Sanskrit: The Indo-European Perspective

Harald Wiese

January 27, 2020

Preface

Students of Sanskrit can choose among several good manuals, for example those by Deshpande [2007], Egenes [2011, 2012], Goldman and Goldman [2011], Harding Maurer [2009], Otter [2017], Ruppel [2017], or Stiehl [2011]. Whichever they may choose, learning Sanskrit is a daunting task. Indeed, the author of one of those text books, Robert Goldman, mentions "the intricacies and frustrations of *sandhi* and the other terrors of Sanskrit" inflicted on successive student generations (Goldman and Goldman [2011, p. xix]). This book has been written in order to reduce these terrors of Sanskrit.

This book is *not* an alternative textbook for learning Sanskrit. Instead, it is to accompany these textbooks and written in the hope to make Sanskrit learning easier by explaining words and grammatical forms from an Indo-European point of view. Consider, for example Old Indian *ad* which means "to eat", but is also historically related to both English *eat* and New High German *essen*. There was an Indo-European word **ed* that branched out into all these words over some millennia. Even e. *tooth* and nhg. *Zahn* stem from **ed* (or, taking the laryngeal perspective, **Hed*).

I may well fail in my endeavour to bring Sanskrit and Indo-European studies closer to each other once again. After all, Jakob Wackernagel [1896, p. LXXIV], who wrote "Altindische Grammatik" more than hundred years ago, had a similar aim in mind:

> "... der Verfasser würde sich freuen, wenn es ihm gelänge ... die in den letzten Jahrzehnten gelockerten Bande zwischen Sprachwissenschaft und Sanskritphilologie wieder fester zu knüpfen"

While Wackernagel did put together the (in his time) state-of-the-art Indo-European outlook on Old Indian, he did not manage to influence language teaching, at least when judged from modern textbooks of Sanskrit. A case in point is Deshpande [2007, back cover], who hopes to simplify "the process of learning Sanscrit, by dissociating this language-learning process from the heavy burdens imposed, both by the tradition of Indo-European linguistics and the tradition of indigenous Sanskrit grammarians in India." In my mind, the Indo-European perspective should be seen as helpful, rather than an extra burden. In this vein, this manual has a clear didactic purpose. It has been written to help the author and his fellow students to make the best didactic use of the Indo-European perspective on Sanskrit.

By the didactic purpose of this book, the knowledge of other Indo-European languages is not important. In particular, knowledge of Latin and Greek is not vital. We often use the Latin or Greek words found in modern English or German. We focus on Sanskrit, but briefly also mention Middle Indian languages. While Vedic grammar is ignored, Vedic vocabulary is occasionally mentioned. Accents (important in Vedic) are regularly

ignored. German words, and more rarely und unsystematically, French, Italian or Irish words are adduced. The reasons for including words are often rather subjective.

Fortunately, new Wackernagels (of sorts) have been written by Kobayashi [2004], Kümmel [2014], and Goto [2013]. Readers interested in current state-of-the-art Indo-Aryan or Indo-European phonology and morphology had better turn elsewhere. Thanks and apologies for not citing appropriately are due to all the above-mentioned authors and also to many other authors[1]of textbooks/grammars/dictionaries/articles: I copy Brugmann [2009, p. V]'s excuse: "Bei jeder Einzelheit anzugeben, wer über dieselbe gehandelt habe und wer der erste Urheber der von mir vorgetragenen Auffassung sei, schien mir einerseits durch den Zweck des Buches nicht geboten, andererseits aber wiederum durch die Raumverhältnisse ausgeschlossen." I sometimes divert from this general practice and would be grateful if I am not asked for the general rule underlying these exceptions.

Heartfelt thanks are due, of course, to Sadananda Das, my Leipzig Sanskrit teacher and friend whose perfect command of Sanskrit is well beyond reach even after studying 10 Sanskrit textbooks and 5 manuals on Sanskrit as an Indo-European language.

This manual surely contains many mistakes. The author would be most grateful if some of these were pointed out to him. Also, additional material and other suggestions to present the subject matters in a different manner are most welcome. I like to thank Kerstin Szwedek for many helpful hints. Katharina Lotzen undertook the laborious work of producing the index. Maria Näther and Alexander Singer proved very efficient with LaTex and Lyx. Jan Warzok carefully read a later version.

Ideally, and borrowing from Kobayashi [2004, p. 1], the current author enjoys, and hopes that other learners of Sanskrit may also enjoy, "a conspiracy-like tendency behind apparently unrelated phenomena".

Leipzig, December 2019 *Harald Wiese*

[1]In many different ways, I have made use of Beekes [1995, 2010], Brugmann [2009], Burrow [2001], Clackson [2007], Dudenredaktion [2006], Dunkel [2014a,b], Fortson IV [2004], Hock [1991], Kluge [2002], Kroonen [2013], Lazzeroni [1998], Lubotsky [2018], Macdonell [2010], Rix [2001], Schmitt-Brandt [1998], Sihler [1995, 2000], Szemerenyi [1989], de Vaan [2008], Watkins [1998], Zentralinstitut für Sprachwissenschaft [1997], Ziegler [2012], and, of course, Mayrhofer [1978, 1992, 1996]. With respect to Middle Indian, I have benefitted from Hinüber [1986], Masica [1991], Oberlies [2003], and Woolner [1996].

Contents

A. Introduction

A.1. Historical highlights

The idea of this manual is to make Sanskrit easier to learn by taking the Indo-European perspective. This allows to link Sanskrit to other languages possibly known to students and also to improve the understanding of Sanskrit peculiarities. In taking the Indo-European point of view, we are not undertaking anything new or innovative, of course. Indeed, Indo-European and Sanskrit studies were very close in the beginning of these subjects in the western world. Here is a short history.

Sir William Jones

Perhaps, both western Indology and Indo-European studies have been initiated by Sir William Jones (1746-1794) who learnt many different languages even before going to India (which was under British colonial rule) as a judge. It was only there that he came into contact with Sanskrit, relevant to him as the language of ancient law texts. In 1786, Jones gave a presentation at the Royal Asiatic Society in Calcutta. He notes that Sanskrit is very similar to Latin and Greek. These similarities cannot be explained by mere chance. Jones' conclusion: All three languages stem from a common language which may not be in existence any more. Apart from these languages, Jones conjectures that Gothic and Celtic languages are also related.

Friedrich von Schlegel

In 1808, Friedrich von Schlegel publishes the monograph "Über die Sprache und Weisheit der Indier" (On the language and wisdom of Indians). Von Schlegel's 300 pages strong book draws German and European attention to Sanskrit and also to the hypothesis put forward by William Jones whom Schlegel mentions in the very first sentence of the introduction. Von Schlegel (1808) then expresses the hope to kindle the love for Indian language and philosophy in Germany. He suggests a new renaissance. In the 15th and 16th centry, the study of Greek language and culture grew prominent. Similarly, the Indian cultural heritage should be made fruitful for the presence. The new renaissance (with Yoga, Hare Krishna and Bollywood) might not have resonated well with Schlegel's aspirations. However, indology as a university subject gathered momentum and Indo-European linguistics was exercised in several (predominantly German) universities, in particular in Berlin, Jena, Halle, and Leipzig.

Franz Bopp

Within Schlegel's monography, the third chapter of the second book argues that "die innere Structur der Grammatik oder die vergleichende Grammatik" would be best suited to clarify Jones' idea. Here, "vergleichend" means "comparative"–the focus is on juxtaposing words in different languages. It is Franz Bopp who takes up Schlegel's suggestion in a systematic manner. In 1816, he publishes "Über das Conjugationssystem der Sanskritsprache in Vergleichung mit jenem der griechischen, lateinischen, persischen und germanischen Sprache". In 1821, Bopp is offered the chair of "Orientalische Litteratur und allgemeine Sprachkunde" in Berlin. The range of languages accepted as Indo-European is steadily increasing. Bopp's major work is called

> Vergleichende Grammatik des Sanskrit, Zend, Griechischen, Lateinischen, Litauischen, Altslavischen, Gotischen und Deutschen

While Bopp is considered the founder of Indo-European studies, he focused on comparative work. He did not express sound laws.

August Schleicher

While Bopp can be credited with the successful application of the comparative method, sound laws and reconstruction of the Indo-European language were persued by August Schleicher (1821 - 1868), professor in Prag and Jena, and August Friedrich Pott (1802 – 1887), professor in Halle. Schleicher's approach is still relevant today. He introduced the convention to indicate reconstructed forms by an asterisk. Also, he was the first to use family trees (language trees) to visualize how languages can be traced back. The title of Schleicher's main work is

> Compendium der vergleichenden Grammatik der indogermanischen Sprachen. Kurzer Abriß einer Lautlere der indogermanischen Ursprache, des Altindischen (Sanskrit), Alteranischen (Altbaktrischen), Altgriechischen, Altitalischen (Lateinischen, Umbrischen, Oskischen), Altkeltischen (Altirischen), Altslawischen (Altbulgarischen), Litauischen, und Altdeutschen (Gotischen)

Thus, an Indo-European "Ursprache" (proto-language) was to be reconstructed. Schleicher was optimistic about the possibility of this project and even composed an Indo-European fable.

Karl Brugmann

Building on the work done by Schleicher and Bopp, the next major steps were done by the Leipzig school. It consisted of a group of scholar grouped around Schleicher's pupil August Leskien (1840 – 1916), a renowned slavicist, and the younger philologist Karl Brugmann (1849 – 1919). They made Leipzig the world-wide center of Indo-European studies from about 1890 to 1920. Fortson IV [2004, p. 9] acknowledges: "By the dawn of the twentieth century, a picture of reconstructed [Indo-European] had emerged that was quite similar to the one that is presented" in that author's textbook.

The researchers from the Leipzig school are also known as the "Junggrammatiker" (neogrammarians). They earned this slightly derogative term in their quarrel with Friedrich Pott from Halle and Brugmann's teacher Georg Curius. The bone of contention: The older researchers distinguished between regular and irregular sound changes. In contrast, the younger generation insisted on the "Ausnahmslosigkeit der Lautgesetze" (sound laws valid without exception).

Ferdinand de Saussure

An important chapter for both indology and Indo-European studies was written by Ferdinand de Saussure (1857-1913). The young Swiss went to Leipzig from 1876 to 1880. Being 21 years of age, he published the "Mémoire sur le système primitif des voyelles dans les langues indo-européennes". De Saussure claimed the existence of so-called laryngeals for Indo-European. His arguments build on some peculiarities of the Old Indian verbal classes. While his revolutionary ideas took quite a while to gain acceptance, laryngeal theory is accepted today and will play a very important role in this book. It is a pity that de Saussure did not live to learn about Hittite, a language discovered in Anatolia, some 150 kilometers east of Ankara. After being deciphered in 1917, the Polish linguist Jerzy Kurylowicz (1895 - 1978) discovered Indo-European words in Hittite that have a *h*-sound at the very place where de Saussure expected a laryngeal! After leaving Leipzig, de Saussure went to Paris and finally became professor in Geneva. Nowadays, de Saussure, who made a ground-breaking discovery in Indo-European linguistics, is known to many as the founder of modern linguistics.

A.2. Language trees

The language family whose existence has been shown by Franz Bopp is called Indo-European and "Indogermanisch", the latter term being used in German speaking countries. Both terms make sense. "Indogermanisch" refers to languages between India (Sanskrit) and Iceland (old Icelandic as a Germanic language) while "Indo-European" makes clear that nearly all European languages (in fact, without Finnish, Estonian, and Basque) together with Indo-Iranian languages are cognate. However, both terms are not quite correct because Tocharian has been identified as an Indo-European language which was spoken in (what is nowadays) China.

It is helpful to follow August Schleicher and think in terms of languages trees. The Indo-European language tree is shown in fig. A.1. It shows the most important language families that stem from Indo-European. We can zoom in on any specific branch. For example, the Germanic language tree is depicted in fig. A.2.

Of special relevance for this manual, is, of course, the Indo-Iranian subtree. Old Indian (Sanskrit) can be Vedic or Classical Sanskrit. There are several Middle Indian languages,

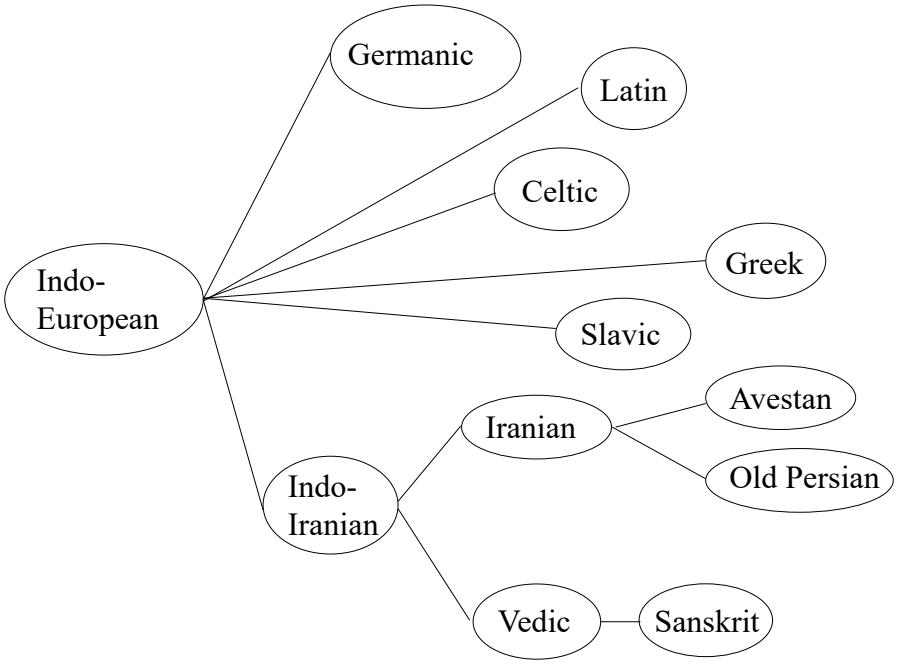

Figure A.1.: The Indo-European Language Tree

the oldest one being Pali which was primarily used in Buddhist scriptures. Other Middle Indian languages are Śaurasenī, Māghadhī, or Māhārāṣṭrī. These languages are normally addressed as Prakrit or Prakrits. The sound laws that differentiate Middle Indian (mi.) from Old Indian (oi.) are complicated and differ between the Middle Indian languages. We mostly use Pali (pa.) when we look for Middle Indian examples, but sometimes also Prakrit (pkt.). While Classical Sanskrit (in the sense of Pāṇini) is not a mother tongue of Pali or of (a) Prakrit, it is surely more conservative than these Middle Indian languages in most respects. However, one can find examples where Pali is more conservative than Vedic. Neither Vedic nor Sanskrit are mother tongues of Pali. But they are close to a mother tongue one tries to reconstruct. Many new Indian languages exist, such as Hindi, Bengali, Marathi, Gujarati, and others.

A.3. Sound laws

The Junggrammatiker's dictum was the "Ausnahmslosigkeit der Lautgesetze" (regularity principle). In their own words:

> Aller lautwandel, soweit er mechanisch vor sich geht, vollzieht sich nach ausnahmslosen gesetzen, d.h. die richtung der lautbewegung ist bei allen angehörigen einer sprachgenossenschaft, außer dem fall, daß dialektspaltung eintritt, stets dieselbe ...

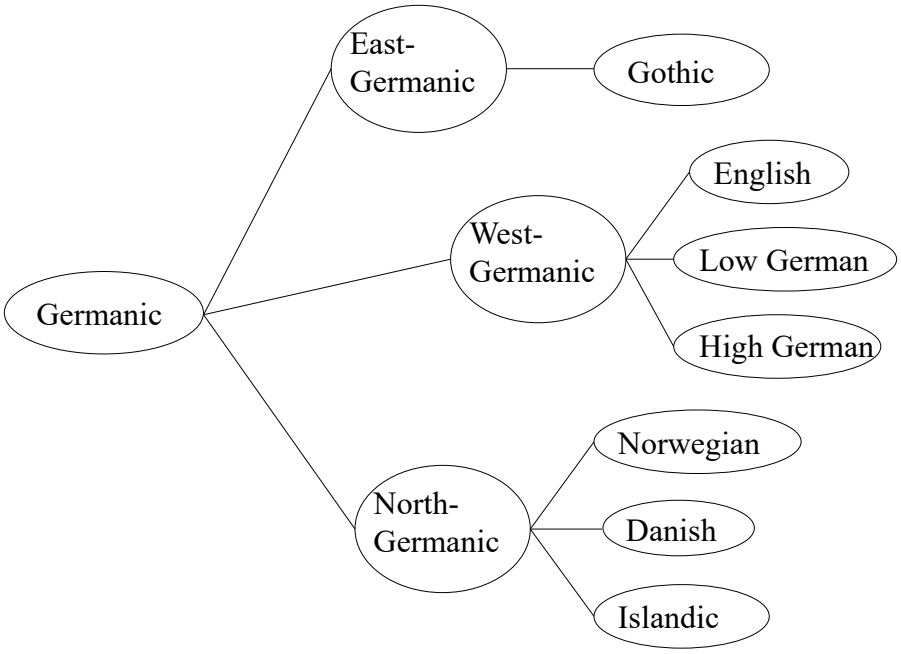

Figure A.2.: The Germanic Language Tree

Sound changes that are not mechanical come under two headings. First, levelling means that a pattern gets transferred from one occurrence to another one. Second, foreign words or loan words travel from another language.

The Junggrammatiker also had a different view on the Indo-European vowel system. Following Franz Bopp, August Pott and Georg Curtius assumed that the Indo-European language knew three short vowels, *a, i,* and *u,* also found in Sanskrit. The youngsters contradicted. They opined that the Indo-European vowels *a, e,* and *o* collapsed into Indo-Iranian *a*, while Old Greek preserved the Indo-European vowels particularly well. Their argument was based on the Ausnahmslosigkeit. If Sanskrit *a* were to reflect the Indo-European state of affairs, sound laws should tell under which conditions Indo-European *a* turned into Greek *a, e,* and *o.* However, such sound laws are not to be found. Hence, the Leipzig-school researchers claimed

$$\text{ie. } a/e/o \quad \rightarrow \quad \text{oi. } a$$

where ie. means Indo-European and oi. refers to Old Indian (or Sanskrit).

As in the above example, we consistently use arrows to indicate that one word goes back to, or develops into, another one. For example,

$$\text{oi. } \bar{u}dhar \quad \leftarrow \quad \text{ie. } {}^{*}\bar{u}dher \quad \rightarrow \quad \text{e. } udder \quad \sim \quad \text{nhg. } Euter$$

is to be understood in the following manner:

◇ There was once an Indo-European word that we reconstruct as $\bar{u}dher$ (the asterix * signals a reconstructed form).

- ◇ It developed into Sanskrit (or Vedic) *ūdhar*.
- ◇ In a parallel fashion (see fig. A.1), the Indo-European word is also present in Germanic languages, such as New High German (nhg.) *Euter* or English (e.) *udder*. The symbol $\sim$ is used for cognate words where we have neither nhg. *Euter* $\rightarrow$ e. *udder* nor the other way around. This is clear from fig. A.2 above.

