaten the rice.”
- “Dēvadatta had eaten the rice.”

and as a *passive* sentence in English:

- “The rice was eaten by Dēvadatta.”
- “The rice has been eaten by Dēvadatta.”
- “The rice had been eaten by Dēvadatta.”

NOTE: See Speijer §361.

Regarding the **formation** of the verbal adjective in *-tā-*, we can say that:

- i. the suffix is added *directly* to the verbal root;
 - a) some roots take the augment *-i* between the root and the affix, which in certain cases is lengthened to *-ī*; see the section on *sēṭ* and *aniṭ* roots for more;

2. the root stands in its *weakest* or *zero-grade* form (see the section on vowel gradation above); that is to say:
- a) there is no *gunāḥ* or *vṛddhiḥ* of the root vowel;
 - b) the root undergoes *samprasāraṇam* if it is subject to it;
 - c) for certain roots ending in *-am* or *-an*, the stem to which *-tā-* is added ends in *-a* (since *a*, from an earlier vocalic **m̥* or **n̥*, is the “zero grade” of the sequence *am*);
 - d) for other roots ending in *-am* or *-an*, the stem to which *-tā-* is added takes the form *-ām* or *-ān* (these are roots which historically ended in a nasal followed by a laryngeal);
 - i. an exception is $\sqrt{\text{जन्}}$ “be born,” which takes the form ज- before the suffix;
 - e) if the root is taught as ending in a long vowel, that probably represents a laryngeal-final root, and such roots generally end in *-ī* or *-i* in the weakest grade (representing **-H*).

In the feminine, the affix *-tā-* simply has a long vowel, thus *-tā-* (formed with the feminine suffix टप्).

Several examples of क्तः affixed to roots with different phonological shapes follow.

- क्तः after a root ending in a vowel:
 - $\sqrt{\text{कृ}} \rightarrow \text{कृतः}$ “done”
 - $\sqrt{\text{नी}} \rightarrow \text{नीतः}$ “led”
 - $\sqrt{\text{श्रु}} \rightarrow \text{श्रुतः}$ “heard”
 - $\sqrt{\text{भू}} \rightarrow \text{भूतः}$ “become”
- क्तः after a root ending in a consonant:

- $\sqrt{\text{त्यञ्}} \rightarrow \text{त्यक्तः}$ “abandoned”
- $\sqrt{\text{मुञ्}} \rightarrow \text{मुक्तः}$ “abandoned”
- $\sqrt{\text{वृध्}} \rightarrow \text{वृद्धः}$ “grown”
- $\sqrt{\text{नश्}} \rightarrow \text{नष्टः}$ “destroyed”

- क्तः after a root subject to *samprasāraṇa*, including roots ending in *-am*:
 - $\sqrt{\text{प्रच्छ्}} \rightarrow \text{पृष्टः}$ “asked”
 - $\sqrt{\text{व्यध्}} \rightarrow \text{विद्धः}$ “pierced”
 - $\sqrt{\text{स्वप्}} \rightarrow \text{सुप्तः}$ “slept”
 - $\sqrt{\text{गम्}} \rightarrow \text{गतः}$ “gone”
 - $\sqrt{\text{यञ्}} \rightarrow \text{इष्टः}$ “sacrificed”

- क्तः after roots that historically ended in a **-nH* or **-mH*:
 - $\sqrt{\text{शम्}} \rightarrow \text{शान्तः}$ “quieted”
 - $\sqrt{\text{कम्}} \rightarrow \text{कान्तः}$ “beloved”
 - $\sqrt{\text{ध्वन्}} \rightarrow \text{ध्वान्तः}$ “sounded”

- क्तः after roots that historically ended in a laryngeal *without* a preceding nasal:
 - $\sqrt{\text{गै}} \rightarrow \text{गीतः}$ “sung”
 - $\sqrt{\text{पा}} \rightarrow \text{पीतः}$ “drunk”
 - $\sqrt{\text{स्था}} \rightarrow \text{स्थितः}$ “stood”
 - $\sqrt{\text{धा}} \rightarrow \text{हितः}$ “placed”

- क्तः after *seT* roots:
 - $\sqrt{\text{कम्प्}} \rightarrow \text{कम्पितः}$ “shaken”
 - $\sqrt{\text{पत्}} \rightarrow \text{पतितः}$ “fallen”

- √ग्रह् → गृहीतः “taken”
- √प्रथ् → प्रथितः “spread”

Finally, mention must be made of the **substitution** of *-tá-* by *-ná-* after certain roots. Pāṇini teaches this substitution in the following cases (8.2.42–44):

- roots ending in the consonant *-d*:
 - √भिद् + क्त [+ अम्] → भिन्नम् “[it was] broken”
 - √छिद् + क्त [+ अम्] → छिन्नम् “[it was] cut off”
- roots that had a semivowel (*l*, *r*, or *v*) followed by a laryngeal in Indo-European, which in synchronic terms includes:
 - roots ending in *-lā* (**-lH*, where *C* stands for any consonant), e.g.:
 - √म्ल + क्त [+ अम्] → म्लानम् “[it was] withered”
 - √ग्ल + क्त [+ अम्] → ग्लानम् “[it was] tired out”
 - roots ending in *īr* or *ūr* (Indo-European **-rH*); note that this will always retroflex the following *n*), e.g.:
 - √ब्रू + क्त [+ अम्] → स्तीर्णम् “[it was] strewn”
 - √पू + क्त [+ अम्] → पूर्णम् “[it was] filled up”
 - a laundry-list of other verbs, most of which can be reconstructed as ending in **-uH* or **-iH* in the zero-grade in Indo-European:
 - √लू + क्त [+ अम्] → लूनम् “[it was] cut” (Indo-European **luH-nóm*)
 - √धू + क्त [+ अम्] → धूनम् “[it was] shaken” (Indo-European **ḍhuH-nóm*)
 - √ली + क्त [+ अम्] → लीनम् “[it was] dissolved” (Indo-European **liH-nóm*)

a few other roots, which are generally taught as ending in *-j*, and which change this *-j* to *-g* before the suffix *-ná-* (these roots are taught in the *Dhātupāṭha* with the prefix *ō* to indicate the substitution of *ta* by *na*):

- √विज् + क्त [+ सु] → विज्गः “[he was] shaken”
- √लग् + क्त [+ अम्] → लग्गम् “[it was] stuck”
- √रुज् + क्त [+ अम्] → रुग्गम् “[it was] destroyed”

§33.2. The past active participle (क्तवतु)

Another verbal adjective can be formed by adding the suffix that Pāṇini calls क्तवतु, i.e., *-tāvāt-*, which can be considered a combination of *-tā-* (the past verbal adjective) and *-vat-* (the possessive suffix). It is declined exactly like stems in *-vat*, that is, with the stem *-vant-* in the strong cases and *-vat-* in the weak cases, and with the stem *-vati-* (क्तवतु + डीप्) in the feminine.

Like क्तः, क्तवतु refers to the past. Unlike क्तः, it always agrees with the *agent* (कर्तृ) of the verb, rather than with the *patient* (कर्म). Although, as adjectives, they can be used to qualify a noun can be used in any gender, number, and case, they are most commonly used as **predicate adjectives**. Since intransitive verbs already reflect the agent in their *tā-*participle, the *tāvāt-*participle is mostly used to refer to the agent of transitive verbs.

- रामो रावणं हतवान् ।
“Rāma has killed Rāvaṇa.”
- सीता रामं दृष्टवती ।
“Sītā has seen Rāma.”
- पाण्डवा गतवन्तः ।
“The Pāṇḍavas have gone.”
- कुम्भकारः कुम्भं कृतवान् ।
“The potter has made a pot.”

§34. Future verbal adjectives

Pāṇini calls these formations कृत्याः (*Aṣṭādhyāyī* 3.1.95), after one of the main types discussed below. Like the verbal adjectives in क्त, they generally have an **absolutive** alignment pattern: they refer to either the agent of an intransitive verb or the patient of a transitive verb. Although often called the “future” verbal adjective, or “future” participle, these suffixes form adjectives that often have a potential force, or an optative, permissive, or imperative force.

As to their **formation**, all of these suffixes added directly onto the root, with differences in the gradation of the root.

Regarding their **syntax**, it should be noted that, in contrast to the past absolutive participle क्त, the agent (कर्तृ) of कृत्याः is often expressed in the **genitive** (कृत्याः) in addition to the **instrumental** (कृत्याः):

- वन्द्यैः पुंसां रघुपतिपदैर् अङ्कितं मेखलासु ।

“marked on its slopes with the footprints of Rāma, *which are to be worshiped by men.*”
(*Mēghadūtam* 12)

- मयावश्यं देशान्तरं गन्तव्यं ।

“I absolutely need to go to another country” (Pañcatantram 167 (from Speijer))

One important point to be noted in this connection is the कृत्यः of √भू, and especially the form भवितव्यम्. This is very often used in the भावे प्रयोगः, or impersonal construction, which means that the agent of the verbal action will be put into the instrumental rather than the nominative:

- अस्मिन् लतामण्डपे सनिहितया तया भवितव्यम् ।

“she has to be close to this bower” (Śākuntalam 3 (from Speijer))

NOTE: See Speijer §357.

§34.1. तव्य and तव्यत्

Before these suffixes (*Aṣṭādhyāyī* 3.1.96), the root stands in the *full* grade. *Sēṭ* roots take the augment *iṭ* in this form.

The difference between these two suffixes is simply that the accent is on the first syllable of the suffix in the case of तव्य, whereas in the case of तव्यत्, the *anubandha* *T* causes the final syllable to have a *svarita* accent. Historically तव्यत् derived from a suffix *-*tavīa*.

- $\sqrt{kr} + tavyaT [+ am] \rightarrow$ कर्तव्यम् “[it is] to be done”
- $\sqrt{sthā} + tavya [+ am] \rightarrow$ स्तातव्यम् “[one must] stand”
- $\sqrt{ji} + tavya [+ am] \rightarrow$ जेतव्यम् “[it is] to be conquered”
- $bhū + tavya [+ am] \rightarrow$ भवितव्यम् “[it] must be”
- $man + tavya [+ sU] \rightarrow$ मन्तव्यः “[it] is to be thought about”

§34.2. यत् and ण्यत्

These forms both involve a suffix *-ya-*. The difference is that यत् induces full grade of the root syllable, whereas ण्यत् induces a gradational pattern that we have been calling *Ṇ-ṽddhi*, where the root takes the lengthened grade or *ṽddhiḥ* if it ends in a *vowel*, and the full grade or *guṇāḥ* if it ends in a *consonant*.

The suffix यत् is added:

- after most roots ending in a vowel (*Aṣṭādhyāyī* 3.1.97) apart from those in *r*, e.g., $\sqrt{दा}$, $\sqrt{शु}$;
- after most roots ending in a labial sound preceded by *a*, e.g., $\sqrt{तप्}$, $\sqrt{लम्}$, as well as a few other roots with a CVC pattern, such as $\sqrt{शक्}$, $\sqrt{सह}$ and (when not preceded by

a preverb) $\sqrt{\text{गद्}}$, $\sqrt{\text{चर्}}$, etc. (this specification is necessary because most roots ending in a consonant take the suffix ण्यत्);

ण्यत् is only taught for roots that end in the vowel r or a consonant.

Note that both यत् and ण्यत् are affixes beginning with the phoneme y , and they therefore fall under the scope of the special *sandhi* rule *Aṣṭādhyāyī* 6.4.79: before such a suffix, the *guṇāḥ* and *vṛddhiḥ* vowels are replaced by their corresponding vowel + semivowel segments ($\bar{e} \rightarrow ay$, $\bar{o} \rightarrow av$, $ai \rightarrow \bar{a}y$, $au \rightarrow \bar{a}v$).