All the sound laws assumed in this book are of the above diachronic sort. Specific "rules" get applied in a determined sequence. The use of language trees and the neogrammarian regularity principle have been under attack from different perspectives. Cirticism against the simple neogrammarian viewpoint has been raised from dialectology, sociolinguistics, and/or constraint-based approaches. While dialectology (see Hock [1991, chapter 15]) and sociolinguistics (see Hock [1991, chapter 20]) have their respective merits, I think that they are best left aside in a book like this one. As Hock [1991, p. 660] summarizes, "the neogrammarian regularity principle still remains a heuristically useful and important criterion for historical linguistic research." Similarly, the current author does not negate the importance of constraint-based approaches where one would rule out certain changes rather than letting them happen and providing an "antidote". Oftentimes, these approaches may be both simpler and closer to the historical facts. However, it is not easy to decide which description is more accurate and, more to the point for my endeavour, which descriptions are easier to grasp and to memorize.

A.4. Analogy and levelling

Sound laws consist of regularly applied rules of change. Often, they lead to irregular forms in comparison to some dominant paradigm. Then, "analogical change" (short: "analogy") or "levelling" is applied against the sound laws to restore a paradigmatic regularity. We quote from Sihler [2000, p. 73]:

- ◇ By analogy, one can understand "the influence of one form or class of forms on the pronunciation of another".
- ◇ Levelling is "the elimination (or reduction) of functionless alternation".

We will often use the word "analogy" to refer to these kind of changes. Sometimes, we apply (what is also called proportional) analogy according to the following pattern:

a	with property X:	b
just as		
A	with property X:	?

where $? = B$ is the "solution". Alternatively, we use this pattern (most suitably for levelling):

	a	
influenced by	B	with property X
turns into	?	with property X

with *A* as the expected answer.

A.5. Back-formation

Sanskrit is full of words composed from other words. Sometimes, the speakers misunderstood a word as a specific compound and falsely reconstructed constituents of that word. A related example from English is the tongue-in-cheek advice: "Be *alert*, the world needs lerts." Here, *alert* has been "misunderstood" as *a lert*.

This phenomenon is called back-formation. In our example, the formation consists of adding the indefinite article *a* to a noun like *monkey* yielding *a monkey*. Of course, from *a monkey*, we can safely assume a noun *monkey*. This is called back-formation. If we apply the same procedure (leaving out the indefinite article) to *a lert*, we obtain the noun *lert*. Indeed, back-formation is mostly used for wrong applications of these procedures. In our example, we may depict this procedure by

a monkey	with noun:	*monkey*
just as		
a-lert	with noun	*lert*

A prominent example for back-formation in Sanskrit concerns the negating particle *a* (which is cognate with English *un* as in *un*believable). We have

◇ *suras*, m. ("god") and

◇ *asuras*, m. ("demon")

However, the second does not originate from the first but the other way around, by back-formation:

a-dêvas, m. ("demon")	with negating *a* from:	*dêvas*, m. ("god")
just as		
a-suras, m. ("demon"), falsely	with negating *a* from:	*suras*, m. ("god")

A.6. Conventions

The convention to quote nouns depends on the type of noun:

◇ Nouns where the stem and the nom. sg. coincide:

- feminine nouns like *dêvā* ("goddess")
- feminine nouns like *nadī*
- athematic neuter nouns like *tapas* ("heat") or *havis* ("offering")

◇ Thematic nouns other than the *dêvā* or *nadī* type:

- masculine nouns like *dhūrta* ("rogue")

- masculine nouns like *muni* ("sage")
- feminine nouns like *mati* ("mind")
- feminine nouns like *camū* ("army")
- feminine monosyllabic nouns like *dhī* ("intellect")
- feminine monosyllabic nouns like *bhū* ("earth")

but add the nom. sg. marker *s* whenever appropriate

◇ Neuter *a*-noun: *phalam* ("fruit") with the ending *m*

◇ Thematic *a*-adjectives on like *dhūrta* ("cunning") without the ending

◇ Athematic *an*-nouns:

- masculine *rāj-an* ("king")
- neuter *karm-an* ("act")

◇ Athematic *in*-nouns like masculine *yôg-in* ("devotee, yogi")

◇ In-between *tor*-nouns like masculine *nê-tar* ("leader")

◇ In-between kinship nouns:

- masculine *pit-ar* ("father")
- feminine *māt-ar* ("mother")

◇ Athematic nouns ending in long diphthong:

- *rāy*, m./f. ("wealth")
- *glāv*, m. ("moon")

With these conventions in place, genders need not always be indicated.

The meaning is indicated by inverted commas. In order to economize on inverted commas, I will use the notation

◇ "not going → tree" rather than

◇ "not going" → "tree"

and similar with commas between between words.

A.7. Overview

This is our plan for the book:

Chapter "sound laws"

The next chapter deals with the most important sound laws for Sanskrit and also, to a minor degree, for other languages such as Latin, Greek, English, and High German. The reader is not expected to memorize all laws. Often, some telling examples may be as helpful. Also, we later repeat the sound laws when needed or refer to them.

Chapter "grammar: verbal system"

The chapters on grammar tries to make sense of an otherwise bewildering multitude of forms. In these chapter, we will focus on Sanskrit forms and will leave examples from other languages aside. The grammar chapter on the verbal system focuses on the ten verbal classes and on the forms that are derived from ablaut.

Chapter "grammar: nouns and adverbs"

The second grammar chapter focuses on nouns and adverbs.

Chapter "etymological dictionary"

The last chapter presents those Sanskrit words which have interesting cognates in other languages the typical reader may be expected to know. Thus, the focus is not on defending this or that reconstructed form but to build a net of words from different Indo-European languages.

A.8. Abbreviations

Cases

- ◇ abl. = ablative
- ◇ acc. = accusative
- ◇ dat. = dative
- ◇ gen. = genitive
- ◇ instr. = instrumental
- ◇ loc. = locative
- ◇ nom. = nominative
- ◇ voc. = vocative
- ◇ NVA = nom., voc., or acc.

Numbers

- sg. = singular
- pl. = plural

A.8.1. Genders

- f. = feminine
- m. = masculine
- n. = neuter

A.8.2. Languages

Germanic

- e. = English
- germ. = Germanic
- nhg. = New High German
- nlg. = New Low German
- oe. = Old English
- ohg. = Old High German

Indo-Aryan

- hi. = Hindi
- mi. = Middle Indian
- oi. = Old Indian
- pa. = Pali
- pkt. = Prakrit
- skt. = Sanskrit (used for mi. words)
- ved. = Vedic

Others

- ie. = Indo-European
- it. = Italian
- fr. = French
- gr. = Greek
- lat. = Latin
- nir. = New Irish
- ogr. = Old Greek
- oir. = Old Irish
- olat. = Old Latin

A.8.3. Sounds

- asp. = aspirated
- C = consonants
  - $C^{\texttt{lab}}$ = labial consonants
  - $C^{\texttt{unlab}}$ = consonants other than labial ones
  - $C^{\texttt{vd}}$ = voiced consonants
  - $C^{\texttt{vl}}$ = voiceless consonants
  - $C^{\texttt{asp}}$ = aspirated consonants
  - $C^{\texttt{unasp}}$ = unaspirated consonants
- D = dentals
  - $D^{\texttt{vd}}$ = voiced dentals
  - $D^{\texttt{vl}}$ = voiceless dentals
- Di = diphthongs, also oi. such as $\hat{e}/ay/\hat{a}i/\bar{a}y$
- Fg = full-grade (vowel)
- hV = halfvowels
- H = laryngeals h_1, h_2, h_3
- L = liquids r, l
- Lg = lenghtened-grade (vowel)

- ◇ N = nasals $\dot{m}$, $\dot{n}$, $\tilde{n}$, $\dot{n}$, n, m
- ◇ P = plosives (stops)
  - $P^{\texttt{pal}}$ = palatal plosives
  - $P^{\texttt{unpal}}$ = plosives except palatal plosives
  - $P^{\texttt{vd}}$ = voiced plosives
  - $P^{\texttt{vd,unasp}}$ = voiced, unaspirated plosives
  - $P^{\texttt{vl}}$ = voiceless plosives
- ◇ R = resonants (L, N, hV)
- ◇ S = sibilants:
  - voiceless: $\acute{s}$, $\dot{s}$, s (palatal, cerebral, and dental, respectively)
  - voiced: $\acute{z}$, $\dot{z}$, z
- ◇ unasp. = unaspirated
- ◇ V = vowels
- ◇ $\bar{V}$= long vowels
- ◇ $\breve{V}$ = short vowels
- ◇ vd. = voiced
- ◇ vl. = voiceless
- ◇ Zg = zero-grade (vowel)
- ◇ $\dot{p}$ = voiceless interdental spirant

A.8.4. Sound laws

- ◇ $\boldsymbol{a\bar{a}}$ = ie. to oi. vowel changes (p. 19)
- ◇ **AFP** = consonants in **A**bsolute **F**inal **P**osition (p. 45)
- ◇ **ASh** = (Bartholomae's) **A**spiration **Sh**ift (p. 37)
- ◇ **BA** = **B**ackward **A**ssimilation (p. 39)
- ◇ **CCl** = simplification of **C**onsonant **Cl**usters (p. 44)
- ◇ **Cer*n*** = **Cer**abralization of ***n*** (p. 42)
- ◇ **Cer*D*** = **Cer**abralization of **D**entals (p. 41)
- ◇ **CpL** = **C**om**p**ensatory **L**engthening, in particular

- **CpL** $\boldsymbol{d\acute{k}}$ for clusters $d\acute{k}$ (p. 51)
- **CpL** $\boldsymbol{r}$ for $\boldsymbol{r}$ (p. 50)
- **CpL** $\boldsymbol{s}$ for $\boldsymbol{s}$ (p. 50)
- **CpL** $\boldsymbol{z}$ for $\boldsymbol{z}$ (p. 47)

◇ **DA** = (Grassmann's) **D**e**A**spiration (p. 38)

◇ **DIPH** = **DIPH**thong before vowel and before consonant (p. 22)

◇ **D** $\boldsymbol{z}$ **D** = $\boldsymbol{z}$ sprouting or vanishing between **D**entals (p. 47)

◇ **GER** = first consonant shift (from ie. to **GER**manic) (p. 70)

◇ $\boldsymbol{hV}$ = **h**alf**v**owel before vowel, vowel before consonant (p. 20)

◇ **IE_SY_** $\boldsymbol{N}$ = **SY**llabic **N**asals, representation in some ie. languages (p. 66)

◇ **IE_SY_** $\boldsymbol{L}$ = **SY**llabic **L**iquids, representation in some ie. languages (p. 67)

◇ **Lar** = **Lar**yngeal sound laws (p. 52), in particular

- **Lar_** $\boldsymbol{CH}$, relating to laryngeals after a consonant and before a vowel (p. 52)
- **Lar_** $\boldsymbol{V}$, lengthening or producing vowels in the absence of syllabic nasals or liquids (p. 27)
- **Lar_SY**, relating to laryngeals after syllabic nasals and liquids (p. 28)
- **Lar_MTh** about a metathesis of a laryngeal and a half vowel (p. 28)

◇ **LAT_** $\boldsymbol{DD}$ = **LAT**in dental-plus-dental sequence (p. 70)

◇ **LAT_** $\boldsymbol{f}$ = **LAT**in $\boldsymbol{f}$ (p. 69)

◇ **LAT_** $\boldsymbol{sr}$ = **LAT**in $\boldsymbol{r}$ from ie. $\boldsymbol{s}$ (p. 70)

◇ **LAT_** $\boldsymbol{V}$ = **LAT**in sound laws concerning vowels and diphthongs (p. 65)

◇ **LAT_** $\boldsymbol{v}$ = **LAT**in $\boldsymbol{v}$ from ie. labiovelar g^w (p. 69)

◇ **LawOfMorae** = Middle Indian **Law of Morae** (p. 55)

◇ **L** $\boldsymbol{o}$ = (Brugmann) **L**engthening of ie. $\boldsymbol{o}$ in open syllable (p. 33)

◇ **MET_** $\boldsymbol{rSP}$ methathesis of a vowel with $\boldsymbol{r}$ in order to prevent the indicated sequence (p. 46)

◇ **MVS** = **M**ore **V**owel **S**andhi (p. 30)

◇ **NHG** = **N**ew **H**igh **G**erman sound laws, in particular

- **NHG_** $\boldsymbol{V}$, concerning vowels (p. 65)

- **NHG_*C***, concerning consonants (p. 71)
- **NHG_E**, where **N**ew **H**igh **G**erman proves more conservative than **E**nglish (p. 73)

◇ **OGR** = **O**ld **GR**eek sound laws (p. 68)

◇ **OGR_DA** = **O**ld **GR**eek (Grassmann) **D**e**A**spiration (p. 69)

◇ **PPal** = **P**rimary **Pal**atalization (p. 35)

◇ **RUKI** = cerebralization of *s* (p. 41)

◇ ***rl*** = dialectal confusion of *r* and *l* (p. 46)

◇ **SI** = **S**yllable- **I**nitial assimilations (p. 42)

◇ **SIB** = **SIB**ilant clusters and palatal-sibilant clusters (p. 43)

◇ **SPal** = **S**econdary **Pal**atalization (p. 36)

◇ ***sP(h)*** = Possible aspiration of ***P***losive after root-initial ***s*** (p. 46)

◇ **SY_Conf** = **SY**llabic **C**onflict (p. 27)

◇ **SY_*N*** = **SY**llabic **N**asals, representation in oi. (p. 25)

◇ ***sz*** = voiceless ***s*** and voiced ***z*** before plosives (p. 39)

◇ **VER** = **VER**ner's law (p. 75)

◇ **Vis** = **Vis**arga rules (p. 51)

◇ ***V*+*hV*** = emergence of vowel before the corresponding halfvowel (p. 21)

A.8.5. Grammatical terms

◇ ac./ag. noun = action/agent noun

◇ adj. = adjective

◇ athem. = athematic

◇ ātm. = ātmanêpada

◇ augm. = augment

◇ f.g. = full grade

◇ fut. = future tense

◇ B = borrowing, i.e., foreign or loan word

- ◇ impf. = imperfect
- ◇ impv. = imperative
- ◇ lev. = levelling
- ◇ l.g. = lengthened grade
- ◇ n.at. = not attested
- ◇ PAP = past active participle (*gatavant*)
- ◇ par. = parasmâipada
- ◇ pers. = person, personal
- ◇ pf. = perfect (*cakāra*)
- ◇ pf.P = perfect participle (*cakṛvans*)
- ◇ PN = proper name
- ◇ PPP = past perfect participle (*gata*)
- ◇ pres.P = present participle
- ◇ pres. tense = present tense
- ◇ PRII = present tense, imperfect, or imperative
- ◇ prim. end. = primary ending
- ◇ pron. = pronoun
- ◇ redup. = reduplicated
- ◇ sec. end. = secondary ending
- ◇ s.v. = sub verbo (i.e., dealt with in the dictionary)
- ◇ them. = thematic
- ◇ v. = verb
- ◇ w.-i. = word-initial
- ◇ w.-f. = word-final
- ◇ z.g. = zero grade
- ◇ $\surd$ = oi. root
- ◇ $\varnothing$ = no ending, no phoneme

- ◇ $\rightarrow$ = “develops into”
- ◇ $\leftarrow$ = “originates from”
- ◇ $\sim$ = “cognate with”

B. Sound laws

B.1. Indo-European phonemes

B.1.1. Vowels

It is assumed that Indo-European had short and long vowels, five each:

short vowels	a	e	i	o	u
long vowels	$\bar{a}$	$\bar{e}$	$\bar{\imath}$	$\bar{o}$	$\bar{u}$

While a, e, and o are always addressed as "vowels", i and u are often called halfvowels (see below). They are consonantic before vowels, written y and v, respectively. We abbreviate

- ◇ V = vowels
- ◇ $\bar{V}$= long vowels
- ◇ $\breve{V}$ = short vowels
- ◇ hV = halfvowels

I often use ie. $\bar{e}$ and ie. *He* interchangeably.

B.1.2. Consonants

Ie. consonants (abbreviated by C) might be

- ◇ P = plosives like t, $ǵh$, or k^w
- ◇ L = liquids r, l
- ◇ N = nasals n, m
- ◇ R = resonants (L, N, hV)
- ◇ S = sibilants: voiceless s
- ◇ hV = halfvowels y, v

The Indo-European plosives (P) can be tabled in this manner:

	vl./unasp.	vd./unasp.	vd./asp.
velars	k	g	gh
palatals	$\acute{k}$	$\acute{g}$	$\acute{g}h$
dentals	t	d	dh
labials	p	b	bh
labio-velars	k^w	g^w	g^wh

◇ The table exhibits five rows, according to the place in the mouth where the sudden release of the stream of air originates.

◇ Note the labio-velar sounds. They are written as velars with w, for example g^w or g^wh. k^w might have been pronounced similar to e. *queen*.

◇ The ie. palatal sounds were pronounced as k together with a y-sound. We write them as $\acute{k}$ etc.

◇ It is not quite clear whether the voiceless aspirated sounds (not present in the above table) existed in Indo-European. In any case, they were rather uncommon. Occurances of voiceless aspirated plosives are mostly explained by laryngeals (**Lar_*CH***) or by preceding s as in the oi. root *chid* or in oi. *sphira*.

Resonants comprise liquids, nasals, and halfvowels.

B.1.3. Halfvowels and syllabic nasals and liquids

i and u are vowels. But they are often called halfvowels because they turn into consonants before vowels, written y and v, respectively.

Inversely, nasals and liquids are consonant. However, between vowels they become syllabic, already in Indo-European times. These syllabic versions of nasals and liquids are denoted by circle below. The interplay of sounds that can become syllabic or consonantal is summarized in the following table:

	consonants	vowels
nasals	n	$\underset{\circ}{n}$
	m	$\underset{\circ}{m}$
liquids	r	$\underset{\circ}{r}$
	l	$\underset{\circ}{l}$
(half)vowels	y	i
	v	u

B.1.4. Laryngeals

We now turn to the so-called laryngeals. Since laryngeal theory is very helpful for understanding and learning Sanskrit, we will (most of the time) apply it. Laryngeals are not

covered above under the headings of "vowels" or "consonants" for two reasons. First, one does not really know how these sounds were pronounced. Second, the laryngeal development belongs to an early stage of Indo-European. It is assumed that in that early state, Indo-European did not know the vowels *a* or *o*. Instead, these vowels developed from *e* under the influence of an appropriate laryngeal. Most scientists assume three laryngeals:

◇ h_1 (which would leave *e* unaffected),

◇ h_2 (which has an *a*-quality) and

◇ h_3 (under whose influence *e* turns into *o*).

German speakers may enjoy the only Indo-European joke on offer:

◇ h_1 is called the "Kehlkopflaut" (which is what laryngeal means),

◇ h_2 the "Kahlkopflaut", and

◇ h_3 the "Kohlkopflaut".