- $\sqrt{dā} + yaT [+ am] \rightarrow$ देयम् “[it is] to be given” (for the substitution of the root-final \bar{a} with \bar{e} , see *Aṣṭādhyāyī* 6.4.65).
- $\sqrt{śru} + yaT [+ am] \rightarrow$ श्रव्यम् “[it is] to be heard”
- $\sqrt{kṛ} + NyāT [+ am] \rightarrow$ कार्यम् “[it is] to be done”

§34.3. क्यप्

The root is in its “weakest” grade (see vowel gradation above). In addition, if the root by itself does not constitute a heavy syllable (i.e., if it ends in a short vowel), then the augment $-t-$ is inserted between the root and the affix.

- $\sqrt{kṛ} + KyaP [+ am] \rightarrow$ कृत्यम् “[what is] to be done”
- $\sqrt{stu} + KyaP [+ sU] \rightarrow$ स्तुत्यः “[one who is] to be praised”
- $\sqrt{han} + KyaP [+ sU] \rightarrow$ हत्यः “[one who is] to be killed”
- $\sqrt{sās} + KyaP [+ sU] \rightarrow$ शिरयः “[one who is] to be taught”

§34.4. अनीयर्

The root takes the full grade before this suffix, which is accented on the penultimate syllable (as indicated by the diacritic R):

- $\sqrt{kr} + aniyaR [+ am] \rightarrow$ करणीयम् “[it is] to be done”
- $\sqrt{bhū} + aniyaR [+ am] \rightarrow$ भवनीयम् “[it is] to be”
- $\sqrt{vac} + aniyaR [+ am] \rightarrow$ वचनीयम् “[it is] to be spoken of”

NOTE: Note that while अनीयर् usually requires *guṇa* of the root vowel, just as in the case of the *guṇa* of a root vowel before the present tense forming suffix षप्, *guṇa* does not take place if the root ends in (1) a long vowel followed by a consonant, or (2) two consonants.

§35. Agent nouns

§35.1. णिनि

The root takes “*N-vṛddhi*” (see above). The form of the suffix is *-in-*. There is a small set of roots to which this suffix can be added, on its own, to form agent nouns:

- $\sqrt{grh} \rightarrow$ ग्राही “grasper”

More commonly, this suffix is attached to a verbal root at the end of an *upapada* compound (see below) and has a habitual meaning (ताच्छील्ये “in the sense of having that as one’s habitual activity”). For example:

- $\sqrt{yaj} \rightarrow$ दर्शपूर्णमासयाजी “one who performs the darśapūrṇamāsa sacrifice”
- $\sqrt{kr} \rightarrow$ उष्ट्रक्रोशी “given to making noises like a camel”

§35.2. ण्वुल्

The root takes “*N-vṛddhi*” (see the section on vowel gradation above).

- $\sqrt{kr} \rightarrow$ कारकः “doer”
- $\sqrt{h} \rightarrow$ हारकः “taker”

§35.3. ल्यु

Taught in *Aṣṭādhyāyī* 3.1.134. The suffix -अन्-, without any change in the stem. The closely-related suffix ल्युट् (see below) is identical in form, but has the sense of an instrument, or the verbal action, rather than an agent.

- √नन्द् → नन्दनः “that which makes rejoice, a son”
- √साध् → साधनः “that which makes accomplished, a means”

§36. Action nouns

Action nouns are nouns which refer to the verbal action (भावः) rather than to one or another of the participants in the action.

§36.1. क्तिन्

This is a suffix *-ti-* which is added to a root in the zero grade (as required by the *anubandha K*). It forms feminine verbal nouns. Because of the *anubandha N*, these derivatives are accented on the initial syllable. See *Aṣṭādhyāyī* 3.3.94 and following.

- √मन् + क्तिन् (+ सु) → मतिः “thought, intelligence”
- √आप् + क्तिन् (+ सु) → आप्तिः “attainment”
- √साध् + क्तिन् (+ सु) → सिद्धिः “accomplishment”
- √क्रम् + क्तिन् (+ सु) → क्रान्तिः “overcoming”

§36.2. ल्युट्

The suffix *-ana-*, which is added to a root in the full grade, forms neuter verbal nouns that are accented on the syllable preceding the suffix. The same suffix is also used to form nouns expressive of an instrument (करणम्) or location (अधिकरणम्) of a verbal action.

- $\sqrt{\text{गम्}} + \text{ल्युट्} (+ \text{सु}) \rightarrow \text{गमनम्}$ “going”
- $\sqrt{\text{कृ}} + \text{ल्युट्} (+ \text{सु}) \rightarrow \text{करणम्}$ “doing”
- $\sqrt{\text{शास्}} + \text{ल्युट्} (+ \text{सु}) \rightarrow \text{शासनम्}$ “teaching”
- $\sqrt{\text{पठ्}} + \text{ल्युट्} (+ \text{सु}) \rightarrow \text{पठनम्}$ “reciting”
- $\text{अधि}\sqrt{\text{इ}} + \text{ल्युट्} (+ \text{सु}) \rightarrow \text{अध्ययनम्}$ “studying”

§36.3. घञ्

The suffix *-a-*, which is added to a root in the full grade, forms masculine verbal nouns that are accented on the root syllables. The marker *GH* means that a root-final palatal is converted into the corresponding velar before the suffix (*Aṣṭādhyāyī* 7.3.52). The root goes into the full grade or *gunāḥ*, unless it ends in a vowel, or has the vowel *a* followed by a single consonant, in which case it takes *vṛddhiḥ* (see *N-vṛddhiḥ*).

- $\sqrt{\text{भू}} + \text{घञ्} (+ \text{सु}) \rightarrow \text{भावः}$ “going”
- $\text{वि}\sqrt{\text{शिष्}} + \text{घञ्} (+ \text{सु}) \rightarrow \text{विशेषः}$ “difference”
- $\sqrt{\text{पठ्}} + \text{घञ्} (+ \text{सु}) \rightarrow \text{पाठः}$ “reciting”
- $\sqrt{\text{युञ्ज्}} + \text{घञ्} (+ \text{सु}) \rightarrow \text{योगः}$ “joining”
- $\sqrt{\text{पच}} + \text{घञ्} (+ \text{सु}) \rightarrow \text{पाकः}$ “cooking”
- $\sqrt{\text{रुञ्ज्}} + \text{घञ्} (+ \text{सु}) \rightarrow \text{रोगः}$ “sickness”

§37. Secondary derivational suffixes (तद्धिताः)

A “secondary derivational suffix,” or *taddhitā* suffix, is one that is added onto an existing nominal stem (प्रातिपदिकम्) in order to form a new nominal stem. The suffix, and thus the resulting form, generally expresses a relation to the meaning of the stem to which it is added.

We can distinguish the following types of *taddhitá* suffixes:

- feminine stem forming suffixes;
- abstract nouns; and
- possessive adjectives.

§38. Feminine stem forming suffixes (स्त्रीप्रत्ययाः)

Gender in Sanskrit is partly inflectional (expressed through endings) and partly derivational (expressed through differences in the stem to which endings are added). One example of the *inflectional* expression of gender is the use of special endings when a word is used in the feminine: for instance, the adjective शुचिः, meaning “pure,” can qualify a noun in the masculine or feminine gender, but the genitive form शुच्याः is only used to qualify a noun in the feminine gender (whereas शुचेः can be used to qualify either a masculine or feminine noun).

Gender being expressed *derivationally* are found when forms based on one stem are used in the masculine/neuter, and forms based on another stem are used in the feminine. To express this paradigmatic relationship, Sanskrit grammarians say that the feminine stem is formed by adding a *feminine stem forming suffix* (स्त्रीप्रत्ययः) onto the masculine/neuter stem (*Aṣṭādhyāyī* 4.1.3). (We could of course say the reverse, namely, that the masculine/neuter stem is formed by adding a suffix onto the feminine stem, but it is generally more convenient to proceed in the other direction.)

The primary feminine stem forming suffixes are *ā* and *ī*, which Pāṇini teaches as the following:

- आप्, a general term for the suffix *ā*, which actually includes three suffixes:

- टाप् (*Aṣṭādhyāyī* 4.1.4). The general suffix *ā*, used when the corresponding masculine/neuter stem ends in *a*.
- डाप् (*Aṣṭādhyāyī* 4.1.13). The suffix *ā*, which replaces the final *an* of a masculine/neuter stem.
- चाप् (*Aṣṭādhyāyī* 4.1.75). The suffix *ā*, but with a final *udāttaḥ* accent. Used in patronymics and metronymics, e.g., कौसल्या.
- डीष् (*Aṣṭādhyāyī* 4.1.5). The suffix *ī*, appended to a stem in *r̥* or *n*, as well as most stems ending in *t* (technically prescribed when the corresponding masculine/neuter stem is formed with a suffix that has the *anubandhas* *u*, *r̥*, or *l̥*, hence the present participle [शत्] and the possessive adjectives in *mat* and *vat* [मत्तुप्]), and to other stems in special circumstances.
 - राजन्-डीष् → राज्ञी “queen”
- डीष् (*Aṣṭādhyāyī* 4.1.25). The suffix *ī*, with a final *udāttaḥ* accent. It is used with the augment *ān* (आनुक्) to form इन्द्राणी, यवनानी, etc.
 - गौर-डीष् → गौर-ई “white”
 - सुन्दर-डीष् → सुन्दरी “beautiful”

One important rule is that words that end in *-aka-* in the masculine or neuter tend to form their feminines with *-ikā-* (*Aṣṭādhyāyī* 7.3.44):

- कारक-आप् → कारिका
- सर्वक-आप् → सर्विका

§39. Abstract nouns

An important set of suffixes form *abstract nouns* from an existing nominal stem. Such derivatives can be translated, on a first pass, as “*x*-ness,” “being *x*,” and so on. But these

nouns are very often used as predicates, especially in certain styles of Sanskrit. Hence they can often mean “the fact [that something] is x ,” or “[something’s] being x .” In such constructions, these nouns very often take an adnominal modifier—usually expressed in the genitive case—to refer to the thing that possesses “ x -ness,” or stated more simply, the thing that is said to be x .

- त्व (*Aṣṭādhyāyī* 5.1.119). The suffix -त्व-, without any change in the stem. The resulting noun is neuter.
 - नील-त्व- → नीलत्वम् “blueness,” गगनस्य नीलत्वम् “the sky’s blueness, the sky’s being blue.”
- तल (*Aṣṭādhyāyī* 5.1.119). The suffix -ता-, without any change in the stem. The resulting noun is feminine.
 - नील-ता- → नीलता “blueness,” गगनस्य नीलता “the sky’s blueness, the sky’s being blue.”
- ष्यञ् (*Aṣṭādhyāyī* 5.1.123). The suffix -य-, which causes *vṛddhiḥ* of the initial syllable of the stem. The accent is on the initial syllable (due to \bar{N}). The resulting noun is neuter. There is a list (गणः) of words to which this suffix can be added:
 - शुक्ल्य-ष्यञ्- → शौक्ल्यम् “whiteness”
 - दृढ-ष्यञ्- → दाढ्यम् “firmness”
 - कृष्ण-ष्यञ्- → काष्ण्यम् “blackness”
- अण् (*Aṣṭādhyāyī* 4.1.83). The suffix -अ-, with “ \bar{N} -*vṛddhi*” of the stem (see vowel gradation). The resulting noun is neuter.
 - गुरु-अण्- → गौरवम् “heaviness, seriousness”
 - लघु-अण्- → लाघवम् “lightness”

§40. Possessives

One important class of suffixes indicates that someone *possesses* that to which the suffix is added. Usually these suffixes refer to inalienable possession, wherein the possessed object comes to characterize the one who possesses it.

§40.1. इणि

The suffix *-in-* (feminine *-inī-*). The final vowel of the stem is dropped before this suffix.

- ज्ञान-इनि- → ज्ञानिन्- “possessed of knowledge, knowledgeable, wise”
- कुटुम्ब-इनि- → कुटुम्बिन्- “one who possesses a family, a householder”

§40.2. मतुप् and वतुप्

The suffix *-mat-* and *-vat-*. These suffixes are in *complementary distribution*: वतुप् is used whenever the base to which the suffix is added ends in the vowel *a*, and मतुप् is used elsewhere. (Note that stems in *-n* take a form that ends in *-a* before *taddhita* suffixes.) These suffixes involve vowel gradation, and examples of their declension have been given above.

The feminine to both मतुप् and वतुप् is formed by adding the feminine suffix ङीप् to the weak form of the stem, thus -मती- and -वती-.

- धन-वतुप् (+ *sU*) → धनवान् “wealthy”
- शक्ति-मतुप् (+ *sU*) → शक्तिमान् “powerful”
- आत्म-वतुप् (+ *sU*) → आत्मवान् “self-possessed”
- गो-मतुप् (+ *sU*) → गोमान् “rich in cows”

By *Aṣṭādhyāyī* 6.3.119, when the suffix मत्तुप् is used to form a name, the final vowel of the stem is lengthened:

- पद्म-वत्तुप् (+ *sU*) → पद्मावती
- अमर-वत्तुप् (+ *sU*) → अमरावती

Chapter 6

Syntax

§4I. The sentence

The sentence (वाक्यम्) is the basic unit of discourse. It has been defined by Kātyāyana as that which contains a single verb (एकतिङ् वाक्यम्, *Vārttikam* on *Aṣṭādhyāyī* 2.1.1), and by Jaimini as that which has a unitary meaning (अर्थैकत्वाद् एकं वाक्यम्, *Mīmāṃsā Sūtra* 2.1.46).

We can think of the sentence as consisting of two parts. Aristotle influentially distinguished the subject (*ὑποκείμενον*) of a proposition from its predicate (*λεγόμενον*). These components refer, in the most basic sense, to “what one is talking about” and “what one says about it,” respectively. (We should be careful to distinguish the *subject* of a proposition from the *subject* of a verb: although they often coincide, there are certain types of sentences in which they do not.)

A similar distinction was available to Indian thinkers. Mīmāṃsakas analyzed each sentence into two parts. One part, called the उद्देश्यः, referred to something that was already known, while the other part, the विधेयः, conveyed some new information about it. They can be translated loosely as “what is referred to” by the sentence in question and “what is

laid down” regarding it. These categories map closely onto what linguistics now call the TOPIC and FOCUS. For our purposes, the उद्देश्यः can be considered to be the “subject” of a sentence, and the विधेयः to be the “predicate.”

The **order** of words in a Sanskrit sentence is relatively free, since almost all of the information about the relationships between its constituent parts is expressed morphologically—that is, by the nominal and verbal suffixes. We can, however, make some broad generalizations, which pertain to particular types of sentences, discussed below.

§41.1. Nominal sentences

A *nominal sentence* is a sentence in which both the subject and the predicate are represented by *nominal* rather than *verbal* forms. This type of sentence is not possible in standard English, but it is extremely common in Sanskrit, where nominal forms—such as adjectives and participles—are frequently used as the predicate.

As in other types of sentences, the *subject* of a nominal sentence is in the nominative case (प्रथमा विभक्तिः). In Sanskrit, the *predicate* of a nominal sentence must agree with its subject in gender, number and case, and hence it will almost always appear in the nominative case as well.

Regarding the *order* of words in nominal sentences, there is a tendency in the earlier language for the predicate to precede the subject. However, both subject-predicate and predicate-subject orders are attested for all phases of the language.

- कथं संदेह एवात्र भवतः ।

“How can you have any doubt in this matter?”

- अहिंसा ... धर्म उत्तमः ।

“Non-violence is the greatest *dharmā*.”

§42. Semantic roles (कारकाणि)

On a semantic level, Indian grammarians distinguished the main action of a sentence, or क्रिया, from several different kinds of participants in the action, or कारकाणि. Morphologically, the action is usually represented by a verbal form, and the participants are usually represented by nominal forms. The participants in the action are classified into one of the following types, which we may call semantic roles (or “thematic roles”):

- कर्तृ or **agent**: That which performs the action.
- कर्म or **patient**: That to which the action is done.
- संप्रदानम् or **recipient**: That which receives or benefits from the action.
- करणम् or **instrument**: That by means of which the action is performed.
- अधिकरणम् or **location**: That in which the action is performed.
- अपादानम् or **from-which** (there is not a good English term for this): That away from which the action is performed.

These *semantic* roles map onto *morphological* cases in predictable ways. Hence the संप्रदानम् or recipient is represented by the चतुर्थी or dative, the करणम् or instrument is represented by the तृतीया or instrumental, the अधिकरणम् or location is represented by the सप्तमी or locative, and the अपादानम् is represented by the पञ्चमी or ablative.

In the case of the कर्तृ and कर्म, however, the assignment of case depends on which construction is used. See the section on agentive, patientive, and impersonal constructions for details.

§43. Case usages

This section will detail uses for the seven cases of Sanskrit (eight, including the vocative). Their formation is discussed in the chapter on nominal morphology.

§43.1. The nominative (प्रथमा विभक्तिः)

The primary use of the nominative case is the *subject* of a sentence. This includes the subject of a nominal sentence as well as the subject argument of a verb.

- रामो वनं गच्छति ।

“Rāma goes to the forest”

rāmaḥ is the subject of the verb *gacchati*.

- अहिंसा एव धर्ममार्गः ।

“It is **non-violence** that is the way of *dharma*.” (*Pañcatantraḥ*, prose after 3.104)

The nominative is also used for the predicates of nominal sentences:

- अहिंसा एव धर्ममार्गः ।

“It is non-violence that is **the way of *dharma***.” (*Pañcatantraḥ*, prose after 3.104)

The nominative is similarly used for the predicate when a verb of being or becoming is expressed:

- तदा न कश्चिद् विमुखो बभूव ।

“Nobody then was **looking the other way**” (*Aśvaghōṣa, Buddhacaritam* 2.10)

§43.2. The accusative (द्वितीया विभक्तिः)

The primary use of the accusative is the direct object of a verb. In this function it is usually mapped onto the *karma* or *patient* semantic role.

- स परं पदम् आमोति ।

“He obtains **the highest position.**”

(*Pañcatantraḥ* 1.316)

Note that verbs of motion are traditionally considered transitive and therefore take an accusative. But we may consider this usage to be an accusative of the **goal of motion** as well.

- वनं गच्छामः ।

“Let’s go **to the forest.**”

(*Pañcatantraḥ*, prose after 5.72)

Note also that several verbs are **ditransitive** (द्विकर्मकः) and therefore take two accusative objects, generally one corresponding to a direct object and one corresponding to an indirect object in English:

- सुवर्णं रजताम् गाः च न त्वां राजन् वृणोम्य् अहम् ।

“I do not ask **you** for **gold, silver, or cows, king.**”

(*Mahābhārataḥ*, Speijer §46)

Sometimes the accusative is used as a secondary predicate after a verb of making:

- एकं भूमिपतिः करोति सचिवं राज्ये प्रमाणम् ।

“The king makes one of his ministers **the authority** over the state.” (*Pañcatantra*, prose after 1.263)

The accusative is also used in adverbial expressions indicating an **extent** of time or space:

- एतावन्ति दिनानि त्वदीयम् आसीत् ।

“It was yours **for so many days.**”

(*Pañcatantraḥ*, from Speijer §54)

- चकर्ष ह तस्माद् देशाद् धनुषि अष्टौ ।

“He dragged him from that place **for eight bow-lengths.**”

(*Mahābhārataḥ*, from Speijer §54)

The accusative is also often used as the complement of adpositions (कर्मप्रवचनीयः):

- जानामि धर्मं प्रति निश्चयं ते ।
“I know your certainty regarding *dbarma*.” (Aśvaghōṣa, *Buddhacaritam* 9.14)
- व्यवसायं विना न कर्म फलति ।
“Deeds do not come to fruition without **application**.” (*Pañcatantraḥ*, prose after 2.132)

§43.3. The instrumental (तृतीया विभक्तिः)

The instrumental is used first of all to express an **instrument** (करणम्) by means of which the action is done.

- साम्ना एव विलयं याति विद्वेषप्रभवं तमः ।
“It is only **through conciliation** that the darkness arising from hostility disappears.” (*Pañcatantraḥ*, 1.411)

It is also used for the **agent** of the action in patient-oriented and impersonal constructions:

- सर्वे भक्षिता राक्षसेन ।
“They were all eaten **by the Rākṣasa**.” (*Pañcatantraḥ*, prose after 5.79)

The instrumental is also used in a **sociative** sense, expressing accompaniment, usually as the complement of a noun or adposition:

- मृगा मृगैः सङ्गम् अनुव्रजन्ति ।
“Deer seek after company **with deer**.” (*Pañcatantraḥ*, 1.305)
- स्पर्धते त्रिदशैः सह ।
“He vies **with the gods**.” (*Pañcatantraḥ*, 5.59)

An idiomatic use of the instrumental is with the words किम्, meaning “what is the use of...”, and अलम्, meaning “enough with...”:

- किं वृथा प्रयासेन ।
“What’s the use of **striving** in vain?” (Pañcatantraḥ, prose after 1.370)
- अलं सम्भ्रमेण ।
“Enough **confusion.**” (Pañcatantraḥ, prose after 1.236)

§43.4. The dative (चतुर्थी विभक्तिः)

The dative is used both for *arguments* of a verb (the **indirect object**) as well as a range of modifiers. The dative is assigned the *sampradānam* or “recipient” thematic role, and accordingly the core use of the dative is for a **recipient**, and more widely construed, as the one *to whom* something is given, told, or presented, or to whom something appears. In this sense it very often corresponds either to an indirect object in English, or a prepositional phrase with *to* or *for*:

- वासांस्य आभरणानि च सीतायै श्वशुरो ददुअ पित्रे ।
“Her father-in-law gave **Sītā** clothing and ornaments.” (Rāmāyaṇam, from Speijer §81)
- तत् तस्यै कथयति ।
“He tells it **to her.**” (Śākuntalam, from Speijer §81)
- अदर्शयत् पित्रे सखीम् ।
“She presented her friend **to her father.**” (Pañcatantraḥ, from Speijer §81)

The dative is used to express the **experiencer** with verbs of pleasing, in a construction like the Italian verb *piacere*.