These developments will be summarized below by the sound laws beginning with **Lar.** If we just write *H* without any index, the specific laryngeal is of no importance or not known.

Laryngeal theory needed a long time to get accepted. Nowadays, a great majority of Indo-European scholars accepts the laryngeal theory in one form or another. The most convincing argument for claiming laryngeals in Indo-European is due to Ferdinand de Saussure and deals with the verbal classes in Sanskrit.

B.2. Vowel sound laws, laryngeal sound laws, and vowel gradation

B.2.1. Old Indian *a* and *ā*

Nowadays, Sanskrit is mostly written in the devanagari writing or in the Latin transcription. Devanagari is based on consonant-plus-vowel signs where each consonant ends in *a* unless a marker tells otherwise. Why *a* and not *e* or *o*? Simply because *a* is much more frequent than any other sound. The reason for the preponderance of *a* is this: Indo-European *a, e,* or *o* (short or long) turn into old Indian *a*, short and long, respectively:

a ā

ie. $a/e/o \rightarrow$ oi. a

ie. $\bar{a}/\bar{e}/\bar{o} \rightarrow$ oi. $\bar{a}$

Examples for ie. *e* abound:

◇ The Indo-European word for "honey" is

$$\text{ie. } {}^{*}medhu \rightarrow \begin{cases} \text{oi. } madhu \\ \text{ogr. } methu \rightarrow \text{FW } methane \end{cases}$$

◇ The "middle one" is expressed by

$$\text{ie. } {}^*medhu \quad \rightarrow \quad \begin{cases} \text{oi. } madhya \\ \text{ogr. FW } Meso\text{-}potamia \\ \text{lat. } medius \end{cases}$$

For ie. *o*, let us point to

$$\text{ie. } {}^*ovi/h_3evi \quad \rightarrow \quad \begin{cases} \text{oi. } avi \\ \text{lat. } ovi \end{cases}$$

As an example for long vowels, consider

$$\text{ie. } {}^*r\bar{e}\acute{g} \quad \rightarrow \quad \begin{cases} \text{oi. } r\bar{a}jan \\ \text{lat. } r\bar{e}x \end{cases}$$

B.2.2. Half vowels

Along with the vowels *a*, *e*, and *o*, the Indo-European language as well as Sanskrit know the half vowels *i* and *u* that turn into consonants before vowels, written *y* and *v*, respectively. That is, we have

hV

$$\text{ie. } i \quad \rightarrow \quad \text{oi.} \begin{cases} i, & \text{bef. consonant} \\ y, & \text{bef. vowel} \end{cases}$$

$$\text{ie. } u \quad \rightarrow \quad \text{oi.} \begin{cases} u, & \text{bef. consonant} \\ v, & \text{bef. vowel} \end{cases}$$

In fact, the rules are a bit more complicated (see below), but ***hV*** in the present formulation is already very helpful. The hybrid nature of half vowels clearly shows in the sandhi rules:

◇ with *i*:

- *phalāni*, but *phalāny akhādat*
- *gacchāmi*, but *gacchāmy aham*

◇ with *u*:

- *bhavatu*, but *evam bhavatv iti* ("so let it be") where *iti* stands for 'end of quote'
- *jayatu*, but *jayatv āryaputraḥ* ("may my lord be victorious")

hV also clear shows up in these examples:

◇ *anvartha* ("appropriate") ← *anu* ("along") + *artha* ("purpose, sense, wealth")

◇ *vyartham* ("in vain") ← *vi* ("apart, away") + *artha* ("purpose, sense, wealth")

◇ *āśvaśva* ("to have fast horses") ← *āśu* ("fast") + *aśva* ("horse")

The "same" happens with long *ī* and long *ū*, for example

◇ *narī âikṣata* → *naryâikṣata* ("the woman saw")

◇ *bhvādigaṇa* ("*gaṇa* consisting of *bhū* etc.") ← *bhū* ("to be") + *ādi* ("beginning") + *gaṇa* ("cohort, flock, word group", see pp. 79)

Thus, we have the rules

$$\text{ie. } i/\bar{\imath} \quad \rightarrow \quad \text{oi.} \begin{cases} i/\bar{\imath}, & \text{bef. consonant} \\ y, & \text{bef. vowel} \end{cases}$$

$$\text{ie. } u/\bar{u} \quad \rightarrow \quad \text{oi.} \begin{cases} u/\bar{u}, & \text{bef. consonant} \\ v, & \text{bef. vowel} \end{cases}$$

Sometimes (the rules are not quite clear), ie. *ī* and *ū* appear as a sequence of *iy* or *uv*, respectively. Examples are

◇ *dhī*, f, ("intellect") has acc. sg. *dhiy-a-m* (compare with u.at. alternative *dhyam*).

◇ *bhū*, f, ("earth") has acc. sg. *bhuv-a-m* (compare with u.at. *bhvam*).

This change (see the first two lines) prevents awkward vowel clusters:

				example
V*+*hV	*PīV*	→	*PiyV*	*dhiy-a-m*
	PūV	→	*PuvV*	*bhuv-a-m*
	CRyV	→	*CRiyV*	*mr-iy-a-tê*
	CRvV	→	*CRuvV*	*āp-nuv-an-ti*

The last two lines may have a similar motivation. An example for the third line is *mr-iy-a-tê* ("he dies") which is a 4. class verb with root *mṛ* in contrast to the 4. class verb *kup-y-a-ti* ("he is angry") with oi. root *kup*). Passive forms provide further examples:

◇ *hr-iy-a-tê* ("he is taken") ← 1. class verb *hṛ*, *har-a-ti*

◇ *sr-iy-a-tê* ("it is moved (by)") ← 1. class verb *sṛ*, *sar-a-ti*

in contrast to *budh-y-a-tê* or *pat-y-a-tê*.

An example for the fourth line is given by *āp-nuv-an-ti,* where *u* cannot stand directly before a vowel and needs the halfvowel *v* to stand in between. The comparison of *su-nv-an-ti* or *kur-v-an-ti* with *āp-nuv-an-ti* prompts us to revisit the sound laws ***hV*** and ***V*+*h***:

				example
hV	*VRiV*	→	*VRyV*	*vy-artham*
	VRuV	→	*VRvV*	*anv-artha, kur-v-an-ti*
V*+*hV	*CRyV*	→	*CRiyV*	*mr-iy-a-tê*
	CRuV	→	*CRuvV*	*āp-nuv-an-ti*

In the examples of *gacch***ā***my aham* and *s***u***-nv-an-ti* or *k***u***r-v-an-ti* the clusters *RyV* or *RuV* are preceded by a (**fat**) vowel so that one obtains the corresponding halfvowel. In contrast, ***m****r-iy-a-tê* and *ā***p***-nuv-an-ti* exhibit the same clusters *RyV* or *RuV*, but they follow a (**fat**) consonant. Therefore, one does not obtain sound law ***hV*** but ***V*+*hV***. Finally, note that ***V*+*hV*** is also applied if *RuV* occurs word-initial as in *nuv-a-n-ti* (p. 164).

B.2.3. Diphthongs

We have noted above that ie. *a, e,* and *o* coalesce into oi. *a*. Nevertheless, you can find *e* and *o* in Sanskrit, also, but they go back to Indo-European diphthongs:

a/e/o (short or long)
plus
i/u

We obtain the short diphthongs

DIPH	ie. *ai/ei/oi*	→	oi.	ê,	bef. consonant
				ay,	bef. vowel
	ie. *au/eu/ou*	→	oi.	*ô*,	bef. consonant
				av,	bef. vowel
	ie. *āi/ēi/ōi*	→	oi.	âi,	bef. consonant
				āy,	bef. vowel
	ie. *āu/ēu/ōu*	→	oi.	âu,	bef. consonant
				āv,	bef. vowel

The reader notes that I use the hat to indicate that my transliteration of Sanskrit words does not always conform with the usual one. In particular, we have

normal writing	my writing
e	*ê*
o	*ô*
ai	*âi*
au	*âu*

I do this for three reasons. First, *ê* and *ô* are long vowels. Second, oi. *ê* can be distinguished from ie. *e*. Third, *âi* and *âu* go back to ie. long diphthongs which helps to understand some sandhi rules.

Turning to the short diphthongs, **DIPH** (the first two lines) is helpful to distinguish between *nêṭṛ* ("leader") and *nayati* ("he leads"). Similarly, for the stem gô ("cow") compare instr. pl. gôbhis with instr. sg. *gavā*. Consider also

sarvê iti (without sandhi)
→ *sarvay iti* (**DIPH**)
and then sometimes
→ *sarva iti* (*y* is weak and drops here between words)

With respect to long diphthongs, **DIPH** (the last two lines) explains why we obtain a long $\bar{a}$ from the diphtongs *ai* and *au* that we write as *âi* and *âu*, respectively. Consider

tasmai adadāt (usual spelling without sandhi)
→ *tasmâi adadāt* (our spelling without sandhi)
→ *tasmāy adadāt* (**DIPH**)
and then sometimes
→ *tasmā adadāt* (*y* is weak and drops here between words)

and

ubhau êva (usual without sandhi)
→ *ubhâu êva* (our spelling without sandhi)
→ *ubhâv êva* (**DIPH**)

B.2.4. Vowel gradation (ablaut)

Indo-European vowel gradation

Many Sanskrit peculiarities turn out to be regular developments when seen from the point of view of Indo-European vowel gradation. Ablaut is the German word for vowel gradation, often used also in English texts.

First of all, the typical Indo-European vowel is *e* (that will become *a* in Sanskrit). Within Indo-European (!), this *e* can undergo two types of gradation (see also fig. B.1):

◇ quantitative ablaut:

- *e* may be lost (zero grade).
- *e* itself is the normal grade (full grade).
- *e* may become $\bar{e}$ (lenghtened *e*-grade).

◇ qualitative ablaut:

- *e* may be become *o* (*o*-grade).
- Finally, the lengthened *o*-grade $\bar{o}$ (which may also be considered a quantitative ablaut) sometimes occurs.

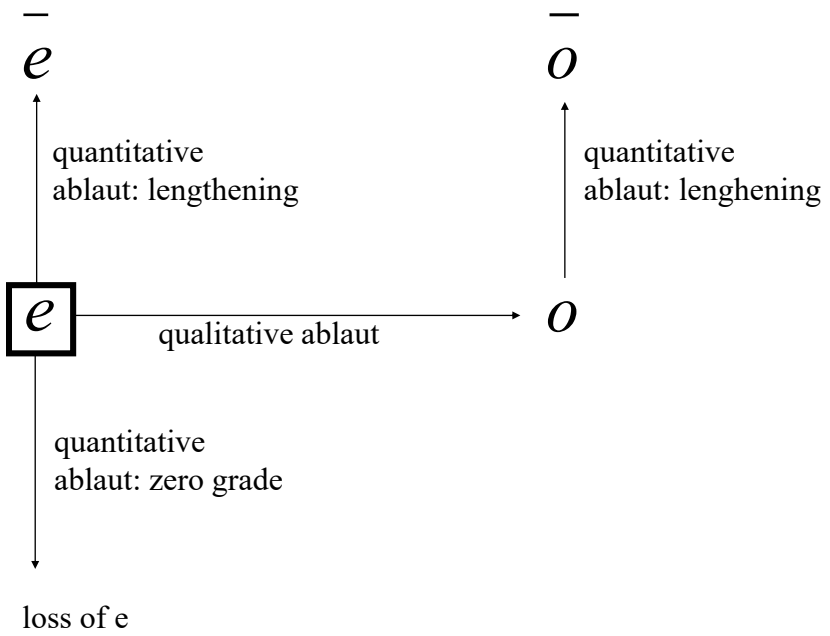

Figure B.1.: Indo-European Vowel Gradation (Ablaut)

Vowel gradation in Sanskrit

In Sanskrit, *e/o* and *ē/ō* coalesce into *a* or *ā*, depending on whether they are short or long (***aā*,** p. 19). Therefore, the traditional Indian grammarians did not consider the qualitative ablaut. Instead, they taught the three-fold distinctions:

◇ svara (this is our zero grade)

◇ guṇa (normal grade *e* or *o*-grade)

◇ vṛddhi (lenghtened *e*-grade, leading to *ē*) or the lengthened *o*-grade, yielding *ō*)

Roughly speaking, svara (zero grade) and guṇa (full grade *e* or *o*-grade) tend to go back to Indo-European, whereas many instances of the lengthened grades have developed within Old Indian, only.

Beautifully, vowel gradation is pretty transparent in Sanskrit. That is why we need to have a firm grasp of its workings. Important (and true *cum grano salis*):

◇ Strong forms (in the nominal declension as well as in the verbal conjugation, in particular classes 2 and 3) involve the full grade.

◇ The weak forms are based on the zero grade.

However, in contrast to the Sanskrit grammarians, it is best to begin with the normal or full grade. Let us consider a few examples. *budh, bôdhati* is Sankrit for "to know". In Indo-European times, *ô* went back to *eu* before consonants (**DIPH**, p. 22). When,

in Indo-European times, the *e* was dropped to obtain the zero grade, we were left with *budh* (in fact, we had ie. **bhudh* but that is another story). Certainly not *bvdh* because syllables need a vowel (p. 18).

A second example: "remember" in Sankrit is

smṛ	the oi. root in zero grade
smar-a-ti	the 3. sg. present tense in full grade

In the zero grade, without *a* (representing ie. *e*), you do not have *smar* but *smṛ*. For example, the past perfect participle (PPP) is normally formed from the zero grade, here *smṛ-ta* ("remembered"). If you have been doing Sanskrit for a while, a lot of verbs will come to your mind where matters are not that simple. Hold on for a while or fastforward to section C.4, pp. 108. Did you notice the funny circle under the *r*? It means that *ṛ* is syllabic, i.e., it has vowel quality (p. 18). In Indo-European syllabic *r* is denoted by a larger circle: ie. $\mathring{r}$.

A last example concerns the nasals. Oi. *nam* ("to bow") is in the full grade. The PPP is *nata* which goes back to ie. $nm\mathring{}to$. This points to an important sound law:

SY_N

ie.	$\mathring{n}C$	→	oi. aC
ie.	$\mathring{m}C$	→	oi. a
ie.	$\mathring{n}V$	→	oi. anV
ie.	$\mathring{m}V$	→	oi. amV

The vowel-gradation table

We are now in a position to summarize ie. vowel gradation and the oi. version in one table. I hope you see that it is very systematically constructed:

	just *e*	half vowel *y*	half vowel *v*
zero gr.	ie. - → oi. -	ie. *i* → oi. i	ie. *u* → oi. *u*
full gr.	ie. *e* → oi. *a* (***aā***)	ie. *ei* → oi. *ê/ay* (**DIPH**)	ie. *eu* → oi. *ô/av* (**DIPH**)
length. gr.	ie. *ē* → oi. *ā* (***aā***)	ie. *ēi* → oi. *âi/āy* (**DIPH**)	ie. ēu → oi. *âu/āv* (**DIPH**)

	r	*n*
zero gr.	ie. $\mathring{r}$ → oi. *ṛ*	ie. $\mathring{n}$ → oi. *a* (**SY_N**)
full gr.	ie. *er* → oi. *ar* (***aā***)	ie. *en* → oi. *an* (***aā***)
length. gr.	ie. *ēr* → oi. *ār* (***aā***)	ie. *ēn* → oi. *ān* (***aā***)

Let us look at a few other examples about ablaut laws:

◇ ie. **es* "to be" clearly shows in the full grade *as-ti* ("he is", compare Latin *est*) and zero grade *s-anti* ("they are", compare Latin *sunt*).

◇ oi. *i* "to go" has full grade *êti* ("he goes", with *ê* before consonant according to **DIPH**) and zero grade *y-anti* ("they go", with consonant *y* before vowel).

◇ The vṛddhi form (lengthened form) of *budh* appears in *bâud-dha* ("concerning understanding, Buddhist").

◇ The Sanskrit term for lenghtened grade vṛddhi goes back to *vṛdh, vardhatê* ("to grow"). Funnily, *vṛddhi* it is an example of the zero grade.

◇ Latin *menti* (known to you from B *mental*) is cognate with Sanskrit zero grades *mati* ("thought, idea") and the past participle *mata* where you have *a* for syllabic *n̥* (**SY_*N***). The full grade is represented by the neuter noun *manas*, while *māna* ("opinion, intent") shows the lengthened grade.

◇ English and German examples of ablaut are presented at pp. 67 below.

B.2.5. Sanskrit representation of ie. syllabic nasals and liquids, without laryngeals

Indo-European knew syllabic nasals and liquids, probably both short and long. Here, we concentrate on the development of short syllabic nasals and liquids into Sanskrit. Below, in subsection B.5.2, we also look at other languages. Thus, for syllabic nasals, we find

IE_SY_*N* ie. $\underset{\circ}{n}/\underset{\circ}{m}$ → oi. $\begin{cases} an/am & \text{bef. vowel} \\ a/a & \text{between consonants} \end{cases}$

with Sanskrit examples *an-anta* ("without end") and *a-gatika* ("without way out"), respectively. For syllabic liquids, we observe these sound laws:

IE_SY_*L* ie. $\underset{\circ}{r}/\underset{\circ}{l}$ → oi. $\begin{cases} \underset{\circ}{r} \text{ or } \underset{\circ}{l}\ (!) & \text{between cons.} \\ ur/ur & \text{before vowels, after labials} \\ ir/ir\ (?) & \text{before vowels, not after labials} \end{cases}$

Examples are presented in subsection B.5.2. Laryngeals affeccted these developments in particular manners as can be seen in subsection B.2.7.

B.2.6. Resolution of syllabic conflicts

Sometimes, it may be unclear which sound is to become syllabic. For example, 3. pers. pl. (!) pres. tense *bi-bhy-a-ti* might be explained by

ie. **bhi-bhiH-*$\underset{\circ}{n}$*-ti* (reduplication, zero grade)
bhi-bhī-$\underset{\circ}{n}$*-ti*

and then

→ *bi-bhī-n-ti* (second to last syllabifiable sound syllabic)

or

→ *bi-bhy-a-ti* (last syllabifiable sound syllabic)

Apparently, the following rule applies:

SY_Conf Make the last syllabifiable sound syllabic!

A second example is *karm-a-bhis* rather than n.at. *karanbhis*.

This rule can be applied several times. Consider *yuv-a-ti* from (something like) ie. *yuv-n̥-ti* where, from right to left, we obtain

ie. **yuv-n̥-ti*
→ *yuv-a-ti* (**SY_Conf** with respect to *n̥*)
→ *yu-v-ati* (***hV*** with respect to *v*)
→ *y-u-vati* (**SY_Conf** with respect to *u*)
→ *y-uvati* (***hV*** with respect to *y*)

B.2.7. Laryngeal sound laws

The sound laws

Finally, laryngeals were lost. But they left specific traces in three groups (a fourth one is covered under consonant sound laws). First, consider these laryngeal laws with respect to vowels and diphthongs:

Lar_V	ie. $h_1e/h_2e/h_3e$	→	ie. $e/a/o$
	ie. $iH/uH/eH/oH$	→	$\bar{\imath}/\bar{u}/\bar{a}/\bar{a}$
	ie. $eiH/euH/\bar{e}iH/\bar{e}uH$	→	ie. $ei/eu/\bar{e}i/\bar{e}u$ → **DIPH**
	ie. *CHC*	→	*CiC* or *CC* (unclear conditions)

The first line is understandable from subsection B.1.4. The second line says that laryngeals were lost under compensatory lengthening. The same may hold for the third line, but the diphthongs are long already.