- ऐष ते रोचते ।

“Do you like him?” (Lit. “Is he pleasing to you?”) (*Pañcatantra*)

The dative is also used for the **target** of certain feelings, especially anger and jealousy:

- नृपतिस् तक्षकाय चुकोप ।

“The king felt anger at **Takṣa**.” (*Mahābhārataḥ*, from Speijer §83)

The dative is very often used to express the **purpose** of an action, especially with verbal nouns:

- त्वरते मे मनः सङ्गमावतारणाय ।

“My heart rushes **to participate in the battle**.” (*Vēṇīsamhāraḥ*, from Speijer §87)

- गुरुस् तु विद्याधिगमाय सेव्यते ।

“But a teacher is served **in order to gain knowledge**.” (*Kām.*, from Speijer §87)

- स्वयम् एवाहं तद्विजयाय यास्यामि ।

“I will go **to conquer him** myself.” (*Pañcatantraḥ*, prose after 3.115)

In the sense of **purpose** it can sometimes be used for the *goal of motion*:

- कुसुमपुराय करभकं प्रेषयामि ।

“I will send Karabhaka **to Pāṭaliputra**.” (*Mudrārākṣasam*)

From Speijer §79.

An important use of the dative is to express that to which something *serves* or *conduces*. It is often the predicate in such constructions:

- परोपकारः पुण्याय, पापाय परपीडनम् ।

“Helping others **leads to merit**, while harming other **leads to sin**.” (*Pañcatantraḥ*)

From Speijer §80.

§43.5. The ablative (पञ्चमी विभक्तिः)

The principal role assigned to the ablative case is that of the *apādānam*, or the fixed place from which motion takes place. Accordingly it is used for the origin or source of motion, and corresponds to prepositional phrases with *from* in English:

- क्षितिपतिर् आस्थानमण्डपाद् उत्तस्थौ ।
“The king got up **from his audience hall.**” (*Kādambarī*, from Speijer §94)
- निरगान् नगर्याः ।
“He went out **from the city.**” (*Kathāsaritsāgarah*, from Speijer §94)

This usage is extended to express the *source* of any activity.

An important subclass of the above is the so-called **ablative of cause** (हेतुपञ्चमी):

- भयाद् इदम् आह ।
“He said this **out of fear.**” (*Hitōpadēśah*, from Speijer §102)
- दुर्मन्त्रान् नृपतिर् नश्यति ।
“**From bad counsel** a king is ruined.” (*Hitōpadēśah*, from Speijer §102)

The ablative of **separation** is used especially with verbs meaning to “separate” (acc. from abl.):

- त्वं पिङ्गलकात् तं वियोजयितुम् असमर्थ एव ।
“You’re completely incapable of separating him **from Piṅgalaka.**” (*Pañcatantraḥ*, prose after 1.227)
- दुर्मन्त्रान् नृपतिर् नश्यति ।
“**From bad counsel** a king is ruined.” (*Hitōpadēśah*, from Speijer §102)

The ablative is used to express that *in relation to which* something is compared, as well as

the complement of words like पर- and अन्य- “other,” and the noun वरम् “the better.” In these cases it corresponds to an English propositional phrase with *than*.

- वज्राद् अपि कठोराणि मृदूनि कुसुमाद् अपि ।
“Harder even **than adamant**, yet softer even **than a flower**.” (*Uttararāmacaritam*)
- रामः सीतायाः प्राणेभ्यो 'पि प्रियो 'भवत् ।
“Rāma was dearer to Sītā **than life itself**.” (*Uttararāmacaritam* 6.32)

§43.6. The genitive (षष्ठी विभक्तिः)

The genitive’s uses are largely **adnominal**, that is, a genitive will almost always modify another noun or nominal phrase. It is therefore used to express any **relation** (सम्बन्धः) between two noun phrases. Very often that relation is one of possession. For example:

- कथाप्रबन्धस्य कीदृशः पर्यन्तः ।
“What is the end **of the story** like?” (*Uttararāmacaritam*, prose after 4.22)

Some verbs take a complement in the genitive, such as √स्मृ “remember.”

- स्मर तस्या हंसकथायाः ।
“Remember **that story of the goose**.” (*Daśakumāracaritam*, from Speijer §120)

The genitive can be used to express the **agent** (कर्ता) or **patient** (कर्म) with a noun derived from a verb. These usages are similar to what, in Greek and Latin grammar, are called *subjective* and *objective* genitives respectively.

- रूपस्य हन्त्री ।
“[Old age], the destroyer **of beauty**.” (*Aśvaghōṣaḥ, Buddhacaritam* 3.30)
- न मर्षयिष्यति राक्षसकलत्रप्रच्छादनं भवतः ।

“He won’t much like **your** hiding Rākṣasa’s wife.” (*Mudrārākṣasam*, from Speijer §115)

The genitive also tends to take over the functions of the dative in expressing the person *for whom* something happens, or who experiences something in a certain way:

- रामभद्रस्य बहुतरप्रकारकष्टो जीवलोकः ।

“The world has become difficult in all kinds of ways **for Rāma**.” (*Uttararāmacaritam*, prose after 3.30)

§43.7. The locative (सप्तमी विभक्तिः)

The principal use of the locative is to express the अधिकरणम् or location in which an action occurs. However, it is often used not just as a modifier of a verb (i.e., in adverbial phrases), but as a modifier of nouns as well. For example:

- अस्मिन् ... प्रदेशे भूयांस उद्गीथविदो वसन्ति ।

“**In this region** live many masters of the Veda.” (*Uttararāmacaritam*, 4.3)

- राजगृहे मेषयूथम् अस्ति ।

“**In the palace** there is a flock of rams.” (*Pañcatantraḥ*, from Speijer §133)

- अभ्रमच्च च पौरजानपदेषु इयम् वार्ता ।

“This report spread **among the townspeople**.” (*Daśakumāracaritam*, from Speijer §133)

The locative sense is often metaphorical, and serves to indicate a **reference** (विषयः) of a particular feature of quality:

- वाचि नियमः ।

“**Restraint in speech**.” (*Uttararāmacaritam*, 4.2)

- उद्गीथे कुशला बभूवुः ।

“They were skilled in the Veda.” (*Chāndōgyōpaniṣat*, from Speijer §142)

The vocative is very often used to express a **condition** (निमित्तम्) for the rest of the sentence:

- प्रियानाशे कृत्स्नं किल जगद् अरण्यं हि भवति ।

“When a loved one is lost, they say, the whole world becomes a desert.” (*Uttararāmacaritam*, 4.30)

A specialization of the expression of condition is the use of the locative in expressions of time:

- षण्मासाभ्यन्तरे विधिनियोगाद् विधवा भविष्यसि ।

“You will become a widow, on fate’s decree, **within six months.**” (*Pañcatantraḥ*, prose after 3.196)

§43.8. The vocative (सम्बोधनम्)

The vocative is used exclusively to get the attention of the listener (or reader). It is often combined with vocative particles such as रे or हे.

- रे रे किराताः धावत धावत ।

“Hey you foresters! Run away!” (*Pañcatantraḥ*, prose after 1.451)

§44. The agentive, patientive, and impersonal constructions

(कर्तृकर्मभावप्रयोगाः)

Whenever a verbal form is used in Sanskrit, it is either used with reference to the **agent** (कर्तृ) of the verbal action, or alternatively, with reference to either the **patient** (कर्म) of the verbal action or the **verbal action** (भावः) itself. When a form is used in reference to

the agent, patient, and verbal action, we speak, respectively, of agentive, patientive, and impersonal constructions. These constructions correspond closely to active constructions (“He was driving the car”), passive constructions (“She was hit by a car”), and constructions with a “dummy” subject (“It’s raining”) in English, respectively.

The referent of a verb does not necessarily need to be expressed by a nominal or pronominal phrase in the same sentence; its expression by the verbal form is often sufficient, especially if the referent (whether the agent or patient of the verb) can be determined on the basis of context. However, in the agentive and patientive construction, the verbal form will agree with, and thus express the same grammatical categories, as the agent and patient, respectively:

- *tudyāmahē* “We are being hit”
- *vayam tudyāmahē* “We are being hit”

In the impersonal construction, by contrast, the verbal form will always express the categories of a “dummy” subject in the third person singular neuter:

- *anēna hasitam* “there was laughing done by him” = “he laughed”

In part, the choice of construction is limited by the lexical semantics of a given verb. Only *transitive* (सकर्मकः) verbs, i.e., those that can theoretically take a patient as one of their arguments in the first place, can be used in the *patientive* construction. Correspondingly, the *impersonal* construction is much more likely to be used with *intransitive* verbs. The primary alternation in construction, therefore, is between agentive, on the one hand, and patientive and impersonal, on the other. We can therefore distinguish between agentive and non-agentive forms of Sanskrit verbs. Every verbal form in Sanskrit is specified as to whether it expresses an agent or not.

These three constructions (प्रयोगाः) determine the *referent* of the verbal form and thus, if it

is a finite form, its *subject*. We must distinguish between the *subject* as a syntactic category, which is one of a verb's core grammatical arguments, and that with which it agrees in person and number (and possibly other grammatical categories), from the *agent* as a semantic category, which simply refers to the participant who does the action associated with a verb. In the case of finite verbs, as well as with nominal sentences, the *subject* stands in the nominative case (प्रथमा विभक्तिः), and in Pāṇini's account of sentential syntax, this is because the nominative case is used for a participant that has already been expressed elsewhere in the sentence. Because of the possibility of non-agentive constructions in Sanskrit, the subject of a verb will very often *not* be the agent of the verbal action.

In the non-agentive constructions (patientive and impersonal), the agent of the verb may nevertheless be expressed, but if so, the agent must be expressed by an instrumental case-form (तृतीया विभक्तिः).

If we take our verbal action, for example, to be the transitive verb √तुद् “strike,” and our agent to be अध्यापकः and our patient to be शिष्यः, we can produce the following sentences:

- *adhyāpakaḥ śiṣyam tudati*: **agentive** construction (कर्तरि प्रयोगः)
- *adhyāpakēna śiṣyaḥ tudyatē*: **passive** construction (कर्मणि प्रयोगः)

For an intransitive verb such as √हस, we do not have the option of using the कर्मणि प्रयोगः, but we do have the option of using the भावे प्रयोगः:

- *śiṣyō hasati*: **agentive** construction (कर्तरि प्रयोगः)
- *śiṣyēṇa hasyatē*: **impersonal** construction (भावे प्रयोगः)

Non-finite forms of verbs, including verbal adjectives, are also used either agentively or not. Here are a few examples using verbal adjectives (कृत):

- *kumbhakārō ghaṭasya kārakaḥ*: **agentive** construction (कर्तरि प्रयोगः) “the potter is the maker of the pot” (using the suffix *Ṇvul*)

- *kumbhakārēṇa ghaṭaḥ kṛtaḥ*: **patientive** construction (कर्मणि प्रयोगः) “the pot was made by the potter” (using the suffix *Kṛtaḥ*)
- *śiṣyēṇa hasitam*: **impersonal** construction (भावे प्रयोगः) (using the suffix *Kṛtaḥ*)

§45. Subordinate clauses

A *subordinate clause* is a unit that has, internally, the same syntactic organization as a sentence, but which is embedded into another sentence—called the *matrix clause*—where it serves as either an adverbial or adjectival modifier. (*Complement clauses* are also embedded into a matrix clause, but because they stand in a different syntactic relationship to the matrix clause, and because they are generally formed differently from subordinate clauses in Sanskrit, they will be discussed separately below.) One way to think about clausal modifiers is that they tell us something about one of the noun phrases in the matrix clause (in the case of adjectival modifiers), or about the verbal action of the matrix clause itself (in the case of adverbial modifiers):

- He got on the bus *that was going to Madison*. (Adjectival modifier clause.)
- She rides her bike *when the weather is nice*. (Adverbial modifier clause.)

In Sanskrit, these kinds of subordinate clauses are all formed in more or less the same way: the subordinate clause involves a *relativizer*, a pronoun or adverb formed from the base ष-, and very often there is a *correlative* form in the matrix clause that is “relativized on.” The correlative form is typically a pronoun or an adverb formed from the base ष-. The form in the matrix clause that is “relativized on,” i.e. the form to which the relative clause refers, is called the antecedent or head of the relative clause.

Here is an example:

- न सो 'स्ति प्रत्ययो लोके यः शब्दानुगमाद् ऋते ।

“There is no concept in the world that is not accompanied by a linguistic expression.”

(*Vākyapadiyam* of

Bhartṛhari)

- **Matrix clause:** न सो 'स्ति प्रत्ययो लोके (note correlative स:): “**that** concept does not exist in the world”
- **Subordinate clause:** यः शब्दानुगमाद् ऋते (note relative य:): “**which** (concept) is apart from the accompaniment of a linguistic expression”
- **Relativized on:** the noun phrase सः प्रत्ययः

Here, as often, we have a *relative–correlative* pair, represented by the pronouns यः and सः. The entire subordinate clause serves to characterize the nominal with which the correlative adjective सः is construed, which in this case is सः प्रत्ययः.

Note that the relative and correlative words will generally agree in their **gender** and **number** (if they are pronouns or adjectives). The **case** of each form, however, will depend on the role that it plays within its respective clause (either the relative clause or the matrix clause). Here are some examples:

- यस्य चेतसि वर्तेथाः स तावत् कृतिनां वरः ।

“In **whose** mind you might occur, **that person** is the best of those who do good deeds.”

(*Kumārasambhavaḥ* 6.18)

- यस्मिन् अग्नये होत्रं भवति, तद् अग्निहोत्रम् ।

“**That in which** there is an offering to Agni is the *agnihōtram*.” (*Śābarabhāṣyaḥ* on 1.4.4)

Here is an example using adverbs:

- यत्र दारिद्र्यं तत्राहम् ।

“Wherever poverty is, there I am.”

- **Matrix clause:** तत्राहम् “**there** I am”
 - **Subordinate clause:** यत्र दारिद्र्यं “**where** poverty [exists]”
 - **Relativized on:** the adverbial phrase तत्र
- यदा स देवो जागर्ति तदेदं चेष्टते जगत्।
- “When that deity is awake, then this world is in motion.”
- **Matrix clause:** तदेदं चेष्टते जगत् “**then** this world is in motion”
 - **Subordinate clause:** यदा स देवो जागर्ति “**when** that deity is awake”
 - **Relativized on:** the adverbial phrase तदा

§45.I. Restrictive relative clauses

In English grammar, a distinction is often drawn between “restrictive” and “nonrestrictive” relative clauses. These words refer to the function of the relative clause *vis-à-vis* the noun phrase that it modifies: a restrictive relative clause “restricts” the reference of the noun phrase to something rather more narrow than what it would mean on its own (“the men who drank the *sōma* became intoxicated,” where “the men who drank the *sōma*” refers to fewer people than “the men”), while a nonrestrictive relative clause does not substantially change the reference of its noun phrase (“Indra, who killed Vṛtra, drank the *sōma*”).

Whereas in English, these kinds of relative clauses are often distinguished by means of different relative pronouns (“who/that” vs. “who/which”) and sometimes by punctuation, in Sanskrit, there is no explicit way of drawing this distinction.

However, Sanskrit has “restrictive” relative clauses in another sense: the correlative form, and sometimes also the relative form, is qualified by the word एव in its sense of “exclusion of a connection with anything else” (अन्ययोगव्यवच्छेदः). These sentences mean that whatever is “relativized on” in the matrix clause must be given the interpretation supplied in the

subordinate clause; all other interpretations are foreclosed. These constructions therefore “restrict” the meaning of whatever is relativized on in the matrix clause (e.g., a noun phrase, a temporal adverb, etc.) to precisely that which is specified in the subordinate clause. For example:

- यद् एव खं तद् एव कम् ।
“Prajāpati is **precisely the same as** space.” *(Chāndōgya Upaniṣad)*
- मृतः स एवास्ति यशो न यस्य ।
“**He alone** is dead who has no fame.” *(Mahāsubhāṣitasāṅgraha)*
- तत् तत् कर्म कृतं यद् एव मुनिभिः ।
“I did **all of the very same rituals** that the sages did.” *(Vairāgyaśatakam 6)*

§45.2. Distributive relative clauses

The relative and correlative forms may be repeated in a distributive sense (वीप्सायाम्). The indefinite sense of such constructions is often underscored by the presence of an indefinite pronoun or adverb.

- yadā yadā hi dharmasya glānir bhavati bhārata

abhyutthānam adharmasya tadātmānaṁ sṛjāmy aham

.
“For **whenever** *dharma* is on the wane, Bhārata, and *adharma* is ascendant, I bring myself forth.” *(Bhagavadgītā)*
- यद् यद् धि कुरुते किञ्चित् तत् तत् कामस्य चेष्टितम् ।
“Every single thing one does is the work of Kāma.” *(Mahāsubhāṣitasāṅgraha)*

§45.3. Multiple relativizers

Unlike in English, where no more than one constituent of the matrix clause is relativized on, in Sanskrit it is not uncommon to see constructions involving two relative-correlative pairs. Some care must be taken to determine which correlative form each relative form refers to, as well as to distinguish between this type of construction and the aforementioned construction wherein relative forms are doubled.

It is very bad translation style, but in order to understand these constructions, it may be useful to translate the relative-correlative pairs with variables, e.g., x and y .

- यद् एव रोचते यस्मै भवेत् तत् तस्य सुन्दरम् ।

“If something pleases someone, he’ll think that it’s beautiful.” (*Hitōpadēśaḥ* 2.49)

“ x would be beautiful to y if precisely that x is pleasing to y ,” i.e., (regardless of whether or not it actually is).

- yasmāc ca yēna ca yadā ca yathā ca yac ca yāvac ca yatra ca śubhāśubham ātmakarma

tasmāc ca tēna ca tadā ca tathā ca tac ca tāvac ca tatra ca kṛtāntavaśād upaiti

“From which, by which, when, how, how long, where, and what good or bad deeds one does, from that, by that, then, in that way, for that amount of time, and there one goes, according to fate.” (*Pañcatantraḥ* 2.19)

§46. Complement clauses

In Sanskrit, certain forms, both nominal and verbal, can take as a complement an arbitrarily long constituent—a phrase, a clause, or multiple clauses. These constituents are usually marked as complements by the particle इति, which always *follows* the constituent.

§47. The syntax of participles

Participles are **verbal adjectives** and can therefore perform all of the same syntactic functions as adjectives. Here, however, we will spell out some of the main functions with examples, since in some cases, participles are used in ways that regular adjectives are not, and *vice versa*.

All participles are *adjectives* and therefore can always be seen as constituting part of a *noun phrase*. But participles are also *verbal forms*, and can also be seen as constituting part of a *verb phrase*. Whether one or the other of these roles is more prominent in a sentence will depend on context.

When used as part of a *noun phrase*, there are two options: the participle is either used **attributively**, that is, to qualify the noun that is the head of the phrase, or it is used **substantively**, that is, as the head of the noun phrase itself, replacing rather than qualifying the noun. The distinction between these two usages is not very vast, in syntactic terms, because the participle is either the head of the phrase itself, or an adnominal modifier of the head of the phrase. In both cases, the participle can be translated with a *relative clause* in English.

Here are some **attributive** usages:

- तत्रोदासीनान् मुनीन् अब्रवीत् ।
“he told the sages *who were sitting* there.”
- याज्ञवल्क्यं विद्वांसं पृच्छति ।
“he asks Yājñavalkya, *who is learned*.”
- चतुरः पुरुषान् पर्यङ्कं बिभृतः पश्यामि
“I see four men *who are carrying a palanquin*.”
- मम न रोदती भार्या

“I don’t have a wife *who cries after me.*”

- तेन प्रशस्तो धर्मो ज्ञातः।

“He knew the *dharma that is praised.*”

Here are some **substantive** usages that are closely related to the examples given above:

- तत्रोदासीनान् अब्रवीत्।

“he told *those who were sitting there.*”

- विद्वांसं पृच्छति।

“he asks *the one who is learned.*”

- पर्यङ्कं विभृतः पश्यामि।

“I see *those who are carrying a palanquin.*”

- मम न रोदती।

“I don’t have *someone who cries after me.*”

When used as part of a *verb phrase*, there are also two options: either the participle is used as the main **predicate** of the sentence, and hence as the head of the verb phrase, or it is used to introduce an **adverbial clause** that modifies the main verb phrase in some way. Note that present participles (i.e., those formed with the suffixes *ŚatR* and *ŚānaC*) can **never** be used as the main predicate of the sentence. This function is only available for past participles (i.e., *niṣṭhā*).

The second usage, where the participle is used as part of an adverbial clause, is equivalent to the *circumstantial participle*, as Greek textbooks call it, and it can have a variety of senses depending on the context, which can usually be translated by a subordinate clause in English: **temporal** (“when,” “as,” “while,” etc.); **concessive** (“although”), **causal** (“because”), **conditional** or **hypothetical** (“if”), etc. This adverbial function does not depend on how the participle is linked to the main sentence in syntactic terms: it may refer to

someone or something that is mentioned or implied elsewhere in the sentence, *in any case*. Alternatively, the participle can even be used *without* reference to someone or something that is mentioned or implied elsewhere, a usage that we call *absolute* and describe below.

NOTE: Pāṇini includes this usage under the terms “characterization or cause of a verbal action” (*lakṣaṇahētvoḥ kriyāyāḥ, Aṣṭādhyāyī* 3.2.126).

Here are some examples of participles functioning as the head of **adverbial clauses**:

- पलायन्तो हन्यमानाः स्वर्गं न गच्छन्ति ।
 “they do not go to heaven, *because they are killed as they are fleeing*” (*Pañcatantra* 58, cited by Speijer)
palāyantaḥ temporal, and *hanyamānāḥ* causal
- पठन् रामायणं नरः प्रेत्य स्वर्गं महीयते ।
 “*by reading the Rāmāyaṇam*, a man goes to heaven when he dies” (*Rāmāyaṇam* 1.1.99, cited by Speijer)
paṭhan causal
- अधीयानो वसति ।
 “he is staying here *in order to study*” (*Kāśikā on Aṣṭādhyāyī* 3.2.126)
adhiyānaḥ causal
- अजल्पतो जानतस् ते शिरो यास्यति खण्डशः ।
 “*If you know it but do not say it*, your head will fly to pieces” (*Kathāsaritsāgaraḥ* 77.92, cited by Speijer)
ajalpataḥ and *jānataḥ* expressing a condition for the main action
- भो निषिद्धस् त्वं मयानेकशो न शृणोषि ।
 “Sir, *although I have tried to dissuade you multiple times*, you do not listen to me” (*Pañcatantra* 304, cited by Speijer)

niṣiddhaḥ concessive

- भस्मीभूताः कथं यूयं जीवन्तः पुन उत्थिताः ।

“How is it that you, after being turned into ashes, are standing alive once again?”

(*Kathāsaritsāgaraḥ* 12.11.106)

- शयाना भुञ्जते यवनाः ।

“the Yavanas eat lying down”

(*Kāśikā* on *Aṣṭādhyāyī* 3.2.126)

sayānāḥ a participle of manner

§48. Absolute constructions

Sanskrit has two **absolute** constructions, by which a participial phrase can be used without a “pivot” (see above) linking it to the main clause. By far the most common is the **locative absolute**, in which the subject of a verbal action (either the agent or the patient) and an accompanying participle (either active or passive) is put into the locative case. The participle can be past or present. Pāṇini describes this use as “characterizing another verbal action” (भावलक्षणम्, *Aṣṭādhyāyī* 2.3.37). It is regularly called सतिसप्तमी because of the prevalent use of सति, the locative singular masculine/neuter of the present participle of the verb √अस् “be.” In fact सति is sometimes included in the construction even when another participle is used.