Consider the instructive example of ie. **bheuH* ("to be"). One finds

◇ zero grade oi. *bhū-ta* (long $\bar{u}$ is an instance of compensatory lengthening for the dropped laryngeal, **Lar_V** second line)

◇ full grade *bhav-a-ti* (the laryngeal is lost without effect between consonant and vowel, ***Lar_CH***)

◇ full grade *bhavitum* (the laryngeal becomes *i* between consonants, **Lar_V** fourth line)

In contrast to the sound law ie. *CHC* → *CiC*, laryngeals are sometimes dropped without apparent trace, as in *da-dh-mah* ("we set") from ie. **de-dhh*$_1$*-mes*. The conditioning

factors are difficult to discern. Compare s.v. *dā* ("to bind") ← ie. **deH* with the two zero grades

◇ *d-yati* ← ie. **dH-ye-ti* and

◇ *a-di-ti* ← ie. **n̥-dH-ti*

Second, when laryngeals follow syllabic nasals or liquids, one finds:

Lar_SY	ie. $C\mathring{n}HC$	→	$C\bar{a}C$
	ie. $C\mathring{m}HC$	→	$C\bar{a}mC$ (or $C\bar{a}C$)
	ie. $C\mathring{m}HV$	→	Cam
	ie. $C^{\texttt{labial}}\mathring{r}H$	→	$C\bar{u}r$
	ie. $C^{\texttt{not labial}}\mathring{r}H$	→	$C\bar{\imath}r$

jan, jāyatê ("to be born") is often considered a very irregular verb, with the PPP *jāta* and the agent noun *janitṛ* ("creator, progenitor"). We find

◇ long *ā* in zero grade (4. class verb with *ya,* PPP) and

◇ short *a* in full grade (agent noun).

Shouldn't it be the other way around? No. The Indo-European full grade of this verb is (to be reconstructed as) **ǵenH* so that we obtain

◇ zero grade oi. PPP *jāta* ← *ǵn̥H-to* according to sound law ie. $C\mathring{n}H \rightarrow C\bar{a}$,

◇ zero grade oi. *jā-ya-tê* ← *ǵn̥H-ye/o-tei,*

◇ full grade *janitṛ* where the laryngeal turns into *i* between the consonants *n* and *t*.

The only "problem" may be the root *jan* itself. However, roots are grammatical fictions and which root should one postulate instead? Writing *jā, jāyatê* rather than *jan, jāyatê* is certainly not helpful.

Third, a laryngeal metathesis apparently took place in some examples:

Lar_MTh	ie. $CHiC$	→	$CiHC$
	ie. $CHuC$	→	$CuHC$

The laryngeal vowel-gradation table

In line with the above sound laws, we can rewrite the table from section B.2.4 (pp. 23) with laryngeals:

	just e+H	half vowel y+H	half vowel v+H
zero gr.	ie. $CHC \rightarrow$ oi. CiC (also CC) ie. $CHV \rightarrow$ oi. CV	ie. $iH \rightarrow$ oi. $\bar{\imath}$	ie. $uH \rightarrow$ oi. $\bar{u}$
full gr.	ie. $eH \rightarrow$ oi. $\bar{a}$	ie. $eiH \rightarrow$ oi. $\hat{e}/ay$	ie. $euH \rightarrow$ oi. $\hat{o}/av$
length. gr.	ie. $\bar{e}H \rightarrow$ oi. $\bar{a}$	ie. $\bar{e}iH \rightarrow$ oi. $\hat{a}i/\bar{a}y$	ie. $\bar{e}uH \rightarrow$ oi. $\hat{a}u/\bar{a}v$

	r+H	n+H
zero gr.	ie. $C^{labial}\mathring{r}H \rightarrow$ oi. $C\bar{u}r$ ie. $C^{not\ labial}\mathring{r}H \rightarrow$ oi. $C\bar{\imath}r$	ie. $C\mathring{n}H \rightarrow$ oi. $C\bar{a}$
full gr.	ie. $erH \rightarrow$ oi. ar	ie. $enH \rightarrow$ oi. an
length. gr.	ie. $\bar{e}rH \rightarrow$ oi. $\bar{a}r$	ie. $\bar{e}nH \rightarrow$ oi. $\bar{a}n$

In Sanskrit grammar books, you will often encounter "*seṭ* roots". The word *seṭ* derives from

- ◇ oi. *sa* ("with") and
- ◇ *iṭ* (which is the usual manner in which traditional Indian grammarians refer to the *i*)

together with a sandhi rule to be explained in the following subsection.

Many of these are roots that ended in a laryngeal, like oi. *bhū* or *jan*. In some grammatical forms, we have *i* as a reflex of the laryngeal (see the infinitives *bhavitum* or *janitum*). Roots without *i* are "*aniṭ* roots" where *aniṭ* ← *an* + *iṭ* uses the negating particle *a* or *an* (see *a* in the etymological dictionary). Some roots only sometimes exhibit the *i*. These are the "*vêṭ* roots", with *vā* ("or").

B.2.8. More vowel sandhi rules

Really different sandhi rules

In the previous subsections, a few sandhi rules could already be illuminated by referring to ie.-oi. sound laws. Some sandhi rules refer to developments within Old Indian. For these, the advantage of our modified transliteration will again be obvious. We find:

MVS	oi. $\breve{V}/\bar{V} + \breve{V}/\bar{V}/hV$	$\rightarrow$	oi. $\bar{V}$
	oi. $a/\bar{a} + i/\bar{\imath}$	$\rightarrow$	oi. $\hat{e}$
	oi. $a/\bar{a} + u/\bar{u}$	$\rightarrow$	oi. $\hat{o}$
	oi. $a/\bar{a} + \hat{e}$	$\rightarrow$	oi. $\hat{a}i$
	oi. $a/\bar{a} + \hat{o}$	$\rightarrow$	oi. $\hat{a}u$
	impf. augment $a/\bar{a} + i/\bar{\imath}$	$\rightarrow$	oi. $\hat{a}i$
	impf. augment $a/\bar{a} + u/\bar{u}$	$\rightarrow$	oi. $\hat{a}u$

MVS rules partly contradict the ie.-oi. sound laws **DIPH** (p. 22). This is no problem because the latter refer to the development from Indo-European to Old Indian, while the former describe inner-Indian sound changes.

The differences concern only some of these sound laws. Consider the fourth line of **MVS** and *atraiva* (as you would find it in usual textbooks):

	atra êva (without sandhi)
$\rightarrow$	*atra aiva* (*ai* as short diphthong with *i*)
$\rightarrow$	*atrâiva* (two short *a* have become one long $\bar{a}$)
$=$	*atraiva* (usual spelling)

or the fifth line of **MVS** and *saudanam pacati* (again with the standard transliteration):

	sā ôdanam pacati (without sandhi)
$\rightarrow$	*sā audanam pacati* (*au* as short diphthong with *u*)
$\rightarrow$	*sâudanam pacati* (by $\bar{a} + a = \bar{a}$)
$=$	*saudanam pacati* (usual spelling)

In a similar, fashion, the second and third lines of **MVS** are unsurprising. Consider

	êvam bhava iti vadati (without sandhi)
$\rightarrow$	*êvam bhavêti vadati* ($a + i = \hat{e}$)

or

	ca iti (without sandhi)
$\rightarrow$	*cêti* ($a + i = \hat{e}$)

or

	dêva īśvaras (compound, without sandhi)
$\rightarrow$	*dêvêśvaras* ($a + \bar{\imath} = \hat{e}$)

or

	mêgha udakam (compound "cloud water$\rightarrow$ rain", without sandhi)
$\rightarrow$	*mêghôdakam* ($a + u = \hat{o}$)

or

a-va-uc-a-t (aorist "he spoke", without sandhi)
→ *a-vôc-a-t* (*a* + *u* = *ô*)

Just to mock learners of Sanskrit, if the imperfect augment short (!) *a* precedes *i/ī/u/ū*, we do not obtain *ê* or *ô*, but *âi* and *âu*, respectively (see the last two lines of **MVS**). Examples:

na īkṣatê ("he does not see", without sandhi) → *nêkṣatê* (**MVS**, 2. line)
but *a-īkṣat* ("he did not see", without sandhi) → *âikṣat* (**MVS**, 6. line)

or

tena uktam ("it has been said by him", without sandhi) → *tenôktam* (**MVS**, 3. line)
but *a-uṣ-ma* ("we wished", without sandhi) → *âuṣ-ma* (**MVS**, 7. line)

Additional MVS examples

a/ā + *a/ā* → *ā* (MVS 1. line)

◇ *jalā-śaya* ("stay of water → lake") ← *jala* ("water") + *ā-śaya* ("stay, sojourn")

◇ *vêdānta* ("end of Vedic literature") ← *vêda* ("theological knowledge, Veda") + *anta* ("end")

◇ *vātāyanam* ("window") ← *vāta* ("wind") + *ayanam* ("going, motion, hallway") ← *i*

◇ *rāmāyana* (name of an Indian epic) ← *rāma* ("name of Indian hero") + *ayanam* ("going, motion, hallway")

◇ *sārtha* ("caravan") ← *sa* ("together with") + *artha* ("wealth")

◇ *sānanda* ("he with delight") ← *sa* ("together with") + *ānanda* ("delight")

◇ *bhūtārtha* ("fact, issue") ← *bhūta* (PPP of *bhū*) + *artha* ("meaning, purpose")

◇ *êkāgra* ("one-pointed, focussed") ← *êka* ("one, single") + *agra* ("top, summit, beginning")

◇ *gatāsu* ("with life gone away, dead") ← *gata* (PPP of *gam*) + *asu* ("life")

i/ī + *i/ī* → *ī* (MVS 1. line)

◇ *atīta* ("gone by") ← *ati* + *i-ta* (PPP of *i*)

◇ *atīva* ("exceedingly, very") ← *ati* + *iva*

◇ *vi-parīta* ("perverse, false") ← *vi* + *pari* + *ita* (PPP of *i*)

u/ū + *u/ū* → *ū* (MVS 1. line)

◇ *sūkta* ("well said") ← *su* ("good") + *ukta* (PPP of *vac*, "to say")

◇ *bahūtkŝêpam* ("having thrown up ones arms") ← *bahu* ("arm") + *ud* (preposition, "up") + full grade of *kṣip* ("to throw") + gerund ending *am* (pp. 107)

◇ from *yuv-an* m. ("youngster") instr. sg. *yū-n-ā* ← *yuv-n-ā*

a/ā + *i/ī* → *ê* (MVS 2. line)

◇ *sam-upēta* ("provided with") ← *sam* + *upa* + *i-ta* (PPP of *i*)

◇ *sēṭ* ("with *i*") ← *sa* ("together with") + *iṭ* (traditional expression for oi. *i*)

◇ *vēṭ* ("with or without *i*") ← *vā* ("or") + *iṭ* (traditional expression for oi. *i*)

◇ *prētyēha* ("in the hereafter and here") ← *pra-i* ("to go forward, to die") + *tya* (gerundive suffix) + *iha* ("here")

a/ā + *u/ū* → *ô* (MVS 3. line)

◇ *êkôna viṃśati* ("20-1, 19") ← *êka* ("one, single") + *ūna* ("incomplete")

◇ *hitôpadêśa* ("20-1, 19") ← *hita* ("well-being", see PPP of *dhā*) + *upa-dêśa* ("teaching", see *diś*)

◇ *a-vôc-a-t* (aorist, 3. pers. sg. of *vac*, "he said") ← **a-va-uc-a-t*

a/ā + *ê* → *âi* (MVS 4. line)

◇ *êkâikaśas*, adv. ("one by one") ← *êka* ("one") + *êka* + *śas* ("adverbial suffix)

a/ā + *ô* → *âu* (MVS 5. line)

◇ *vanâukas*, m. ("living in the forest, ascetic") ← *vana* ("forest") + *ôkas*, n. ("living place, homeland")

◇ *divâukas*, m. ("living in heaven, god") ← *diva*("heaven") + *ôkas*, n. ("living place, homeland")

◇ *uttamâujas* ("being of superior strength") ← *uttama* ("highest, best") + *ôjas* ("strength")

B.2.9. Lengthening of Indo-European o in open syllables (according to Brugmann)

A somewhat special law is due to the famous Leipzig scholar Karl Brugmann. It says

$$\textbf{L}\,\boldsymbol{o} \qquad \text{ie. } oCV \quad \rightarrow \quad \text{oi. } \bar{a}CV$$

This law is rather complex:

◇ First, it is only ie. *o*, but not ie. *e* or *a* that are lengthened. From a purely Sanskrit point of view, it is difficult to know whether the law applies because all three ie. vowels turn into oi. *a*.

◇ Second, while one often speaks of an open syllable as a prerequisite, it is more to the point to say that ie. *o* is followed by only one consonant plus a vowel:

- Sometimes, a second consonant in the form of a laryngeal may not be visible any more. Then, the law does not apply. See *janayati* below.
- If the word finishes with ie. *o*, the syllable is open, but Brugmann does not apply. See *pra* below.
- If ie. o goes back to h_3e, the law is also not applied. See *avi* in the dictionary.

Differently put, one obtains ie. $o \rightarrow$ oi. $\bar{a}$ unless the syllable is heavy already, i.e., heavy by the existence of two consonants after *o*. We point to four classes of examples: First, 1. pers. pl. verbs like *bhar-ā-mas* ← ie. **bher-o-mes* show the long $\bar{a}$ before *m* in an open syllable. (However, 1. pers. sg. verbs like *bharāmi* does not fall under this heading because of Greek *pherō* and Latin *ferō*. Apparently, *mi* was added in Sanskrit after long $\bar{o}$ which already indicates the 1. pers. sg.)

Second, verbs of the tenth class do also sometimes show long $\bar{a}$, this time before the liquid *r*. In particular, we have

	mor-ey-e-ti ("he makes die, he kills")	→	*mār-ay-a-ti*
but	*jonH-ey-e-ti* ("she begets")	→	*jan-ay-a-ti*

In the second example, the laryngeal makes the syllable a closed one so that Brugmann's law does not apply.

Third, in the perfect tense, we find

	1. pers. sg.		3. pers. sg.	
√	ie.	oi.	ie.	oi.
kṛ ("to make")	*ke-kor-h_2e*	*ca-kar-a*	*ke-kor-e*	*ca-kār-a*
gam	*g^we-g^wom-h_2e*	*ja-gam-a*	*g^we-g^wom-e*	*ja-gām-a*
tan	*te-ton-h_2e*	*ta-tan-a*	*te-ton-e*	*ta-tān-a*

In the 1. pers. sg., the syllable is not open because of the laryngeal. In the 3. pers. sg., the syllable is open and hence, Brugmann's law applies. The 1. pers. sg. also has

the Sanskrit alternatives *ja-gām-a*, *ta-tān-a*, or *ca-kār-a*, respectively. However, these **L*o*-**violating variants do not show up in the older Vedic language.

Fourth and finally, Brugmann does not apply in open syllables in absolute auslaut: oi. *pra* ← ie. **pro* and oi. *sa* ← ie. **so*.

B.3. Consonants

B.3.1. Old Indian consonants

Most Old-Indian stops or plosives can be put into a matrix with five rows and four columns:

	vl./unasp.	vl./asp.	vd./unasp.	vd./asp.	nasals	sibilants
velars	*k*	*kh*	*g*	*gh*	*ṅ*	
palatals	*c*	*ch*	*j*	*jh*	*ñ*	*ś*
cerebrals	*ṭ*	*ṭh*	*ḍ*	*ḍh*	*ṇ*	*ṣ*
dentals	*t*	*th*	*d*	*dh*	*n*	*s*
labials	*p*	*ph*	*b*	*bh*	*m*	

In each of these rows, we find voiceless (abbreviation: vl.) and voiced (vd.) representatives, both in aspirated (asp.) and unaspirated (unasp.) form. These sounds are stops or plosives because the air is stopped before it is finally released in an explosive manner. The fifth columns hosts the corresponding nasals and the sixth column the sibilants.

B.3.2. Primary and secondary palatalization

Reconsider the oi. table of plosives:

	vl./unasp.	vd./unasp.	vd./asp.
velars	*k* (**SPal**?)	*g* (**SPal**?)	*gh* (**SPal**?)
palatals	*ḱ* → oi. *ś* (**PPal**)	*ǵ* → oi. *j* (**PPal**)	*ǵh* → oi. *h* (**PPal**)
dentals	*t*	*d*	*dh*
labials	*p*	*b*	*bh*
labio-velars	k^w (**SPal**?)	g^w (**SPal**?)	g^wh (**SPal**?)