- एतस्मिन् मृते राजसुते को 'र्थो ममासुभिः ।

“now that this prince has died, what use is my life to me?” (*Kathāsaritsāgara* 28.134, cited by Speijer)

- कर्णम् ददात्य अभिमुखं मयि भाषमाणे ।

“when I am speaking to her she listens”

(*Śākuntala* 1, cited by Speijer)

- रात्रौ दीपशिखाकान्तिर् न भानाव् उदिते सति ।

“it is at night that the lamp is beautiful, not when the sun has risen” (*Pañcatantra*)

1.310, cited by Speijer)

The **genitive absolute** is used in much more limited circumstances. According to Pāṇini it is used when there is an additional sense of disregard (*Aṣṭādhyāyī* 2.3.38), although there is a range of interpretations of what this might mean. The standard example shows that the disregard is that of the agent of the principal action for the agent of the action expressed by the participle::

- रुदतः प्राव्राजित्।

“*notwithstanding their crying*, he renounced the world”

(cited by Speijer)

Chapter 7

Nominal composition

§49. Introduction

In Sanskrit, a nominal can form a compound with another nominal (*Aṣṭādhyāyī* 2.1.4 सहसुपा). Compound words can be quite large, but they are almost always analyzeable into *binary* constituents: that is, at any given level of analysis, a compound can be broken up into two parts, and these two parts must be related to each other in a specific way. This chapter will introduce the types of compounds and the relations that obtain between members of a compound.

An important concept when talking about compounds is that of the **head** and its **dependent**. The head of a compound is the word which determines the syntactic category of the compound as a whole. It can be defined more simply and straightforwardly in a negative way: the head is the word that is not subordinate to, or does not modify, any other word within the compound. The dependent word always modifies the head.

NOTE: In the Indian grammatical tradition, the head is called प्रधानम्, and the dependent is called उपसर्जनम्.

Generally compounding one word with another entails the loss (लुक् in Pāṇini's terms) of the inflectional ending of the first word. The first word therefore appears in its **stem form**, although for certain types of nouns, the form used in compounds might be slightly different from the stem form (see note below). Since inflectional endings normally mark the relation between words, in their absence, word order becomes important for specifying the relationship. In Sanskrit compounds (as in English compounds), the head appears **to the right of** the dependent in the vast majority of cases. Sometimes, however, the first word retains its inflectional ending even when compounded with another word; these compounds are called अलुक्-समासः.

The following exceptions should be noted to the general principle that the form of a word in compound is identical to its stem form:

- stems in *-n* lose the final nasal and simply use the preceding vowel:
 - बलिन्- “strong” → बलि-
 - कर्मन्- “action” → कर्म-
 - राजन्- “king” → राज-
- words that have multiple stem forms generally use their *weakest* form:
 - विद्वांस्-, विदुष्- “scholar” → विदुष्-
 - भवन्त्-, भवत्- “you” → भवत्-
- pronouns (सर्वनामानि) often use a special form for the stem, generally (but not always) identical to the neuter nominative-accusative singular:
 - तत्परः ← तत् परम् यस्य सः “intent upon that”
 - युष्मदस्मत्प्रत्ययः ← युष्माकम् अस्माकम् च प्रत्ययः “the idea of ‘you’ and ‘me’”
 - किंनामः ← किम् नाम यस्य सः “having what as his name?”
 - यत्पुत्रः ← यस्य पुत्रः “the son of whom”

An exception to the above is महन्त्-, महत्-, which appears as महा- when it is coreferential with the following word in a compound (either a कर्मधारयः or a समानाधिकरणबहुव्रीहिः); see *Aṣṭādhyāyī* 6.3.46.

- महाजनः ← महांश् च स जनश् च “great people, the majority”
- महाराजः ← महांश् च स राजा च “great king”

When a word appears in its stem form in a compound, you will have to use word order and context in order to determine the categories that are usually expressed by the inflectional endings: the relationship with the following word, usually expressed as *case*; the number; and (in the case of adjectives) the gender.

Reference will be made in this section to the “analytic paraphrase” (विग्रहवाक्यम्) that are the semantic equivalent of compound expressions. The analysis of compounds in Sanskrit typically proceeds by identifying what kind of compound it is, and then offering an equivalent expression in analytic terms. This strategy is used very often, for example, in Sanskrit commentaries. For details and plentiful examples, see Tubb and Boose, *Scholastic Sanskrit*.

§50. Endocentric compounds

Endocentric compounds are those wherein the *head* is actually a constituent of the compound. The general test for endocentricity is whether the referent of the compound as a whole can be described by one of its constituent terms: since a *bluejay* is a jay, a *checkerboard* is a board, and a *guest lecturer* is a lecturer, all of these expressions are endocentric; contrast these with the exocentric expressions *Blackbeard* (who is not a beard) or *skinhead* (who is not a head).

Under the general category of **endocentric** compounds we may distinguish the following subtypes:

- compounds wherein the *second* member is the head of the *first* member;
- compounds wherein the *first* member is the head of the *second* member; and
- compounds where the first and second member both serve as the head.

The second subtype is a passable approximation of what Indian grammarians call अव्ययी-भावाः, or “adpositional phrase compounds” (see below). The third describes what Indian grammarians call द्वन्द्वाः, or “coordinative compounds” (see below). The first corresponds to the large category of तत्पुरुषः compounds.

In all तत्पुरुषः compounds, the first member is the **dependent** of the second member, which is the **head**. The nature of that dependency, however, may differ across compounds, and accordingly **three** further subtypes of तत्पुरुषः compounds are distinguished:

- विभक्तितत्पुरुषः, wherein the relationship can be expressed by a *case suffix*;
- कर्मधारयः, wherein the two members are *coreferential* and the second qualifies the first; and
- उपपदतत्पुरुषः, wherein the first member is a dependent argument of the second member, which is a verbal noun or adjective.

Each of these three subtypes admits of further subtypes, as will be discussed below.

§50.1. Case compounds

Case compounds (विभक्तितत्पुरुषाः) are those in which the relationship between the head and the dependent can be expressed analytically as a relationship between two case-forms. What distinguishes these case compounds from coreferential compounds is that the constituent words in a case compound *do not* refer to the same thing, but rather express a relationship between two different things.

In theory, the relationship between the two constituents can be expressed by *any* of the cases, since all of the cases can, in theory, express a relationship between two nouns. In practice, however, the genitive is by far the most common case for expressing a relationship between nouns — indeed, that is its primary grammatical function — and therefore the षष्ठीतत्पुरुषः is the most common of these case compounds. Among the other cases, the nominative and the accusative are not generally used adnominally, but rather to mark core arguments of the sentence (the subject and the object, respectively). Adnominal usages of these cases, however, do occur, and therefore case compounds can be formed.

Nominative case compounds (प्रथमातत्पुरुषाः) are, as noted above, quite uncommon, since the nominative case does not generally express an adnominal relationship. (As noted above, if the two words actually refer to the same thing, they are coreferential and hence the compound will not be considered a case compound, or विभक्तितत्पुरुषः, but a coreferential compound, or कर्मधारयः.) Nominative case compounds are allowed by *Aṣṭādhyāyī* 2.2.1 and *Aṣṭādhyāyī* 2.2.2, when compounding a word with another word expressing a part thereof. In the analytic expressions, the word expressing a part is in the *nominative*, and the word expressing that of which it is the part is in the *genitive*.

- अर्धपिप्पली ← अर्धं पिप्पल्याः “half of a black pepper”
- पूर्वकायः ← पूर्वं कायस्य “the forepart of the body”
- उत्तरकायः ← उत्तरं कायस्य “the top part of the body”

NOTE: This type of formation is necessary to account for the position of words within the compound. Other compounds involving a word for a part, such as ग्रामार्धः, can be more straightforwardly analyzed as genitive case compounds.

Accusative case compounds (द्वितीयातत्पुरुषाः) are usually formed when a verbal adjective enters into a compound with an accusative object.

- ग्रामगतः ← ग्रामं गतः “having gone to the village”

- कृष्णश्रितः ← कृष्णं श्रितः “having taken refuge in Kṛṣṇa”

As can be seen from these examples, the verbal adjective is usually a past participle in *-ta* that expresses the *agent* of the action, which is often the case in verbs of motion, and the noun with which it is compounded is usually the *patient* of the action, which in the case of verbs of motion is generally the destination.

Instrumental case compounds (तृतीयातत्पुरुषाः) are formed whenever a nominal form can take a modifier in the instrumental case, which might express *accompaniment*, *instrumentality*, or a *characteristic*, or, in the case that the head is a verbal adjective, the *agent* or *instrument* of the verbal action.

- गुडमिश्राः ← गुडेन मिश्राः “mixed with jaggery”
- असिकलहः ← असिभिः कलहः “a fight with knives, a knife-fight”
- माषोनः ← माषेण ऊनः “short by a gram”
- यत्नकृतः ← यत्नेन कृतः “produced with effort”
- लक्ष्मणसहितः ← लक्ष्मणेन सहितः “together with Lakṣmaṇa”

Dative case compounds (चतुर्थीतत्पुरुषाः) are permitted by *Aṣṭādhyāyī* 2.1.36 when one noun is said to be “for the purpose of” another, and particularly when used with the words अर्थः “purpose,” बलिः “offering,” हितः “beneficial,” सुखम् “pleasure,” and रक्षितम् “protection.”

- यूपदारुः ← यूपाय दारुः “wood for a sacrificial post”
- ब्राह्मणार्थम् ← ब्राह्मणेभ्यो 'र्थम् “for the sake of Brāhmaṇas”
- कुबेरबलिः ← कुबेराय बलिः “an offering to Kubēra”
- गोहितम् ← गोभ्यो हितम् “beneficial to cows”
- गोरक्षितम् ← गोभ्यो रक्षितम् “protection for cows”

Ablative case compounds (पञ्चमीतत्पुरुषाः) are permitted by *Aṣṭādhyāyī* 2.1.37, to express fear

of something, and *Aṣṭādhyāyī* 2.1.38, when the latter word is a verbal adjective implying separation (although Pāṇini says that these are only rarely compounded). Furthermore, *Aṣṭādhyāyī* 2.1.39 allows certain ablative forms with an adverbial meaning to be compounded with a following verbal adjective.

- वृकभयः ← वृकेभ्यो भयः “fear of wolves”
- अपेतदोषः ← दोषेभ्यो 'पेतः “free of faults”
- स्वर्गपतितः ← स्वर्गात् पतितः “fallen from heaven”
- कृच्छ्रलब्धः ← कृच्छ्रात् लब्धः “obtained with difficulty”

Genitive case compounds (षष्ठीतत्पुरुषाः) are the most common type of case compound. Most often they have a possessive meaning, although nearly any other type of relationship between the two nominal forms is possible. When the final word expresses a verbal action, the genitive is permitted in the sense of the patient.

- राजपुरुषः ← राज्ञः पुरुषः “the king’s man”
- दशाहेतुः ← दशाया हेतुः “the cause of the condition”
- ओदनभोजनम् ← ओदनस्य भोजनम् “the eating of rice”
- देवगुरुः ← देवानां गुरुः “the teacher of the gods”

Locative case compounds (सप्तमीतत्पुरुषाः), like their corresponding analytic expressions, are used to express *location* and *reference*, as well as some expressions of *time*.

- गिरिग्रामः ← गिरिषु ग्रामः “a village in the mountains”
- ललाटलोचनम् ← ललाटे लोचनम् “eye in the forehead”
- संवत्सरदेयम् ← संवत्सरे देयम् “to be given within [one] year”
- स्थालीपक्कः ← स्थाल्यां पक्कः “cooked in a plate”
- अक्षप्रवीणः ← अक्षेषु प्रवीणः “skilled at dice”

In the **analytic paraphrase** (विग्रहवाक्यम्) of such compounds, the first element is simply expressed in the appropriate case-form, followed by the second member, which is usually expressed in the nominative singular, as in the above example.

§50.2. Coreferential compounds

Coreferential compounds (कर्मधारयः) are those in which the two constituents refer to the same thing (*Aṣṭādhyāyī* 1.2.42 तत्पुरुषः समानाधिकरणः कर्मधारयः). This relationship is called “coreferentiality” (सामानाधिकरण्यम्). In these compounds, as endocentric compounds more generally, the *final member* is the head of the compound, which is modified by the first member. Hence the compound as a whole is inflected exactly in the same way as its final member, regardless of whether it is a noun or an adjective.

Generally, in the **analytic paraphrase** of such a compound, an anaphoric pronoun (such as तद्, इदम्, or अद्) is employed in order to show that the two constituents describe the same thing, as shown in the examples below demonstrate.

One very common category of coreferential endocentric compounds is that in which the first constituent is an adjective. Although this is not made explicit in the analytic expression, the first constituent will almost always qualify the second—even if the second is also an adjective. Usually the most accurate translation is “y that is x.” In such cases the adjective takes its *basic* stem form, that is, it uses the masculine/neuter stem (e.g., सुन्दर-) rather than a stem with a feminine suffix (e.g., सुन्दरी-).

- नीलोत्पलम् ← नीलं च तद् उत्पलं च “a lotus that is blue,” “blue lotus”
- लोहितकृष्णः ← लोहितश् च स कृष्णश् च “black that is red,” “reddish-black”
- सज्जनः ← सञ्ज् च स जनश् च “a person that is good,” “good person”
- विचक्षणस्त्री ← विचक्षणाश् च सा स्त्री च “a woman that is clever,” “clever woman”

Another type involves two substantives that are combined. Once again, the first con-

stituent qualifies the second.

- ब्रह्मराक्षसः ← ब्रह्मा च स राक्षसश् च “a Rākṣasa that is a Brahman”
- राजर्षिः ← राजा च स ऋषिश् च “a sage that is a king,” “a royal sage”

A large number of coreferential compounds cannot be analyzed “in their own words” (hence they are said to be अस्वपदविग्रहः, “not having an analytic paraphrase that uses the same words”), because their first member is a “bound form” which can only occur when followed by another form. This category includes the following:

- नञ्त्तलुलरुषः, negative endocentric compounds;
- प्रलदितलुलरुषः, coreferential compounds beginning with a prefix, among which are counted the standard prefixes that are also affixed to verbal forms (प्रलदि) as well as a few special prefixes that are only used for nouns, such as कु;

A नञ्त्तलुलरुषः is simply formed by prefixing the negative suffix नञ्, which generally takes the form *a-* before consonants and *an-* before vowels, to a nominal form. The resulting compound has the opposite meaning of the negated term, which may be either a noun or an adjective:

- अब्रलह्मणः ← न ब्रलह्मणः “a non-Brāhmaṇa”
- अपिता ← न पिता “a non-father”
- अनारक्तः ← नारक्तः “not attached”
- अप्रसक्तः ← न प्रसक्तः “not relevant”

They are considered कर्मधारयः because the negative particle, although not inflected, directly modifies the head of the compound. As can be seen from these examples, the analytic expression generally employs the word नञ् in its independent form, as the prepositive particle न.

The प्रादित्पुरुषाः are formed by prefixing one of the indeclinable prefixes (प्रादि, see verbal prefixes above) to the head. In some cases, they function exactly like adjectives, and are generally rendered as adjectives in an analytic paraphrase. These adjectives generally incorporate the indeclinable prefix.

- सुपुरुषः ← शोभनः पुरुषः “a good person”
- अतिपुरुषः ← अतिशायितः पुरुषः “a first-rate person”
- दुर्जनः ← दुष्टो जनः “a bad person”

Note that most of these prefixes are also used as the first element of “governing compounds” (उपपदतत्पुरुषाः), that is, as adverbial modifiers of the verbal action expressed the second member of the compound, when that is a verbal noun or adjective (see below). I discuss those compounds below. Here, we are concerned only with compounds wherein the two members are coreferential.

The prefix कु and its substitutes are used with a perjorative sense that is often paraphrased as कुत्सितः “blamed, found fault with.”

- कुकविः ← कुत्सितः कविः “a bad poet”
- कापुरुषः ← कुत्सितः पुरुषः “a bad person”
- कदुष्टः ← कुत्सित उष्ट्रः “a bad camel”
- कामधुरः ← किञ्चिन् मधुरः “slightly sweet”

§50.3. Governing compounds

While most compounds—except for *dvandvas* and, arguably, *karmadhārayas*—involve the “governing” of one word by another, the term “governing compound” (उपपदसमासः, lit. “a compound involving a subordinate word”) is reserved for a special class of *tatpuruṣa* compounds, *wherein the relation of the head and its dependent cannot be expressed through a*

case-relationship between two independently-occurring nominal forms, because the head is a bound form which cannot occur outside of a compound. A parallel in English is chimney sweep, since the word sweep is not used as an agent noun in its own right.

In the *Aṣṭādhyāyī*, such compounds are generally taught by specifying

1. the first member, or dependent (in the locative case), sometimes with additional specifications regarding the thematic role that the dependent has in relation to the action designated by the verbal root;
2. the second member, or head, which will always be a **bound form** (in the sense that it does not occur outside of such compounds) and will also be a **primary nominal derivative** of the verb, and hence is taught by Pāṇini as consisting of:
 - a) the verbal root (in the ablative case);
 - b) the primary derivational suffix (i.e., कृत्).

Because the head is a bound form, the analytic expression (विग्रहवाक्यम्) corresponding to an *upapadasamāsaḥ* will usually take the form a sentence involving a conjugated verb. Examples will be given below.

- वृत्रघ्नः ← *vṛtram hanti* “Vṛtra-slayer, slayer of Vṛtra”
- सोमसुत् ← *sōmam sunōti* “Sōma-presser, priest who presses the Sōma”
- जलदः ← *jalam dadāti* “water-giver, cloud”

Since such compounds are the only context in which certain types of primary derivatives occur, I provide here a list of the most common primary derivational suffixes that are used to form उपपदसमासाः, along with examples.

- अण् (*Aṣṭādhyāyī* 3.2.1). A very general suffix used to form compounds with *N*-gradation in the root.
 - *kumbha-* + *kr-* + *aN-* (+ *sU*) → कुम्भकारः “pot-maker” (= कुम्भं करोति)
- अट् (*Aṣṭādhyāyī* 3.2.16). Another suffix that is simply *-a-*, but this one requires *guṇa* of the root. The effect is that the suffix is *-a-* with zero grade of the root. The feminines formed with this suffix use the suffix डीप् (*Aṣṭādhyāyī* 4.1.14).
 - *purah-* + *sr-* + *aT-* (+ *sU*) → पुरःसरः “one who goes in front” (= पुरः सरति)
 - *sōka-* + *kr-* + *aT-* + *ÑiP* (+ *sU*) → शोककरी “one who causes sorrow” (= शोकं करोति)
- खल्ल् (*Aṣṭādhyāyī* 3.3.126). The suffix *-a*, with *guṇa*, attached to roots when preceded by the indeclinable prefixes ईषद्, सु, and दुः. This suffix has a patientive meaning by *Aṣṭādhyāyī* 3.4.70
 - *duḥ* + *tr-* + *KhaL* (+ *sU*) → दुष्टरः “difficult to cross” (= तरितुमशक्यः)
 - *duḥ* + *labh-* + *KhaL* (+ *sU*) → दुर्लभः “difficult to obtain” (= लब्धुमशक्यः)
- टक् (*Aṣṭādhyāyī* 3.2.8). Actually identical to अट्, but taught after roots that historically ended in laryngeals. The effect is that the suffix is *-a-* with zero grade of the root. The feminines formed with this suffix use the suffix डीप् (*Aṣṭādhyāyī* 4.1.14).
 - *sāman-* + *gai-* + *ṬaK-* (+ *sU*) → सामगः “*sāman*-singer” (= सामानि गायति)
 - *surā-* + *pā-* + *ṬaK-* + *ÑiP* (+ *sU*) → सुरापी “drinker of wine” (= सुरां पिबति)
- ड (*Aṣṭādhyāyī* 3.2.48). The suffix *a*, replacing the vowel and any consonants that follows; taught for the roots ending in nasals, like √गम् and √हन्.
 - *pāra-* + *gam-* + *Ḍa-* (+ *sU*) → पारगः “one who goes to the furthest shore”
- खच्च (*Aṣṭādhyāyī* 3.2.38). Thus suffix induces the augment मुम् (*Aṣṭādhyāyī* 6.3.37)).

- *priya + vad-* + *KhaC* (+ *sU*) → प्रियंवदः “one who speaks kindly”
- स्वश् (*Aṣṭādhyāyī* 3.2.28). This suffix also causes the affixation of the augment सुम्, but the root takes the form that it takes in the present system, i.e., reduplication and present-stem forming suffixes are used.
 - जन- + एज्- + स्वश् ((+ सु) → जनमेजयः “making the people tremble”
 - पण्डित- + मन्- + स्वश् ((+ सु) → पण्डितमन्यः “one who thinks he is learned”
- क्तिन् (*Aṣṭādhyāyī* 3.2.58). A zero affix, which causes the root to take its zero-grade form. Taught for a small class of words.
 - ऋतु- + यज्- + *KviN* (+ सु) → ऋत्विक् “one who sacrifices at the proper moment”
- क्तिप् (*Aṣṭādhyāyī* 3.2.61). A zero affix, which causes the root to take its zero-grade form; in addition, if the root is a light syllable, the augment *t* is affixed to it in order to make the root-syllable heavy.
 - शत्रु- + जि- + क्तिप् (+ सु) → शत्रुजित् “victorious over enemies” (शत्रून् जयति)
- ण्वि (*Aṣṭādhyāyī* 3.2.62). A zero affix, which causes the root to take its “Brugmann” form (induced by *N*).
 - अर्ध- + भज्- + ण्वि (+ सु) → अर्धभाक् “getting half a share” (अर्धं भजते)

§50.4. Adpositional compounds

Adpositional compounds are what I call अव्ययीभावः, compounds that “become indeclinable” and function as adverbs. Like many other adverbs, they take the form of a neuter singular nominal. In these compounds, the first member is usually an indeclinable word—often an adposition (कर्मप्रवचनीयः)—and the second word is a nominal form that functions as its dependent. Thus, in this type of compound, the first member is the syntactic head.

Sometimes such compounds can be analytically paraphrased as two independent words, that is, as a कर्मप्रवचनीयः governing a case-form of the dependent:

- आब्रह्म ← आ ब्रह्मणः “starting from Brahma”

Most often, however, these compounds cannot be analytically paraphrased in their own words (अस्वपदविग्रहः). This is because the indeclinable first member does not generally govern a case-form, or does not govern one in the given sense. अव्ययीभावः compounds with प्रति, for example, generally have a *distributive* sense, whereas as an adposition, प्रति most often conveys the sense of a goal of motion.