Dentals and labials are basically unaffected by sound ie.-oi. sound changes. Both the ie. table and the oi. table of plosives have palatals in their second rows. The development from ie. to oi. palatals is called primary palatalization:

PPal	ie. $\acute{k}V$	$\rightarrow$	oi. $\acute{s}V$
	ie. $\acute{g}V$	$\rightarrow$	oi. jV
	ie. $\acute{g}hV$	$\rightarrow$	oi. hV
but **SIB** (p. 43)	ie. $\acute{k}s$/ie. $\acute{g}s$	$\rightarrow$	oi. $ks \rightarrow kṣ$ (**RUKI**)
	ie. $s\acute{k}$	$\rightarrow$	oi. *cch*
but **BA**	ie. $\acute{k}D^{\mathtt{vl}}$	$\rightarrow$	oi. $kD^{\mathtt{vl}}$
but ***sz***	ie. $\acute{g}P^{\mathtt{vd}}$	$\rightarrow$	oi. $zP^{\mathtt{vd}}$
	ie. $\acute{g}P^{\mathtt{vl}}$	$\rightarrow$	oi. $sP^{\mathtt{vl}}$

As examples for primary palatalization, consider the word for "hundred"

$$\text{ie. } \acute{k}\underset{\circ}{m}t\acute{o}m \quad \rightarrow \quad \text{oi.} \begin{cases} \text{oi. } \acute{s}at\acute{a}m \\ \text{ogr. } he\text{-}katon \\ \text{lat. } centum \\ \text{gth. } hund \end{cases}$$

or the one for "*knee*":

$$\text{oi. } j\bar{a}nu \quad \leftarrow \quad \text{ie. } {}^{*}\acute{g}enu/\acute{g}onu \quad \rightarrow \quad \text{lat. } genu \quad \sim \quad \text{e. } knee$$

Three verbs confirm the fifth line: oi. *ch* (with *cch* within words after short vowels) goes back to ie. $^{*}s\acute{k}$ as in

- ◇ *iṣ, icchati* ("to wish") ∼ e. *ask* ∼ ohg. *eiscōn* → nhg. *heischen*
- ◇ *gam, gacchati* ("to go") ∼ ogr. *baskō* ← ie. $^{*}g^{w}\underset{\circ}{m}\text{-}s\acute{k}$
- ◇ *pracch, pṛcchati* ∼ nhg. *forschen* ∼ lat. *pōscere, pōscō* ("to claim, to demand") ← ie. $^{*}p\underset{\circ}{r}\acute{k}\text{-}s\acute{k}$

Later on, within the Indo-Iranian language group, secondary palatalization (**SPal**) set in. While **PPal** invariably occurs, **SPal** depends on whether an ie. (!) front vowel (ie. *e* or *i*) follows. Fig. B.2 on p. 36 summarizes the most important palatalization laws. Secondary palatalization is most clearly seen in reduplicated forms, for example in the reduplicated perfect:

	3. pers. sg.	
√	ie.	oi.
kṛ ("to make")	*ke-kor-e*	*ca-kār-a*
gam	$g^{w}e\text{-}g^{w}om\text{-}e$	*ja-gām-a*

Additional examples for secondary palatalization are provided by

- ◇ oi. *ca* ← ie. $^{*}k^{w}e$ which shows very nicely in lat. *que*, and
- ◇ oi. *jīva* ← ie. $^{*}g^{w}\bar{\imath}vo$ ("living") which is also cognate with lat. *vīvus*
- ◇ oi. *jahi* ← ie. $^{*}g^{w}h\underset{\circ}{n}\text{-}hi$ which is difficult (see p. 162)

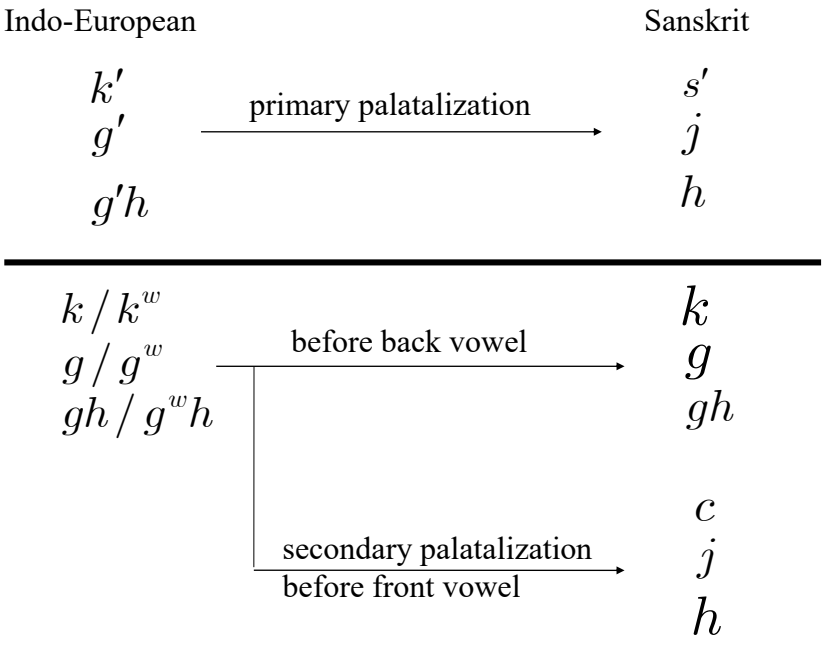

Figure B.2.: Primary and secondary palatalization

B.3.3. Aspiration laws (due to Bartholomae, due to Grassmann)

Aspiration shift (ASh)

There exist two aspiration laws that explain changes from Indo-European to Indo-Iranian.

◇ Aspiration shift (Bartholomae's law):

In consonant clusters, the aspiration shifts to the last consonant (if possible!).

◇ Aspiration dissimilation or deaspiration (Grassmann's law):

If aspirated consonants occur in the beginning of two subsequent syllables, the first aspirated consonant loses its aspiration.

Let us consider the shift of aspiration due to Christian Bartholomae (who got his Dr. phil. in Leipzig in 1877). The most frequent occurrences are

ASh	ie. *gh-t*	→	oi. *g-dh*
	ie. *dh-t*	→	oi. *d-dh*
	ie. *bh-t*	→	oi. *b-dh*
but	ie. *gh-s*/*ǵh-s*	→	*g-s* → *k-s* (**BA**) → **RUKI**
	ie. *dh-s*	→	*d-s* → oi. *t-s* (**BA**)
	ie. *bh-s*	→	*b-s* → oi. *p-s* (**BA**)

For example, we have both aspiration shift and forward assimilation (voiceless *t* becoming voiced *d* which is then aspirated) in PPPs such as

◇ *bud-dha* ← *budh-ta*

◇ *lab-dha* ← *labh-ta*

The main rule seems to be that aspirated consonants are not admitted within consonant clusters. Assume, now, that *bh* is followed by the consonant *s* which is voiceless and unaspirated. Indeed, voiced or aspirated spirants do not exist in Sanskrit. Therefore, we encounter two problems:

◇ While aspiraton can shift away from *b*, *s* cannot assume the aspiration.

◇ Voice cannot be forwarded to *s*.

As a consequence, backward assimilation (from voiceless *s* to voiced *b* sets in) and one obtains a form like future

ie. **lebh-sy-e-toi* (f.g. with future sign *sy*)
→ *labh-sy-a-tê*
→ *lap-sy-a-tê* (**ASh**)

Deaspiration (DA)

The second aspiration law is named after Hermann Grassmann, a German mathematician and Indologist. (He was not the inventor, however. See the article by Romaschko [2000].) Imagine having two aspirated sounds. One should probably add that these aspirated sounds occur syllable-initial (see *dhehi* on p. 172). However, levelling may have done its work in many cases where the second aspirated sound is not found at the beginning of a syllable. In any case, the first one becomes deaspirated:

DA ie. $C^{\text{asp}}\,VC^{\text{asp}}\,(\,V\,)$ $\rightarrow$ oi. $C^{\text{unasp}}\,VC^{\text{asp}}\,(\,V\,)$

Reduplicated forms provide examples.

◇ From oi. *bhū* ("to be"), we have the perfect *ba-bhūva* ("he was").

◇ The present tense for "to stand" is reduplicated: *sthā, ti-ṣṭha-ti* (**RUKI** after *i*).

◇ Verbs of class 3 are reduplicated and provide the examples such as *dhā, da-dhā-ti* ("to put")

Consider oi. *budh, bôdhati* which goes back to ie. **bheudh*. Interestingly, the word initial *bh* appears in the future form *bhôt-sy-ati*. Think about it this way:

◇ **ASh** is applied:

dh lost its aspiration in the consonant cluster and became voiceless before voiceless *s*. *sy* could not assume the aspiration.

◇ **DA** is not applied:

Deaspiration did not take place. The second (originally aspirated) consonant *dh* is not aspirated any more.

Finally, compare

◇ nom. *kāma-dhuk*, f. ("wish fulfillment") with

◇ acc. *kāma-duh-am*

Ie. **dheugh* means "to milk". In accusative, *h* is followed by a vowel (apply **DA**). In nominative, *k* (**AFP**) is in word-final position (do not apply **DA**) so that there is no need to deaspirate the word-initial *dh*.

B.3.4. Assimilations

Introductory remark

All languages have assimilation rules. In the context of the Old Indian language, many assimilations are called *sandhi* rules. Most assimilations work backward, where a sound influences the preceeding one. Forward assimilation is also present, in particular with respect to cerebralization. Interestingly, when a cerebral plosive (that would be inclined to make the following sound cerebral) is followed by a palatal or dental plosive (that would be inclined to palatalize or dentalize the preceding sound), some sort of stalemate results: no assimilation takes place in *ṣaṭ-cakra* ("six chakras") or *ṣaṭ-triṃśa* ("thirty-six").

Backward assimilations

Let us begin with some important and rather obvious cases of backward induction:

BA

motivation	example
voicelessness	*yuk-ta* ← ie. **yug-to*
	tat kamalam ← *tad* + *kamalam*
voice	*gramād vanam* ← *gramāt* + *vanam*
nasalizing of dentals	*tan mitram* ← *tad* + *mitram*
	un-mārgas, m. ("a wrong or evil way") ← *ud-mārgas*
	anna ← *ad-na* (oi. root *ad*)
	ṣaṇ-māsas, m. ("period of six months") ← *ṣaṭ-māsas*
palatalization	*tac chrutvā* ← *tad* + *śrutvā*
	uccarati ← *ud-carati*
depalatalization	*yuk-ta* ← ie. **yug-to*
dentalization	PPP *śrānta* ← **śrāmta* ← ie. **ḱr̥m̥H-to*

Less obvious sorts of backward assimilation are covered in the following subsections and sections.

Backward assimilation: *sz soundlaw*

For intermediate steps, we need three so-called ***sz*** laws. *z* is a voiced sibilant. It can originate from voiceless *s* before voiced consonant. Alternatively, it can go back to ie. *ǵ*, again before voiced consonants. These are the sound laws:

sz	ie. *s* before vowel or voiced stop	→	**z*
	ie. *ǵ* before voiced stop	→	**z*
	ie. *ǵ* before voiceless stop	→	**s*

For examples concerning the first two sound laws, please, wait until pp. 47. An example for the third law, is provided by PPP *iṣ-ṭa* of oi. *yaj* ("to sacrifice"):

ie. **iǵ-to* (z.g. with *to* PPP marker)
→ *is-ta* (***sz*** before voiceless cons.)
→ *iṣ-ta* (**RUKI**)
→ *iṣ-ṭa* (**Cer*D***)

Backward assimilation: insertion of sibilant after word-final *n*

If a word-final *n* stands before certain voiceless consonants, it is changed into anusvāra and an additional sibilant is inserted. This rule is best seen from a few examples:

a-bhar-an ca	→	*a-bhar-aṃ-ś ca*
has-an ṭīkatê	→	*has-aṃ-ṣ ṭīkatê*
dêvān tatra	→	*dêvāṃ-s tatra*

This change might seem odd at first sight. Its explanation goes back to the acc. pl. (and maybe other forms) which is believed to have been ie. **-o-ns* and hence oi. *ān* in line with **CpL*s*** (p. 50). Apparently, the final consonant *s* was not dropped if standing right before the above consonants. Instead it was joined with, and assimilated to, these consonants.

Forward assimilations: overview

Forward assimilations are rarer than backward ones. We have these main classes:

1. Aspiration shift **ASh** (p. 37):

   A prominent example is the PPP *bud-dha* ← *budh-ta*. Both aspiration and voice go forward.

2. Cerebralization:

   ◇ of *s* after *i* and other sounds (**RUKI**, p. 41) as in loc. pl. *nadīṣu* of *nadī* ("river")

   ◇ of dentals after *ś*, *ṣ*, or *ẓ* (**Cer*D***, p. 41), for example, PPP *dṛṣ-ṭa* of oi. root *dṛś, paśyati* ("to see")

   ◇ of *n* after *r* (**Cer*n***, p. 42) as in *maraṇam* ("death")

3. Palatalization of *n* after *j*:

   ◇ The stem for "king" is *rāj-an* and the instr. sg. is *rāj-ñ-ā*.

   ◇ From ie. **ǵneh*$_3$ ("to know"), we have oi. root *jñā*.

Forward cerebralization: RUKI

One famous cerebralization law is called after the sounds that precede oi. *s*, leading to cerebralization. These sounds are

◇ oi. *r*-sounds, such as *r* and *ṛ* with examples

- *karṣa* ("ploughing") and
- *kṛṣṇa* ("black, dark")

◇ oi. *u*-sounds such as *u* and *ô* (see **DIPH**, p. 22) with example *gô-ṣṭham* ("cowshed") ← stem *gô* ("cow") + *sthā* ("to stand")

◇ oi. *k* with example loc. pl. *vākṣu* ← *vāc* ("word")

◇ oi. *i*-sounds such as *i* and *ê* with examples

- *sthā, ti-ṣṭhati* ("to stand") with *i*-reduplication
- *dêva* ("god") with loc. pl. *dêvêṣu*
- *sad, ni-ṣīdati*

Summarizing, we obtain the first line of the **RUKI** sound law:

RUKI	oi. *r/ṛ/u/ô/k/i/ê* + *s/z* not w.f., not before $P^{\texttt{vd}}$	→	oi. *r/ṛ/u/ô/k/i/ê* + *ṣ/ẓ*
	ie. *ḱs*	→	oi. *kṣ*
	oi. *us/is* before voiced stop	→	oi. *ur/ir*
	oi. *is-r*	→	oi. *is-r* ("no **RUKI**")

The **RUKI** sound laws are not clearcut: The example of *duh-kham* ("misfortune") does not fit the first line.

The second line seems clear from an example like *vaś* ("to wish") with 2. pers. sg. present tense *vak-ṣi* ← ie. **veḱ-si*.

The third line is necessitated by the neuter noun *havis* ("oblation") with

◇ with instr. pl. *havir-bhis* before voiced consonant

◇ but loc. pl. *haviḥ-ṣu* before unvoiced consonant

The fourth line is exemplified by *tamisram* ("darkness").

Forward cerebralization: Cer*D*

Not only the dental sibilant, but also the dental plosives can undergo cerebralization:

Cer*D*	oi. *ṣ/ś* + *t*	→	oi. *ṣṭ*
	ẓ + *d/dh*	→	*ẓ* + *ḍ/ḍh*

The first line shows up in these examples:

◇ PPP *dṛṣ-ṭa* of oi. root *dṛś, paśyati* ("to see")

◇ oi. *aṣṭā* ← ie. *oḱtō* ("*eight*"), but not in ie. **esti* ("he *is*") → oi. *asti*, where we have *s* rather than *ṣ* or *ś*

and in the PPP *iṣ-ṭa* of oi. *yaj, yajatê* ("to sacrifice"):

	ie. **iǵ-to* (z.g. with *to* PPP marker)
→	*is-ta* (***sz*** before voiceless cons.)
→	*iṣ-ta* (**RUKI**)
→	*iṣ-ṭa* (**Cer*D***)

For the second line consider

ie. **misdho*
→ *mizdha* (***sz*** before voiced cons.)
→ *miẓdha* (**RUKI**)
→ *miẓḍha* (**Cer*D***)
→ *mīḍha* (**CpL*z***)

Forward cerebralization: Cer*n*

The rules for the cerebralization of *n* are complex. Roughly speaking, we have

Cer*n* oi. *n* after *r*/*ṛ*/*ṝ* not word-final (see below) → oi. *ṇ*

Compare

◇ *jīvanam* ("life") without *r*-sounds or *ṣ* before *n* versus

◇ *maraṇam* ("death") where the *r* cerebralizes *n*.

Apparently, *r*-*ṣ* sounds force the tip of the tongue into a back-bending position. Then, by way of forward assimilation, *n* is also to be pronounced in a back-bending, i.e., cerebral manner. If other sounds intervene between the *r*-*ṣ* sounds and the *n*, cerebralization may still occur. This is the case when the other sounds involve the lips rather than the tip of the tongue. Compare

◇ *rathena* (instr. sg. of *ratha* ("carriage")) where the dental *th* forces the tip of the tongue forward very close to that position where dental *n* is to be pronounced, versus

◇ *brahmaṇā* (instr. sg. of *brahman* ("the absolute")) where *h* and *m* do not involve the tip of the tongue

Assimilations for syllable-initials

Some assimilations and dissimilations do not concern immediately adjacent sounds, but syllable-initials in neighbouring syllables:

SI oi. *ś..s* → oi. *ś..ś*
oi. *s..ś* → oi. *ś..ś*

For the first line see ie. **ḱasó* → n.at. *śasa* → *śaśa* ("hare"), by forward-assimilation example. Backward assimilation is involved in the second line where ie. **sveḱuro* → n.at. *svaśura* → *śvaśura* ("father in law") provides an example.

Sibilant and palatal-sibilant clusters

A bewildering variety of sound laws concern sibilants and palatal-sibilants clusters. For reference purposes, all these sound laws are collected here:

SIB			ie. *ss*	→	oi. *ts*
			ṣs	→	oi. *kṣ*
	PPal	←	ie. *ḱ*, ie. *ḱs*	→	oi. *kṣ*
	SPal	←	ie. k^w, ie. $k^w s$	→	oi. *kṣ*
	PPal, ***sz***	←	ie. *ǵ*, ie. *ǵs*	→	oi. *kṣ*
			ie. *tḱ*	→	oi. *kṣ*
			ie. *dhǵh*	→	oi. *kṣ*
			ie. $k^w ḱ$	→	oi. *kṣ*
	PPal	←	ie. *ḱ*, ie. *VsḰ/CsḰ*	→	oi. *Vcch/Cch*
			sḱ w.-i./*sk* w.-i.	→	*ch* w.-i.
			ie. $\underset{\circ}{r}sr$	→	oi. *ṛcch*

For the first five lines, refer to the following table:

√	translation	infinitive	future, 3. sg.
vas	to dwell	*vas-tum*	*vat-sy-a-ti*
tuṣ	to enjoy	*tôṣ-ṭum*	*tôk-ṣy-a-ti*
spṛś	to touch	*sparṣ-ṭum*, *spraṣ-ṭum*	*sprak-ṣy-a-ti*, *spark-ṣy-a-ti*
vac	to say	*vak-tum*	*vak-ṣy-a-ti*
yaj	to sacrifice	*yaṣ-ṭum*	*yak-ṣy-a-ti*

Let us no turn to the dental-palatal clusters ie. *tḱ* and ie. *dhǵh*. By a series of regular, but not obvious sound laws, one obtains the two sound laws in the above table:

ie. **tḱ*
→ *tś* (**PPal**)
→ *ṭṣ* (a backward version of **Cer*D***)
→ *kṣ*

and

ie. **dhǵh*
→ *dhźh* (some version of ***sz***)
→ *dź* (**ASh**, *ź* cannot be aspirated)
→ *ṭṣ* (a backward version of **Cer*D***, but unclear loss of voice)
→ *kṣ*

They justify the derivations

ie. $^*h_2\underset{\circ}{r}t\acute{k}o$
→ oi. *ṛkṣa* (“bear”),

and

ie. $^*dh\acute{g}hom$
→ ved. *kṣam* (“ground, earth”)

respectively.

For the fourth line from the bottom, refer to *cakṣ*. For the third last one, see

◇ *iṣ, icchati*(“to wish”) ∼ e. *ask* ∼ ohg. *eiscōn* → nhg. *heischen*

◇ *gam, gacchati* (“to go”) ∼ ogr. *baskō* ← ie. $^*g^w\underset{\circ}{m}$*-sḱ*

◇ *pracch, pṛcchati* ∼ nhg. *forschen* ∼ lat. *pōscere, pōscō* (“to claim, to demand”) ← ie. $^*p\underset{\circ}{r}$*ḱ-sḱ*

In these three examples, there is a vowel (*i*, $\underset{\circ}{m}$, or $\underset{\circ}{r}$) before ie. *(k)sḱ*. The case of a preceding consonant is covered by *hūrchana* in the dictionary. *Chand* and *cand* provide examples for application and non-application of word-initial occurences (second-to-last line), respectively.