- प्रतिदिनम् ← दिने दिने “every day”

In many other cases, other paraphrases must be found:

- यथाशक्ति ← शक्तिम् अनतिक्राम्य ”in proportion to one’s power”
- उपनदि ← नद्याः समीपे “near the river”
- अनुज्येष्ठम् ← ज्येष्ठानुपूर्वेण ”in order of age”

§5I. Coordinative compounds (द्वन्द्वः)

Compounds that have multiple heads are called “coordinative” compounds or द्वन्द्वाः. There are two types of such compounds.

A **countable** or additive coordinative compound (इतरेतरद्वन्द्वः) is one where the grammatical number of the resulting compound is a function of the grammatical number of each of its constituents. The grammatical gender of the compound as a whole is usually that of the final member of the compound.

- राम- + लक्ष्मण- → रामलक्ष्मणौ “Rāma and Lakṣmaṇa”

- अश्व- + गज- + रथ- → अश्वगजरथा: “horses, elephants, and chariots”

The standard *analysis* (विग्रहः) of such compounds involves inserting the coordinating particle च after each member, hence रामश् च लक्ष्मणश् च, or अश्वश् च गजाश् च रथाश् च.

A **collective** coordinative compound (समाहारद्वन्द्वः) refers to its constituents as forming a collective, and hence the compound as a whole has singular morphology. Usually these compounds are neuter.

- जङ्गम- + स्थावर- → जङ्गमस्थावरम् “mobile and immobile”

The analysis of these kinds of compounds is identical to that of *itarētaradvandvāḥ*, except with the addition of समाहारः or समाहृतः, hence *jaṅgamāni ca sthāvarāṇi ca samāhṛtāni*, or *jaṅgamāni ca sthāvarāṇi ca tēṣāṃ samāhārah*.

§52. Exocentric compounds (बहुव्रीहिः)

Exocentric compounds, in contrast to endocentric compounds, are those wherein the *head* is not a member of the compound. The compound as a whole gets its syntactic category from its head, and in many cases, it qualifies the head as an adjective, hence it also receives its gender and number from its head. These compounds are thus “headless.” They will always **bold** fail the above-mentioned test of endocentricity: if *x-y* represents a compound, the answer to the question “is *x-y* either an *x* or a *y*?” will be **no**. Thus, to use English examples, the following are exocentric: *skinhead* (not a head, but a person); *barefoot* (not a foot, but a person); *pale-faced* (not a face).

NOTE: As the last example shows, exocentric compounds in English often use the suffix *-ed*. This is not a past passive participle (there is no verb “pale-face”) but a compound-final suffix, which is called समासान्तप्रत्ययः in Sanskrit. Exocentric compounds in Sanskrit often use such suffixes as well, as noted below.

The Sanskrit term for these kinds of compound is बहुव्रीहिः, which is, like तत्पुरुषः, an instance of the grammatical phenomenon it names: a बहुव्रीहिः is not “a lot of rice,” but a *man* who has “a lot of rice.” In contrast to the preceding categories of compounds, the formation of exocentric compounds can be thought of as the formation of an adjectival *stem*.

Typically the constituents of an exocentric compound are *coreferential*, that is, they refer to the same thing. But there are exocentric compounds whose constituents are not coreferential (called व्यधिकरणबहुव्रीहयः), which will be exemplified below. They are also commonly analyzed using *relative clauses*, a strategy that will be followed in the analyses below; the relative pronoun supplies the *gender* and *number* of the head noun, which in these examples will always be cited in the nominative (प्रथमा) case.

- बहुर् व्रीहिः यस्य सः → बहुव्रीहिः “one who has a lot of rice” (*samānādhikaraṇabahuvrīhiḥ*)
- नीलः कण्ठः यस्य सः → नीलकण्ठः “one whose neck is dark blue” (*samānādhikaraṇabahuvrīhiḥ*)
- नीलम् अम्बरम् यस्य सः → नीलाम्बरः “one who wears a dark cloak” (*samānādhikaraṇabahuvrīhiḥ*)
- व्यस्तं विश्वं याभिः ताः → व्यस्तविश्वाः “those that have put the universe asunder” (*samānādhikaraṇabahuvrīhiḥ*)
- महान् अनुभावः यस्य सः → महानुभावः “one whose dignity is great” (*samānādhikaraṇabahuvrīhiḥ*)
- दत्तं सर्वस्वं येन सः → दत्तसर्वस्वः “one who has given everything he owns” (*samānādhikaraṇabahuvrīhiḥ*)
- चक्रः पाणौ यस्य सः → चक्रपाणिः “one in whose hand there is a discus” (*vyadbhikaraṇabahuvrīhiḥ*)

The **gender** of the final word will sometimes change in a *bahuvrīhiḥ* compound. That is, a word that standardly appears in one gender might have to appear in another gender if it is

final within a *bahuvrīhiḥ* compound that describes something or someone of that gender. This is a very useful way of recognizing *bahuvrīhiḥ* compounds, provided that you have actually learned the gender of the final noun!

- दत्तानि रत्नानि येभ्यः ते → दत्तरत्ने: “[men] to whom jewels have been given” (रत्नम् is neuter)
- पीतं जलं येन सः → पीतजलः “[a man] by whom water has been drunk” (जलम् is neuter)
- मृताः नराः यस्मिन् तत् → मृतनरम् “[a family] in which the men have died” (नरः is masculine)

How do we know what form a word will take at the end of a *bahuvrīhiḥ* compound if it is used in a gender different from the one with which it is usually associated? Masculine and neuter words usually use the same stem, so the only challenge is remembering the corresponding masculine or neuter endings, which may indeed be a challenge for classes of nouns that are typically associated with one gender (for instance nominal stems ending in *-s* are almost always neuter, and they have different forms in the nominative-accusative of the masculine). Feminine words, however, usually use a different stem, formed with a feminine stem forming suffix (स्त्रीप्रत्ययः; see above). Going from a feminine to a masculine-neuter stem or *vice versa* is sometimes, but not always, as simple as shortening (*Aṣṭādhyāyī* 1.2.48) or lengthening the stem vowel:

- चित्रा गौः यस्य सः → चित्रगुः “[a man] who has a brindled cow” (गौः is feminine)
- कौशाम्ब्या निष्क्रान्तः → निष्कौशाम्बिः “[a man] who has left Kauśāmbī” (कौशाम्बी is feminine)
- दत्ता माला यस्मै सः → दत्तमालः “[a man] to whom a garland has been given” (माला is feminine)
- दत्ता हस्तः यस्यै सा → दत्तहस्ता “[a woman] to whom a hand has been given” (हस्तः is masculine)

No shortening takes place, however, if a feminine word is not formed with a feminine stem forming suffix:

- अतिक्रान्ता श्रीः यस्य सः → अतिश्री “[a man] who has great prosperity” (श्रीः is feminine)

In general, however, one must know which of the feminine stem forming suffixes to use in order to convert a masculine/neuter stem into a feminine stem. There are only two common ones: *-ā-* and *-ī-*.

- चन्द्र इव मुखम् यस्याः सा → चन्द्रमुखी “[a woman] whose face is like the moon” (मुखम् is neuter)

Some exocentric compounds have a word as their first member which is a “bound form,” in that it cannot typically be used as an independent word. There are several subvarieties of these compounds. One, called प्रादिबहुव्रीहयः, have a preverb as their first member. Since they cannot be expressed as independent words in the analysis of the compound, they are usually “expanded” into a form that can be used as an independent word.

- उत्कण्ठः ← उन्नतः कण्ठः यस्य सः “one whose neck is uplifted” (almost always in anticipation)

Another variety of exocentric compounds with bound forms as first members are **negative** compounds (नञ्बहुव्रीहयः), which, as their Sanskrit name suggests, are formed with the negative particle नञ्. This particle is usually expanded in the analytic phrase to a *nañ-tatpuruṣaḥ*, namely, अविद्यमानः “non-existing.”

- अगृहः ← अविद्यमानः गृहः यस्य सः “one who has no home, homeless”

Finally, there are **sociative** compounds (सहबहुव्रीहयः), whose first member can be स-, which is expanded to सह with an instrumental case-form in the analytic expression, and often expressed with the verb वर्तते.

- समातापितृकः ← सह मातापितरौ वर्तते “together with his mother and father” (for the form मातापितृ- see *Aṣṭādhyāyī* 6.3.25).

§53. Compound-final suffixes (समासान्तप्रत्ययाः)

Under certain conditions, a suffix is added to the final member of a compound. Thus the stem of the word *on its own* may differ from its stem when it occurs at the end of a compound. These suffixes are called “compound-final” (समासान्ताः) (*Aṣṭādhyāyī* 5.4.68).

When the word राजन्- “king,” अहन्- “day” or सखि- “friend” is final within a तत्पुरुषः, they become राज-, अह-, and सख- (*Aṣṭādhyāyī* 5.4.91), with a change to the masculine gender in the case of अहन्- (normally neuter).

- महाराजः ← महांश् च स राजा च “great king”
- ब्राह्मणसखः ← ब्राह्मणस्य सखा “friend of a Brahmin”
- उत्तमाहः ← उत्तमं च तद् अहश् च “the final day”

When रात्रि- “night” is preceded by the words अहन्- “day,” सर्व- “entire,” a word for a part (e.g., पूर्व- “earlier”), a numeral, or the word पुण्य-, then it becomes रात्र- (*Aṣṭādhyāyī* 5.4.87) with a change to the masculine gender; similarly the word अहन्- becomes अह्- under the same circumstances *Aṣṭādhyāyī* 5.4.88:

- पूर्वरात्रः ← पूर्वा रात्रिः “the early part of the night”
- पञ्चरात्रः ← पञ्च रात्रयः “five nights”
- अपराहः ← अपरम् अहः “the latter part of the day, evening”

In general, *bahuvrīhiḥ* compounds can take the suffix *-ka-* (feminine *-ikā*) which will very often make the noun easier to inflect.

NOTE: Pāṇini calls this suffix *kaP* (*Aṣṭādhyāyī* 5.4.153). The feminine of such forms is made by substituting *-aka-* with *-ikā-* by *Aṣṭādhyāyī* 7.3.44.

- तत् आत्मा यस्य तत् → तदात्मकम् “[a thing] of which the essence is that”
- बह्वी श्रीः यस्य सः → बहुश्रीकः “[a man] who has great prosperity”

- अविद्यमानं मनः यस्य सः → अमनस्कः “without the mind”
- जीवन्तौ पितरौ यस्य सः → जीवत्पितृकः “[a man] whose parents are still alive”

Chapter 8

Abbreviations

- १ प्रथमा विभक्तिः (nominative case)
- २ द्वितीया विभक्तिः (accusative case)
- ३ तृतीया विभक्तिः (instrumental case)
- ४ चतुर्थी विभक्तिः (dative case)
- ५ पञ्चमी विभक्तिः (ablative case)
- ६ षष्ठी विभक्तिः (genitive case)
- ७ सप्तमी विभक्तिः (locative case)
- सं. सम्बोधनम् (vocative)
- एक. एकवचनम् (singular)
- द्वि. द्विवचनम् (dual)
- बहु. बहुवचनम् (plural)
- परस्मै. परस्मैपदम् (active)

आत्मने. आत्मनेपदम् (middle)

प्र. प्रथमपुरुषः (third person)

मध्य. मध्यमपुरुषः (second person)

उत्त. उत्तमपुरुषः (first person)