The last line is justified by the *ra*-adjective *kṛcch-ra* from the oi. root *kṛṣ* (see p. 121).

B.3.5. Consonant clusters and word-final consonants

Simplification of consonant clusters (CCl)

Old Indian admits only a limited number of consecutive consonants. At the end of a word, the first consonant in a cluster remains. Within a word, the last two consonants are allowed:

CCl	oi. VC_1C_2 word-final	→	oi. VC_1
	oi. $VC_1C_2C_3V$ word-interior	→	oi. VC_2C_3V

Turning to word-final consonant clusters, consider these examples of cluster simplification:

◇ From an Indo-European perspective, *s* is often taken as the sign of nom. sg., both masculine and feminine, for example, in the thematic noun *dev-a-s*, m. (“god”). In athematic nouns, *s* is directly attached to the stem so that we might expect **marut-s*, but find nom. sg. *marut* (“wind”) instead.

◇ Parasmâipada imperfect sg. of athematic verbs also present suitable examples, for example

$\sqrt{}$ han	1. pers. sg.	2. pers. sg.	3. pers. sg.
	a-han-am	*a-han* ← *a-han-s*	*a-han* ← *a-han-t*

For simplification of word-interior clusters, consider the desiderative *bhik-s-u* ("beggar") which derives from

* *bhi-bhj-s-u*
→ *bhi-bj-s-u* (*s* cannot be aspirated)
→ *bhi-pk-s-u* (**BA** twice)
→ *bhi-k-s-u* (**CCl**)

Admissable consonants in absolute final position (AFP)

In absolute final positions (at the end of sentences), palatals, voiced, or aspirated stops are not allowed. The following table shows how they are substituted in absolute final position:

AFP

	vl./unasp.	vl./asp.	vd./unasp.	vd./asp.	sibilants
velars	*k*	*kh* → *k*	*g* → *k*	*gh* → *k*	
palatals	*c* → *k/ṭ*	*ch* →*k/ṭ*	*j* → *k/ṭ*	*jh* → *k/ṭ*	*ś* → *k/ṭ*
cerebrals	*ṭ*	*ṭh* → *ṭ*	*ḍ* → *ṭ*	*ḍh* → *ṭ*	*kṣ* → *ṭ*, *ṣṭ*→ *ṭ*
dentals	*t*	*th* → *t*	*d* → *t*	*dh* → *t*	*s* → *ḥ*
labials	*p*	*ph* → *p*	*b* → *p*	*bh* → *p*	

Root nouns (subsection C.4.1) provide examples:

oi. stem	nom. sg.	translation
dṛś ← ie. * *derḱ*	*dṛk* ← ie. * *dr̥ḱ-s*	sight
bhuj	*bhuk*	enjoyment, utility
madhu-lih ← ie. * *medhu* + ie. * *leiǵh*	*madhu-liṭ* ← ie. * *medhu-liǵh-s*	honey licker, bee
mṛd	*mṛt*	clay
viś ← ie. * *veiḱ*	*viṭ* ← ie. * *viḱ-s*	settlement
yudh	*yut*	battle
sam-rāj	*sam-rāṭ*	ruler

The loss of voice and aspiration may not be surprising. However, the palatals may turn into *k* or *ṭ*. From the point of view of **PPal** and **SPal** (see pp. 35), the change into *k* is the expected one because these palatal orginate from ie. velar or ie. palatals. Indeed, the palatalization has probably not occured at all in absolute final position.

It seems that cerebral *ṭ* shows up if cerebrals are involved in the first place or after **RUKI.** Indeed, in view of *viṭ* and *madhu-liṭ*, we can postulate the development

ie. *$*\acute{k}$-s/$\acute{g}h$-s
→ $\acute{k}$-s/$\acute{g}$-s (**ASh**)
→ k-s (**BA**)
→ k-$ṣ$ (**RUKI**)
→ $ṭ$ (**AFP**)

Avoidance of consonant clusters with resonant

Beside the diachronic rules as given in the previous sections, a few constrained-based rules are applied. They do not contain an arrow. Instead, they prohibit certain sound combinations and bring about "obvious" alternatives.

MET_*rSP* oi. *arSP* → oi. *raSP*

For example, the infinitive of *dṛś* is not *darṣṭum*, but *draṣṭum*. In this manner, the cluster *rṣṭ* is avoided.

B.3.6. Minor sound laws

Dialectal confusion of *r* and *l*

Ie. *r* may lead to oi. *r* or *l* and the same is true for ie. *l*. Thus, when we have oi. *r* or *l*, we cannot know without other evidence whether they go back to ie. *r* or to ie. *l*. This confusion results in pairs of Sanskrit words, one with *r*, the other with *l*:

◇ *car-a-ti* ("he wanders") versus *cal-a-ti* ("he moves, he swings")

◇ *rêkh-ā* ("line, strip, picture") versus *lêkh-ā* ("line, strip, picture"), both of which are related to *likh-a-ti* ("he writes")

This fact (although not a sound law) is indicated by ***rl***.

Roots with and without word-initial *s*

A number of ie. roots come in two version, with and without word-initial *s* which is than called *s*-mobile. See the dictionary chapter at oi. *stan*, *(s)tHeg*, *kṛt*, *carman*, *paśyati*, and *lih*.

Root-initial s before a plosive may drop, but lead to aspiration of this plosive. This sound law will be addressed by ***sP(h)***. Examples are provided by *chid*, *chad*, or *sphira* (see dictionary).

Sprouting or deletion of sibilants between dentals

We find two odd rules for sibilants between dentals. On the one hand, *z* (voiced sibilant) spontaneously emerges between voiced dentals (symbolized by $D^{\texttt{vd}}$). On the other hand, *s* (voiceless sibilant) is deleted before a voiceless dental:

D*z*D	ie. $D^{\texttt{vd}}D^{\texttt{vd}}$	$\to$	oi. $D^{\texttt{vd}}zD^{\texttt{vd}}$
	ie. $DsD^{\texttt{vl}}$	$\to$	oi. $DD^{\texttt{vl}}$
	ie. $PsD^{\texttt{vl}}$	$\to$	oi. $PD^{\texttt{vl}}$

The first sound law (sprouting of *z* between voiced dentals) is exemplified on p. 48. The second one is obvious from the gerund *ut-thāya* from *ud-sthā*. The third one has the support of the PPP *a-gdha* ("not eaten") from the oi. root *ghas* or the ie. root *ghes*

ie.**n̥ghs-to* (z.g. with *to*-marker for PPP)
→ *agh-ta* (**SY_*N***, **D*z*D**)
→ *ag-dha* (**ASh**)

This third sound law is also supported by *a-śap-dhvam* for u.at. *a-śap-s-dhvam* (p. 202).

B.3.7. Compensatory lengthenings

B.3.7.1. Compensatory lengthening for suppression of *z*

DIPH shows how oi. *ê* and *ô* go back to ie. diphthongs. There is one other source for *ê* and *ô*, compensatory lengthening for the suppression of (voiced) *z* (in intermediate steps). The latter originates from (voiceless) *s* before vowels or voiced consonants by ***sz*** (39). We find:

$$\begin{array}{llcl}
\mathbf{CpL}\boldsymbol{z} & \text{oi. } as{+}C^{\texttt{vd}} & \to & \text{oi. } \left\{\begin{array}{l} \hat{o}\text{, w.-f.} \\ \hat{o}\text{, not w.-f.} \\ \hat{e}\text{, not w.-f., bef. } i \end{array}\right. \quad C^{\texttt{vd}} \\
 & \text{oi. } is{+}C^{\texttt{vd}} & \to & \text{oi. } \left\{\begin{array}{l} ir\text{, sandhi between words} \\ \bar{\imath}\text{, word formation} \end{array}\right. \quad C^{\texttt{vd}} \\
 & \text{oi. } us{+}C^{\texttt{vd}} & \to & \text{oi. } \left\{\begin{array}{l} ur\text{, sandhi between words} \\ \bar{u}\text{, word formation} \end{array}\right. \quad C^{\texttt{vd}} \\
 & \text{oi. } \bar{a}s{+}C^{\texttt{vd}}/\,V & \to & \text{oi. } \bar{a}{+}C^{\texttt{vd}}/\,V \\
 & \text{oi. } as{+}a & \to & \text{oi. } \hat{o}{+}\varnothing \text{ (second w.-i. } a \text{ is deleted)} \\
\text{but no lengthening!} & \text{oi. } as{+}i/\bar{\imath}/u/\bar{u}/\hat{a}i \text{ etc.} & \to & \text{oi. } a{+}i/\bar{\imath}/u/\bar{u}/\hat{a}i \text{ etc.}
\end{array}$$

The first case ("at the end of words") of the first line is a common sandhi rule. For example, "the man runs" is

naras dhavati (without sandhi)
→ *naraz dhavati* (***sz*** before voiced stop)
→ *narô dhavati* (**CpL*z***)

Similarly (but internal sandhi), the instr./dat./abl. dual of *manas*, n.:

$$^{*}manas\text{-}bhyām \quad \rightarrow \quad manô\text{-}bhyām$$

and the number 13:

$$^{*}trayas\text{-}daśa \quad \rightarrow \quad trayo\text{-}daśa$$

And here are two more complicated examples: First, *ṣôḍaśa* (“16”) can be explained by

$$\begin{aligned} & ṣaṣ\text{-}daśa \text{ (without sandhi)} \\ \rightarrow \quad & ṣaẓ\text{-}daśa \text{ (}\boldsymbol{sz}\text{ before voiced stop)} \\ \rightarrow \quad & ṣaẓ\text{-}ḍaśa \text{ (}\mathbf{CerD}\text{)} \\ \rightarrow \quad & ṣô\text{-}ḍaśa \text{ (}\mathbf{CpL}\boldsymbol{z}\text{)} \end{aligned}$$

Second, the infinitive *vôḍhum* of *vah, vahati* results as follows:

$$\begin{aligned} & \text{ie. } ^{*}veǵh\text{-}tum \text{ (full grade and infinitive marker } tum\text{)} \\ \rightarrow \quad & vaǵh\text{-}tum \text{ (}\boldsymbol{a\bar{a}}\text{)} \\ \rightarrow \quad & vaǵ\text{-}dhum \text{ (}\mathbf{ASh}\text{)} \\ \rightarrow \quad & vaz\text{-}dhum \text{ (}\boldsymbol{sz}\text{)} \\ \rightarrow \quad & vô\text{-}dhum \text{ (}\mathbf{CpL}\boldsymbol{z}\text{)} \\ \rightarrow \quad & vô\text{-}ḍhum \text{ (leveling with PPP } ūḍha\text{, p. 115)} \end{aligned}$$

Still within the first line, within a word before a consonant + *i*, one obtains the 2. sg. impv. of “to be”

$$^{*}as\text{-}dhi \quad \rightarrow \quad êdhi$$

Together with sound law **D*z*D**, we obtain the parasmâipada impv. 2. pers. sg. of *dā* (“to give”). It builds on the reduplicative form *da-d*:

$$\begin{aligned} & \text{ie. } ^{*}da\text{-}dh_3\text{-}dhi \\ \rightarrow \quad & da\text{-}dzdhi \text{ (}\mathbf{DzD}\text{, p. 47)} \\ \rightarrow \quad & da\text{-}zdhi \text{ (}\mathbf{CCl}\text{, p. 44)} \\ \rightarrow \quad & daz\text{-}dhi \\ \rightarrow \quad & dê\text{-}dhi \text{ (}\mathbf{CpL}\boldsymbol{z}\text{)} \\ \rightarrow \quad & dê\text{-}hi \text{ (analogy)} \end{aligned}$$

where the analogy produces the alternative ending *hi* rather than *dhi*, for example:

bhī	with imperative ending *hi*:	*bi-bhī-hi*
just as		
dā	with imperative ending *hi*:	*dê-hi*

Turning to the second and third lines, we encounter sandhi rules that may also apply within words, such as *dur-ga*, *havir-bhis* (see p. 214) or *āyur-bhis* (see p. 214). In an earlier word-formation stage, we observe compensatory lengthening. Consider *sīdati* from the root *sad*(“to sit”)

si-sd-ati (reduplication with *i* and zero grade, without sandhi)
→ *si-zd-ati* (***sz*** law before voiced cons.)
→ *si-ẓd-ati* (**RUKI**)
→ *si-ẓḍ-ati* (**Cer*D***)
→ *sīḍ-ati* (**CpL*z***)
→ *sīd-ati* (leveling)

where leveling restores the dental:

	sīḍ-ati	
influenced by	*sa-sād-a* (perf. 3. pers. sg.) or other forms from *sad*	with dental
turns into	*sīd-ati*	with dental

For similar examples, consult the etymological dictionary for *nīḍam* or *mīḍham*.

Turning to the third line, consider this development that leads to the PPP of *vah* ← ie. **veǵh*:

ie. **vǵh-to* (z.g. with *to*-marker of PPP)
→ *uǵh-ta* (***hV***)
→ *uǵ-dha* (**ASh**)
→ *uz-dha* (***sz***)
→ *uẓ-dha* (**RUKI**)
→ *uẓ-ḍha* (**Cer*D***)
→ *ūḍha* (**CpL*z***)

According to a well-known sandhi rule, *s* is dropped from *ās* before voiced sounds. This is the fourth line of **CpL*z*** above and best understood as the result of two steps:

narās gacchanti (without sandhi)
→ *narāz gacchanti* (***sz***)
→ *narā gacchanti* (**CpL*z***, *ā* is already long)

A second example is provided by the 2. pl. present tense of *ās* ("to sit"):

ās-dhvê (without sandhi)
→ *āz-dhvê* (***sz***)
→ *ā-dhvê* (**CpL*z***, *ā* is already long)

Remember that this particular rule holds for vowels also, not just for voiced stops:

narās īkṣantê (without sandhi)
→ *narāz īkṣantê* (***sz***)
→ *narā īkṣantê* (**CpL*z***, *ā* is already long)

As in the first line, oi. *as* turns to *ô* also before oi. *a* (fifth line), but the latter is then deleted as in

rāmas atra (without sandhi)
→ *rāmaz atra* (***sz***)
→ *narô atra* (**CpL*z***)
→ *narô 'tra* (*a* of second word drops)

In the sixth line (similar to the fourth one), before vowels other than *a*, *s* simply vanishes:

rāmas īkṣatê (without sandhi)
→ *rāmaz īkṣatê* (***sz***)
→ *rāma īkṣatê* (*z* drops)

B.3.7.2. Word-final compensatory lengthening

Apart from **CpL*z***, other types of compensatory lengthening occur:

CpL*r*	oi. *Vr* + *r*	→	oi. $\bar{V}$ + *r*
CpL*s*	oi. *VCs*	→	oi. $\bar{V}$ + *C*

The first line is examplified by the sandhi rule

**punar rāmaḥ* → oi. *punā rāmaḥ*

but is not fulfilled in

**nêtar-s* → oi. *nêtā* pp. 231

where additional information is given at the pages indicated.

The second line is present in

**bala-vant-s*	→	oi. *bala-vān*	pp. 218
**su-manas-s*	→	oi. *su-manās*	pp. 213
**gir-s*	→	oi. *gīr*	
acc. pl. ie. **deiv-o-ns*	→	*dêv-ān*	pp. 210
acc. pl. ie. **nei-tr̥-ns*	→	*nê-tr̥̄-n*	pp. 231

Against **CpL*s***, we find

**gach-ant-s*	→	oi. *gach-an* (**CCl**)	pp. 220 for *bhar-an*
**rāj-an-s*	→	oi. *rājā*	pp. 226
**yôg-in-s*	→	oi. *yôgī*	pp. 230

B.3.7.3. Compensatory lengthening s

A rather special rule can be described as

$$\textbf{CpL}\,\textit{dḱ} \qquad \text{oi. } \textit{Vdḱ} \quad \rightarrow \quad \text{oi. } \bar{V} + \acute{k} \rightarrow \textbf{SIB}$$

For examples, see the dictionary entries for *dāśva* (s.v. *daṃś*), for oi. root *dīkṣ* (s.v. *dāś*), and for *pañcāśat*.

B.3.8. Visarga rules

Most visarga rules are of the backward-assimilation type. Before voiceless sounds, some obvious backward-assimilation rules apply. Before voiced sounds, voiceless *s* turns into voiced *z* and then some particular developments ensure.

Visarga rules regularly apply to word final *s*, but sometimes also to s within words, in particular before endings or in composita. Quite a few of the visarga rules have been dealt with before. The rules can easily be memorized by looking at examples (mostly provided by Goldman and Goldman, 2011):

◇ *s* following any vowel but *a* or *ā*

- absolute final position: *agnis* → *agniḥ*
- before non-voiced initial that are
  - ⊙ palatal stops: *haris* + *calati* → *hariś calati* (**BA**)
  - ⊙ cerebral stops: *haris* + *ṭīkāṃ karoti* → *hariṣ ṭīkāṃ karoti* (**BA**)
  - ⊙ dental stops: *agnis* + *tīkṣṇaḥ* → *agnis tīkṣṇaḥ* (*s* is dental already)
  - ⊙ any other:
    - ▷ *haris* + *paśyati* → *hariḥ paśyati*
    - ▷ *haris* + *saṃharati* → *hariḥ saṃharati*
    - ▷ loc. pl. *manaḥ-su* besides *manas-su*)
- before voiced initial:
  - ⊙ *agnis* + *iva* → *agnir iva*
  - ⊙ *gatir* + *nāsti* → *gatir nāsti*

◇ *s* following *a*

- absolute final position: *rāmas* → *rāmaḥ* (as after other vowels, see above)
- before non-voiced initial (just after other vowels, see above)
- before voiced sounds that are
  - ⊙ consonants: *rāmas* + *gacchati* → *rāmo gacchati* (**CpL*z***)
  - ⊙ vowel *a*: *rāmas* + *ayaṃ* → *rāmo 'yaṃ* (**CpL*z***)
  - ⊙ other vowels: *rāmas* + *uvāca* → *rāma uvāca* (**CpL*z***)

◇ *s* following $\bar{a}$

- absolute final position: as after any other vowels
- before non-voiced initial (just after any other vowels)
- before voiced initial: *hatās* + *vīrās* → *hatā vīrāḥ* (**CpLz**)

These rules are addressed by **Vis**.

B.3.9. Laryngeal sound laws

Laryngeals were involved in modifying some consonants:

Lar_*CH*		ie. *CHV*	→	*CV*
	in particular:	ie. $P^{\texttt{vd,unasp}}h_2$	→	$P^{\texttt{vd,asp}}$
		ie. th_2/ k^wh_2	→	*th*/ *kh*
		ie. ph_3	→	*b*

The laryngeal in the sequence *CHV* tends to be dropped without a trace. However, there are important exceptions, both before *V* and before *C*. First, after voiced unaspirated plosives, the laryngeal h_2 effected aspiration as in

lat./ogr. *egō*
← ie. **h*$_1$*eǵoh*$_2$/*h*$_1$*eǵoh*$_2$*m*
→ *h*$_1$*eǵh*$_2$*om* (metathesis of *o* and h_2, similar to **Lar_MTh**)
→ *eǵhom* (**Lar_*V***, **Lar_*CH***)
→ *ehom* (**PPal**)
→ *aham* (***aā***)

and in the difficult cases of

ie. **dhug-h*$_2$*ter*
→ *dhughiter* (**Lar_*CH***, **Lar_*V***, with two effects from one laryngeal)
→ *dughiter* (**DA**)
→ *dughitar* (***aā***)
→ *duhitar* (**SPal**)

and

ogr. *mega*
← ie. **meǵh*$_2$*-os*/*meǵh*$_2$
→ *meǵhi* (**Lar_*CH***, **Lar_*V***, with two effects from one laryngeal)
→ *mehi* (**PPal**)
→ *mahi* (***aā***)

For the two remaining sound laws see *sthā, tiṣṭhati* ("to stand") on p. 80 and *pā*, *pi-ba-ti* ("to drink") on p. 81.

B.3.10. Old Indian *h*

In contrast to the usual procedure (from ie. to oi.), we now observe where Old Indian *h* comes from. The following long list is somewhat disconcerting. Oi. *h* may regularly originate

◇ from ie. palatal *ǵh* (**PPal**)

◇ from ie. velar *gh* or from ie. labiovelar g^wh (**SPal**)

It may also be dialectal from

◇ ie. *dh* (see PPP *hita* of *dhā*) or

◇ ie. *bh* (see oi. *gṛh* besides oi. *gṛbh* "to grab")

In a surprising manner (other ie. languages do not show aspiration), oi. *h* is seen in these examples:

◇ oi. *hanu* "chin" versus lat. *gena*∼ nhg. *Kinn*

◇ oi. *hṛd* ("*heart*") versus lat. *cor, cordis* where *h* represents an ie. (voiceless!) palatal (ie. **ḱerd*)

And, finally, see the previous laryngeal subsection for *aham*, *duhitar*, and *mahi.*

B.4. Middle and New Indian

B.4.1. Introductory remark

There are several Middle Indian languages, the oldest one being Pali which was primarily used in Buddhist scriptures. Other Middle Indian languages are Śaurasenī, Māghadhī, or Māhārāṣṭrī. These languages are normally addressed by Prakrit or Prakrits. The sound laws that differentiate Middle Indian (mi.) from Old Indian (oi.) are complicated and differ between the Middle Indian languages. We mostly use Pali (pa.) when we look for Middle Indian examples, but sometimes also Prakrit (pkt.). While Classical Sanskrit (in the sense of Pāṇini) is not a mother tongue of Pali or of (a) Prakrit, it is surely more conservative than these Middle Indian languages in most respects. Counterexamples exists such as pa. *idha* ("here") versus oi. (even ved.) *iha* which is "newer" (see pp. 53). Or consider the thematic present tense participle oi. and ved. *a-māna* (see p. 248). While acknowledging that Pali is sometimes more conservative than Sanskrit, we still feel justified to use the arrow → in

oi. *ava* → mi. *o*

or

$$\text{oi. } dugdha \quad \rightarrow \quad \text{pa. } duddha$$

Middle Indian features (as shown in Pali) are already present in Vedic scriptures. In contrast, Apabhraṃśa develops later, as of 500 A.D.

B.4.2. Vowels and diphthongs

Different sources of *o* and *e*

The vowels oi. *a, i,* and *u*, both short and long, are generally preserved as such. If, after loss of a consonant, *i* or *u* come to stand after another vowel, they are written as *ï* or *ü*, respectively.

Oi. *ê* and *ô* are also preserved. Remember that these oi. vowels are long. In Middle Indian, we have both short and long *e* and *o* that we distinguish in writing by *ĕ* or *ē*, and *ŏ* or *ō*, respectively.

Now, mi. *ē* and *ō* basically have three origins:

$$\begin{aligned} \text{oi. } \hat{e}/\hat{a}i/aya \quad &\rightarrow \quad \text{mi. } \bar{e} \\ \text{oi. } \hat{o}/\hat{a}u/ava \quad &\rightarrow \quad \text{mi. } \bar{o} \end{aligned}$$

They may be shortened due to the law of morae (see below). Consider the example of

$$\text{oi. } tâila \text{ (“oil”)} \quad \rightarrow \quad \text{pa. } tēla \quad \sim \quad \text{pkt. } tĕlla$$

Since oi. *p* may develop into mi. *v*, we obtain the following corrollary to the above sound law

$$\text{oi. } apa \quad \rightarrow \quad \text{mi. } \hat{o} \quad \rightarrow \quad \text{mi. } \bar{o}$$

Mi. *ē* has additional sources:

$$\text{oi. } \bar{a}yi/ayi/avi \quad \rightarrow \quad \text{mi. } \bar{e}$$

Thus, oi. long diphthongs *âi* or *âu* are not preserved in Middle Indian.

The law of morae

The law of morae states that a syllable with a long vowel cannot be closed. If we have an oi. word with a long vowel followed by two consonants, in Middle Indian, either the long vowel has to be shortened or the double consonant simplified. This can be seen in oi. *upêkṣā* which corresponds to both

- ◇ pa. *upĕkkhā* (short vowel and double consonant) and
- ◇ pa. *upēkhā* (long vowel and single consonant)

A variant of this law can be seen in the doubling of consonants:

- ◇ oi. *êka* (“one”) → pkt. *ĕkka*

◇ oi. *êvam* ("thus") → pkt. *ĕvvam*

◇ oi. *tâilam* ("oil") → pkt. *tĕlla*

◇ oi. *nakha* ("finger nail") → pkt. *nakkha*

◇ oi. *yâuvanam* ("youth") → pkt. *jŏvvaṇa*

We summarize:

LawOfMorae

$$\begin{array}{lcl} \text{oi. } \bar{V}CC & \rightarrow & \text{mi. } \breve{V}CC/\bar{V}C \\ \text{oi. } \bar{V}C & \rightarrow & \text{mi. } \breve{V}CC \end{array}$$

Anaptyxis or svarabhakti

An "inserted vowel" is regularly found between two consonants, one of which is a resonant (R), i.e., a nasal (N), a liquid (L), or a halfvowel (hV). The inserted vowel is often *i:*

$$\begin{array}{lcl} \text{oi. } RC & \rightarrow & \text{mi. } RiC \\ \text{oi. } CR & \rightarrow & \text{mi. } CiR \end{array}$$

However, *u* can serve in this position in two cases:

◇ near half vowel *v* or

◇ near labials

This phenomenon is called anaptyxis or, in Sanskrit, svarabhakti. Here, we have some examples:

◇ oi. *klinna* (PPP of *klid*, "to get wet") → pkt. *kiliṇṇa* (see also p. 57) oi. *varṣa* ("rain") → pkt. *varisa* (together with oi. *ś/ṣ/s* → mi. *s*)

◇ oi. *padma* ("lotus") → pa. *paduma* ∼ pkt. *paüma*

◇ oi. *śvas* ("tomorrow") → pkt. *suvo* (near half vowel *v*)

◇ oi. *smarati* ("he remembers") → pa. *sarati* ∼ pkt. *sumaradi* (near labial *m*)

◇ oi. *harṣa* ("joy, delight") → pkt. *harisa*

Vocalic *ṛ*

Oi. *ṛ* turns into *i*, *a*, or *u*:

$$\text{oi. } ṛ \quad \rightarrow \quad \text{mi. } \begin{cases} i, & \text{after or before light vowel} \\ u, & \text{after labial} \\ i/a, & \text{otherwise} \end{cases}$$

as can be seen in these examples. We have

◇ oi. *ṛ* → mi. *i* after or before front vowel

- oi. *ṛṣi* ("seer") → pa. *isi*
- oi. *kṛmi* ("worm") → pa. *kimi* (see also pp. 62)
- u.at. **śṛthra* ("loose", *ra*-adjective of *śrath* ("to loosen, to resolve")) → pkt. *śithira* (in the *Ṛgveda*!), also a svarabhakti example

◇ oi. *ṛ* → mi. *u* after labial

- oi. *pṛcchati* ("he asks") → pa. *pucchati*

◇ oi. *ṛ* → mi. *i/a* otherwise

- oi. *ṛṇa* ("debt") → pa. *iṇa*
- oi. *kṛta* (PPP of *kṛ*) → pkt. *kida* (see subsection B.4.3, pp. 58)
- oi. *gṛha* ("house") → pa. *gaha*
- oi. *bhṛta* ("servant") → pa. *bhata*

B.4.3. Consonants

General rules

We now turn to consonants. The development is often complicated and differs between Middle Indian languages. We give a rough outline of phonetic changes first, before turning to examples. You need to remember:

◇ *n* is typically cerebralized, *d* and *t* are often cerebralized near *r* or *ṛ*.

◇ The three sibilants are reduced to one, normally *s*.

◇ *s* before *p* or *k* may aspirate the plosive and vanish.

◇ Unvoiced plosives tend to become voiced.

◇ Final plosives are dropped.

◇ Intervocal non-aspirated gutturals, palatals and dentals, both unvoiced and voiced, often disappear.

◇ In clusters,

- when two plosives meet, we have backward assimilation;
- when different types of sounds meet, assimilation (backward or forward) occurs according to some hierarchy given below.

We now turn to the individual rules, roughly in the above order.

Cerebralization

◇ Dentals often become cerebral, in particular near *r* or *ṛ*:

- oi. *patita* (PPP of *pat*, "to fall") → pkt. *paḍida*
- oi. *prathama* ("first, prior, principal") → pkt. *paḍhama*

◇ *n* is often cerebralized as in

- oi. *nayana* ("driving, eye") → pkt. *ṇaaṇa*
- oi. *bhôjana* ("eating, nutrition") → pkt. *bhoaṇa*

Other cerebral peculiarities

We sometimes see lenition, as in

$$\text{mi. } t/ṭh/th \quad \rightarrow \quad \text{mi. } d/ḍh/dh$$

This developement is best seen as one occuring within Middle Indian:

◇ skt./pkt. *kuṭumba* ("family") → pkt. *kuḍumba*

◇ skt./pkt. *vaṭa* ("fig tree") → pkt. *vaḍa*

ḍ is then sometimes changed into *ḷ* as in

◇ oi. *krīḍā* ("game") → pkt. *kīḷā*

Convergence of the three sibilants

The sound law according to which the three sibilants converge can be written as

$$\text{oi. } ś/ṣ/s \quad \rightarrow \quad \text{mi. } s$$

Examples are

◇ oi. *pra-viś-a-ti* ("he enters") → pa. *pa-vis-a-ti*

◇ oi. *bhāṣati* ("he speaks") → pa. *bhāsati*

◇ oi. *śaśa* ("hare") → pa. *sasa*

◇ oi. *śiṣya* ("pupil") → pa. *sissa* (see also pp. 62)

Aspiration, compensatory and otherwise

In some cases, *s* is dropped, but aspirates the accompanied plosive:

oi. *sp* → mi. *ph*
oi. *kṣ* → mi. *kh*

Thus, ***sP(h)*** is best seen as a Middle Indian development. Here are some examples:

◇ oi. *kṣatriya* ("warrior") → pkt. *khattia*

◇ oi. *kṣipta* (PPP of oi. *kṣip*) → pkt. *khitta*

◇ oi. *spṛṣati* ("touches") → pa. *phusati* ∼ pkt. *phusaï*

Alternatively, we may find *ch* rather than *kh*, as in

◇ oi. *kṣatta* ("wounded") → pa. *khatta* → pkt. *chaya*/*khaya*

◇ oi. *kṣetra* ("field") → pa. *khětta* → pkt. *chětta*/*khětta*

After a vowel, we have both compensatory aspiration for deleted *s* and compensatory doubling:

◇ oi. *akṣi*, n. ("eye") → pkt. *akkhi*

◇ oi. *asti* ("he is") → pkt. *atthi*

◇ oi. *hasta* ("hand") → pkt. *hattha*

Aspiration of both *k* and *p* may sometimes occur without the presence of *s*:

◇ oi. *kubja* ("crooked, bent") → pkt. *khujja*

◇ skt./pkt. *vaṭa* ("fig tree") → u.at. **vaṭha* → pkt. **vaḍha*

Intervocalic lenition or loss of non-aspirated plosives

Between vowels, we may find

oi. *g*/*j*/*d* → mi. ∅
oi. *k*/*c*/*t* → mi. ∅

Note that these plosives sometimes remain or that the unvoiced ones are voiced:

oi. *t* → mi. *d*

Examples:

◇ oi. *avalokita* ("looked at") → pkt. *ōlōia*

◇ oi. *êti* ("he goes") →

- Śaurasenī pkt. *ēdi*
- Māhārāṣṭrī pkt. *ēi*

◇ oi. *nakula* ("mongoose") → pkt. *naula*

◇ oi. *nagaram* ("town") → pkt. *nayara* (where *y* occurs to avoid hiatus)

◇ oi. *bhôjanam* ("eating, nutrition") → pkt. *bhoaṇa*

◇ oi. *latā* ("creeper") →

- Śaurasenī pkt. *ladā*
- Māhārāṣṭrī pkt. *laā*

◇ oi. *loka* ("world") →

- Śaurasenī pkt. *loga*
- Māhārāṣṭrī pkt. *lōa*

◇ oi. *śauca* ("cleanness") → pkt. *sōa*

◇ oi. *sakala* ("total, complete") → pkt. *saala*

◇ oi. *hita* (PPP of *dhā*) →

- Śaurasenī pkt. *hida*
- Māhārāṣṭrī pkt. *hia*

Note that these plosives sometimes remain or that the unvoiced ones are voiced. Examples for voiced consonants for unvoiced ones are

◇ oi. *athiti* ("guest") → pkt. *adhidi*

◇ oi. *kṛta* (PPP of *kṛ*) → pkt. *kida*

◇ oi. *gata* (PPP of *gam*) → pkt. *gada*

Intervocalic lenition or loss of aspirated plosives

In line with the above sound laws

oi. *k/c/t* → mi. ∅
oi. *g/j/d* → mi. ∅

we find

oi. *kh/gh* → mi. *h*
oi. *th/dh* → mi. *h*
oi. *ph/bh* → mi. *h*

Consider these examples:

◇ oi. *atha* ("and, now") →
- Śaurasenī pkt. *adha*
- Māhārāṣṭrī pkt. *aha*

◇ oi. *katham* ("how? in what manner?") →
- Śaurasenī pkt. *kadham*
- Māhārāṣṭrī pkt. *kaham*

◇ oi. *nakha* ("finger nail") → pkt. *ṇaha*

◇ oi. *mukha* ("mouth") → pkt. *muha*

◇ oi. *mêgha* ("cloud") → pkt. *mēha*

◇ oi. *vadhū* ("bride") → pkt. *vahū*

But *ph* is often retained at the beginning of a second member of a compound:

◇ oi. *citra-phalakam* ("painting") → pkt. *citta-phalaa*

Consonants: initial palatalization

Word-initially, palatal sounds evolve in Middle Indian through different avenues. The sound law

oi. y → mi. j

can readily be witnessed in

◇ oi. *yathā* → pkt. *jathā*

◇ oi. *yuddha* ("battle") → pkt. *juddha*

◇ oi. *yôgī* → pkt. *jōgī*

but see also (in non-initial position): oi. *āryaputra* → pkt. *ajjaütta*

Dentals together with *y* may also produce palatals:

oi. *ty* → mi. *c*
oi. *dy* → mi. *j*
oi. *dhy* → mi. *jh*

We have these examples:

◇ oi. *tyāga* ("abandonment") → pa. *cāga*

◇ oi. *dyūta* ("gambling") → pa. *jūta*

◇ oi. *dhyānam* ("meditation") → pa. *jhāna*

Consonants: initial peculiarities

We can note some further initial peculiarities. Word-initial aspiration of *k* and *p* sometimes occurs without *s* before them:

oi. *k/p* → mi. *kh/ph*

In the oi. root *bhū*, we often have mi. *h* for *bh* and find

◇ oi. and pa. *bhav-a-ti* ("he is") versus pkt. *ho-ti* or even *hoï*

◇ oi. *bhav-i-ṣy-a-ti* ("he will be") → pkt. *havissadi* (see subsection B.4.3)

Consonants: other peculiarities

Oi. *p* may develop into *v* or may be dropped: Since the loss of *p* occured via *b* and *v*, *b* and *v* are also sometimes dropped:

◇ oi. *rūpam* ("form, beauty") → pkt. *rūa*

Oi. *y* tends to be dropped:

◇ oi. *priya* ("dear, pleasant") → pkt. *pia* (see subsection B.4.3)

◇ oi. *vi-yoga* ("disjunction, separation") → pkt. *vioa*

Clusters: Backward assimilation for non-palatal plosives

If two non-palatal plosives meet, the first is assimilated to the second. I.e., we have sound laws like

oi. *pt* → mi. *tt*

It is easy to find examples

◇ oi. *utkramati* ("he ascends") → pa. *ukkamati*

◇ oi. *dugdha* ("milk") → pa. *duddha*

◇ oi. *labdha* (PPP *labh*, "to obtain") → pa. *laddha*

◇ oi. *vāk-pati-rāja* ("king who is also a master of language") → pkt. *vap-paï-rāa*

◇ oi. *śabda* ("sound") → pa. *sadda*

◇ oi. *sakta* ("attached") → pa. *satta* (as in oi. **bodhisakta* ("who clings to enlightment") → *bodhisatta*)

◇ oi. *sapta* ("seven") → pa. *satta*

Clusters: hierarchical assimilation

The case of clusters involving two non-palatal plosives has been considered above. We now turn to many other possibilities. It turns out that a hierarchy of sounds provides a generalization of many different sound laws. This is the hierarchy:

$$P^{\texttt{unpal}} > S > N > P^{\texttt{pal}} > l > v > y > r$$

The hierarchy rule states that the stronger sound influences the weaker one. Here, assimilation can be backward or forward. This hierarchy can also be applied in word-initial positions, but then only one consonant can remain. Thus, we have simple consonants in word-initial positions and double consonants in medial positions.

Non-palatal plosives are strongest:

◇ oi. *agni* ("fire") → pa. *aggi*

◇ oi. *ardha* ("half") → mi. *addha*/*aḍḍha*

◇ oi. *alpa* ("small ") → pa. *appa*

◇ oi. *kalpa* ("eon, ritual, rule") → pa. *kappa*

◇ oi. *triloka* ("three worlds") → pkt. *tilōa*

◇ oi. *tvacam* ("skin") → pa. *taco*

◇ oi. *durbala* ("weak") → pkt. *dubbala*

◇ oi. *dṛṣṭi* ("sight") → pkt. *diṭṭhi*

◇ oi. *dṛṣya* ("visible") → pkt. *dassa*

◇ oi. *dvija* ("twice born") → pa. *dija*

◇ oi. *pakva* ("cooked, ripe") → pa. *pakka*

◇ oi. *bharta* → mi. *bhatta*

◇ oi. *yogyā* ("exercise") → pa. *yŏggā* (law of morae)

◇ oi. *rātrī* ("night") → pa. *rattī* (law of morae)

◇ oi. *śak-no-ti* ("he is able") → pa. *sak-kō-ti*

Palatals are weaker than nasals:

◇ oi. *ājñāpayati* ("he orders") → pkt. *āṇāvēdi*

◇ oi. *yajñam* ("sacrifice") → pkt. *jaṇṇa*

Sibilants occupy second position in hierarchy:

◇ oi. *śśvara* ("lord") → pa. *issara*

◇ oi. *dṛṣya* ("visible") → pa. *dassa*

◇ oi. *varṣa* ("rain") → pa. *vassa*

◇ oi. *śyāma* ("dark") → pa. *sāma*

◇ oi. *sahasra* ("thousand") → pa. *sahassa*

◇ oi. *sravati* ("it flows") → pa. *savati*

r is weakest:

◇ oi. *argha* ("price") → pkt. *aggha*

◇ oi. *ardha* ("half") → pkt. *addha*

◇ oi. *ava-tīrṇa* ("come down", PPP of *tṝ*, see p. 118) → pkt. *o-ïṇṇa*

◇ oi. *karṇa* ("ear") → pa. *kaṇṇa*

◇ oi. *priya* ("dear, pleasant") → pa. *pia*

◇ oi. *grāma* ("village") → pa. *gāma*

◇ oi. *cakram* ("wheel") → pa. *cakka*

◇ oi. *durlabha* ("difficult to obtain") → pa. *dullabha*

◇ oi. *dharma* ("religion, duty") → pa. *dhamma*

◇ oi. *putra* ("son") → pa. *putta*

◇ oi. *mārga* ("path") → pkt. *magga*

◇ oi. *vajra* ("thunderbold") → pkt. *vajja*

◇ oi. *varga* ("class, tribe") → pa. *vagga*

◇ oi. *vipra* ("Brahmin") → pa. *vippa*

◇ oi. *vyagra* ("indifferent, undisturbed") → pa. *vagga*

◇ oi. *vrīhi* ("rice") → pa. *vīhi*

Exceptions to the above hierarchy concern three groups:

1. Dental + *y* yields new palatals (where voice and aspiration remains):
   ◇ oi. *tyāga* ("abandonment") → pa. *cāga*

- ◇ oi. *dyūta* ("gambling") → pa. *jūta*
- ◇ oi. *dhyānam* ("meditation") → pa. *jhāna*

2. Cluster *kṣ* may regularly yield *kh* as in oi. *kṣatriya* ("warrior") → pkt. *khattia*

3. Nasals before plosives remain:
   - ◇ oi. *aṅka* ("mark, sign") → pa. *aṅka*
   - ◇ oi. *kampa* ("tremble") → pa. *kampa*
   - ◇ oi. *danta* ("tooth") → pa. *danta*
   - ◇ oi. *pañca* ("five") → pa. *pañca*
   - ◇ oi. *mantram* ("spell") → pa. *manta*

B.4.4. A few New Indian developments

Building on mi. features, the modern Indian languages developed. With respect to Hindi (hi.), we find three major developments:

1. Middle Indian double consonants are simplified with two effects:
   a) The preceding vowel is lengthened (compensatory lengthening).
   b) In Hindi (more than in some other New Indian langugages), this compensatory lengthening often (not always) occurs together with nasalisation.

2. A very similar development is witnessed for *NP* sequences:
   a) The consonant cluster is simplified and only the plosive remains.
   b) The preceding vowel is lengthened and nasalised. Of course, since the nasal is present, here, in the first place, this nasalisation is no surprise.

3. In Apabhraṃśa, Middle Indian final long vowels are shortened. In New Indian, final short vowels are lost.

Together, these three developments clearly show in these examples.

1. Double consonants simplified without nasalisation:
   - ◇ oi. *dugdha* ("milk") → pa. *duddha* → hi. *dūdh*
   - ◇ oi. *rātrī* ("night") → pa. *rattī* → hi. *rāt*
   - ◇ oi. *sapta* ("seven") → pa. *satta* → hi. *sāt*

2. Double consonants simplified with nasalisation (where $\widetilde{\bar{a}}$ stands for nasalised $\bar{a}$):
   - ◇ oi. *akṣi*, n. ("eye") → pkt. *akkhi* → hi. $\widetilde{\bar{a}}kh$
   - ◇ oi. *sarpa* ("serpent") → pa. *sappa* → hi. $s\widetilde{\bar{a}}p$

3. Nasal lost under nasalisation and compensatory lengthening

◇ oi. *aṅka* ("mark, sign") → pa. *aṅka* → hi. $\widetilde{a}k$

◇ oi. *kampa* ("tremble") → pa. *kampa* → hi. $k\widetilde{a}p$

◇ oi. *danta* ("tooth") → pa. *danta* → hi. $d\widetilde{a}t$

◇ oi. *pañca* ("five") → pa. *pañca* → hi. $p\widetilde{a}c$

B.5. Sound laws of other ie. languages

Linking Sanskrit words to words in English or German, or to Latin and Greek foreign words is helpful in learning the abundant Sanskrit vocabulary. Therefore, we now give a summary of the important sound laws involving these languages. Many of the sound laws for Old Indian have already been considered in the previous sections. I apologize in advance for favouring High German which will take quite a lot of pages. Good for German speakers, mainly useless for others.

B.5.1. Vowels and diphthongs

The most dramatic vowel changes in the Indo-European language family concerns the Indo-Iranian shift towards a and $\bar{a}$. Sometimes one can reconstruct Indo-European words by taking the Sankrit consonants and the Greek vowels. For example,

$$\text{ie. } {}^*bher \quad \rightarrow \quad \begin{cases} \text{oi. } bhar\text{-} \\ \text{ogr. } pher\text{-} \\ \text{lat. } fer\text{-} \\ \text{e. } bear \end{cases}$$

We will deal with a few vowel changes, only. For Latin, we need to remember

LAT_V			
	ie. e before u or v	→	lat. o
	olat. ei	→	lat. $\bar{\imath}$

With respect to the first line, we have ie. ${}^*nevos$ ("new") → lat. *novus* whence many foreign words such as *novice* or *re-novate*. In contrast the Greek-based foreign words show e, as in *neo-liberal* or *Neolithic*.

For the second line, consider lat. *dīcere* ("to say") that goes back to olat. *deicere* with PPP in zero grade *dictum*. See *diś* in the dictionary.

For the benefit of German speakers, we mention a few sound laws that will become important later on. Germanic unstressed syllables tend to be dropped or turned into the "schwa"-sound (which is nicely called "Murmelvokal" in German). Examples are e. *seven* and nhg. *sieben* and e. *eat* versus nhg. *essen*.

On top, consider these (selective!) developments for New High German:

NHG_V			
	ie. a/o	→	nhg. a
	ie. $\bar{a}/\bar{o}$	→	nhg. $\bar{u}$
	ie. e	→	nhg. i

For the first line, consider

◇ ie. $^*okt\bar{o} \rightarrow$ lat. $oct\bar{o} \sim$ nhg. *acht*

◇ lat. *toga* $\sim$ nhg. *Dach*

◇ lat. *mon*ere $\sim$ nhg. *mahn*en

The second line finds some confirmation the the pronounced, not the written, German:

◇ lat. *cārus* ("dear", fr. *cher*) $\sim$ e. *whore* $\sim$ nhg. *Hure*

◇ ie. $^*b^hr\bar{a}t\bar{e}r \rightarrow$ lat. *frāter* $\sim$ nhg. *Bruder*

And here two examples for the third line:

◇ ie. $^*b^hend^h \rightarrow$ oi. *bandh* $\sim$ nhg. *binden*

◇ ie. $^*esti \rightarrow$ lat. *est* $\sim$ oi. *asti* $\sim$ nhg. *ist*

B.5.2. Syllabic Indo-European nasals and liquids

Indo-European knew syllabic nasals and liquids, probably both short and long. Concentrating on the short ones, we have the following sound laws for syllabic nasals:

$$\textbf{IE\_SY\_}\boldsymbol{N} \qquad \text{ie. } \underset{\circ}{n}/\underset{\circ}{m} \quad \rightarrow \quad \begin{cases} \text{oi.} & \begin{cases} an/am & \text{bef. vowel} \\ a/a & \text{otherwise} \end{cases} \\ \text{ogr.} & \begin{cases} an/am & \text{bef. vowel} \\ a/a & \text{otherwise} \end{cases} \\ \text{lat.} & \begin{cases} in/im & \text{word-initial} \\ en/em & \text{otherwise} \end{cases} \\ \text{e. } un/um \sim \text{nhg. } un/um \end{cases}$$

A very instructive example is the negating prefix ie. $\underset{\circ}{n}$.

◇ Sanskrit examples between consonants: *a-gatika* ("without way out"), *a-kriya* ("lazy"), *a-kāla* ("wrong time"), *a-nāyaka* ("without leader"), *a-ratha* ("without charriot"), *a-putra* ("without son")

◇ Sanskrit examples before vowel: *an-anta* ("without end"), *an-ātma-jña* ("not knowing oneself")

◇ Germanic examples: nhg. *un-gläubig*, e. *un-happy*, e. *un-believable*

◇ Greek-based B: *a-theist*, *an-archy*

◇ Latin-based B: *in-effective*, *im-perfect*

We sometimes have mixtures such as

◇ *a-social* (the first part Greek, the second Latin)

◇ German *un-effektiv* (German-Latin)

The past participle is build with the zero grade. Compare nhg. *ge-bund-en* with oi. *bad-dha*, both from ie. $^*bh\underset{\circ}{n}dh$.

Syllabic liquids follow these sound laws:

$$\textbf{IE\_SY\_L} \qquad \text{ie. } \underset{\circ}{r}/\underset{\circ}{l} \quad \rightarrow \quad \begin{cases} \text{oi.} & \begin{cases} \text{ṛ or ḷ (!)} & \text{between cons.} \\ ur/ur & \text{before vowels, after labials} \\ ir/ir\ (?) & \text{before vowels, not after labials} \end{cases} \\ \text{ogr.} & \begin{cases} (ra,ar)/(la,al) & \text{bef. vowel} \\ a/a & \text{otherwise} \end{cases} \\ \text{lat.} & \begin{cases} (or,ur)/(ol,ul) & \text{betw. cons.} \\ er/el & \text{otherwise} \end{cases} \\ \text{e. } or/ol \sim \text{nhg. } or/ol \end{cases}$$

Consider a few examples

◇ ie. $^*w\underset{\circ}{r}k^w \rightarrow$ oi. *vṛka* ∼ e. *wolf* ∼ nhg. *Wolf*

◇ ie. $^*d\underset{\circ}{r}k\acute{}\rightarrow$ oi. *dṛś*

◇ ie. $^*g^w\underset{\circ}{r}u \rightarrow$ oi. *guru* ∼ ogr. *baru* as in the B *baro-meter*

◇ ie. $^*p\underset{\circ}{l}h_1u \rightarrow$ oi. *puru*

Note the exception of word-initial ie. *m* before a resonant:

◇ oi. *mlāta* (“faded, tanned (said of leather)”)

◇ oi. $\sqrt{}$ *mnā* (“to mention”).

B.5.3. Ablaut in English and German

In English and German, we have weak and strong verbs. An example of a weak verb is

	English	German
infinitive	to *love*	*lieb*en
imperfect	I *loved*	ich *lieb*te
perfect	I have *loved*	ich habe ge*lieb*t

where the root vowel does not change. In strong verbs, the root vowel changes due to vowel gradation (ablaut). Consider, for example, the German *werden* with

full grade *er*:	*werden* ("to become")
o-grade *or*:	*ward* ("he became"), *a* as in ie. $^*okt\bar{o} \rightarrow$ nhg. *acht*
zero grade $\underset{\circ}{r}$:	*geworden* (PPP "become"), as in *Wolf*, p. 67

According to this pattern, we also find (due to sound laws or due to analogy):

◇ *werben, warb, geworben*

◇ *werfen, warf, geworfen*

◇ *bergen, barg, geborgen*

◇ *sterben, starb, gestorben*

◇ *helfen, half, geholfen*

With *n* instead of *r*, we have

full grade *en*:	*finden* ("to find")
o-grade *on*:	*fand* ("he found"), *a* as in ie. $^*okt\bar{o} \rightarrow$ nhg. *acht*
zero grade $\underset{\circ}{n}$:	*gefunden* (PPP "found")

The English language also shows this ablaut pattern:

	English	German
full grade	sing	singen
o-grade	sang	sang
zero grade	sung	gesungen

B.5.4. Consonants: From Indo-European to Greek, Latin, and Germanic

Non-aspirated consonants

ie. *p/t/k* and ie. *b/d/g*

remain the same in Greek and Latin as in Indo-European. That part is easy.

Voiced aspirated sound are more interesting.

OGR	ie. *bh/dh/gh*	→	ogr. *ph/th/kh* (written)
	ie. $k^w/g^w/g^wh$ before cons., *a*, *i*, or *o*	→	ogr. *p/b/ph* (written)
	ie. $k^w/g^w/g^wh$ before *e*	→	ogr. *t/d/th* (written)
	ie. $k^w/g^w/g^wh$ before or after nasal	→	ogr. *k/g/ch* (written)
	ie. *v*	→	ogr. ∅
	ie. *s*	→	ogr. *h*

You will not forget the first line. It is responsible for the fact that you can often recognize Greek foreign words by

◇ *ph*: *philosophy, phobia*

◇ *th*: *theology, theatre, mathematics*

◇ *ch*: *chlorine, Christopher*

Lines 2 through 4 are concerned with ie. labiovelars. While the velar element is lost, the result varies a lot depending on the environment. Aspirated voiced labiovelars undergo two changes. First, they turn into voiced labial, dental, or velar sounds, respectively. Second, they undergo the changes of the first line. Thus, g^wh before e finally turns into *th* as in gr. B *thermic* (s.v. *gharma*).

For the fifth line of **OGR** compare

◇ lat. *vox* with gr. B *epic* (see dictionary at *vac*)

◇ lat. B *vicinity* with gr. B *economics*

◇ oi. *kravis* with ogr. *kreas* ← ie. $^*kreuh_2s$-

Turning to the sixth line, ie. *s* is voiceless and remains in most ie. languages. However, Greek is an interesting exception. The contrast of ie. *s*, preserved in Latin, with Greek *h* clearly shows up in these examples:

lat. *sex*	∼	agr. *hex* (as in *hexagon*)
lat. *septem*	∼	agr. *hepta* (as in *heptagon*)
it. B *sal-to*	∼	agr. *hal-ma* (as in board game)
e. *same*	∼	gr.-lat. B *homo-sexual*
lat. B *semi-final*	∼	gr. B *hemi-sphere*
lat. B *serpent*	∼	gr. B *herpes* (a skin desease, spreading like a snake)

Similar to Sanskrit, but in an independent development, Grassmann's law applies also in Greek. The first of two aspirated sounds becomes deaspirated:

OGR_DA ie. $C^{\texttt{asp}}VC^{\texttt{asp}}$ → oi. $C^{\texttt{unasp}}VC^{\texttt{asp}}$

In Latin, the development ie. $b^h/d^h/g^h$ is complicated. It pays to remember

LAT_*f* ie. $b^h/d^h/g^h$ word-initial → lat. *f*

For example, ie. $^*b^hreg$ leads to the lat. FWs *frag-ile* or *fraction*. Second, ie. g^w lost the velar element:

LAT_*v* ie. g^w word-initial → lat. *v*

See lat. B *vital* (s.v. $j\bar{\imath}v$).

An ie. *s* between vowels regularly turned into Latin *r*, a process sometimes called rhotazism:

LAT_*sr*	ie. *s* intervocalic	→	lat. *r*

See lat. B *vīrus* (s.v. *viṣa*).

A final Latin sound law that is often applied concerns two dentals that come into contact. They are replaced by *ss*:

LAT_*DD*	ie. *DD*	→	lat. *ss*

The consonantal development from Indo-European to Germanic is often called the "first consonant shift". Most Germanic consonants remain in English.The first consonant shift is governed by these sound laws:

GER	ie. *p/t/k*	→	germ. *f/þ/h*
	ie. *b/d/g*	→	germ. *p/t/k*
	ie. $b^h/d^h/g^h$	→	germ. *b/d/g*

where *þ* (first line) represents the voiceless interdental spirant. In words:

◇ Voiceless unaspirated *p/t/k* turn into fricatives. See

- lat. *pecus* („cow") as in the B *pecuniary* ∼ e. *fee*
- Latin based B *pedal* or *pedicure* ∼ e. *foot*.

◇ Voiced unaspirated plosives turn voiceless. This can be seen from

- lat. *ego* ∼ Berlin low German *icke*
- ital. *gelato* („ice") ∼ e. *cold*.

◇ Voiced aspirated sounds lose the aspiration. From ie. $^*b^hreg$ one obtains lat. B *frag-ile* ∼ e. *break*

B.5.5. Consonants: From Germanic and English to New High German

The second consonant shift (NHG_*C*)

The so-called first consonant shift refers to developments from ie. to germ. The second consonant shift concerns changes from germ. to High German. These changes are peculiar to German (and Swiss German), but do not occur in English, Danish, Swedish, low German etc.:

NHG_C

germ. *t*	→	nhg.	*s/ss* after vowel *ts* otherwise
germ. *k*	→	nhg.	*ch* after vowel *k* otherwise
germ. *p*	→	nhg.	*f/ff* after vowel *pf* otherwise
germ. *þ*	→	e. *th* ∼ nhg. *d*	
germ. *d*	→	e. *d* ∼ nhg. *t*	

where *þ* (fourth line) represents the voiceless interdental spirant. Since English often preserves the Germanic consonants, we compare English (rather than Germanic or Gothic) with New High German. For the first line of **NHG_C**, consider these examples after a vowel:

e. *eat* ∼ nhg. *essen*	e. *nettle* ∼ nhg. *Brennnessel*
e. *what* ∼ nhg. *was*	e. *let* ∼ nhg. *lassen*
e. *out* ∼ nhg. *aus*	e. *shoot* ∼ nhg. *schießen*
e. *white* ∼ nhg. *weiß*	e. *goat* ∼ nhg. *Geiß*
e. *hot* ∼ nhg. *heiß*	e. *sprout* ∼ nhg. *sprießen*

"Otherwise" in the above rule means "not after vowel" and hence word-initial or after consonants as in these examples:

e. *town* ∼ nhg. *Zaun*	e. *timber* ∼ nhg. *Zimmer*
e. *tide* ∼ nhg. *Zeit*	e. *tongue* ∼ nhg. *Zunge*
e. *tear* ∼ nhg. *zerren*	e. *fif-ty* ∼ nhg. *fünfzig*
e. *till* ∼ nhg. *Ziel*	e. *ten* ∼ nhg. *zehn*

The second line of **NHG_C** concerns germ. *k*. We observe a word-initial change in Switzerland. For other High German speakers, a change occurs only "otherwise":

e. *weak* ∼ nhg. *weich*	e. *break* ∼ nhg. *brechen*
e. *duck* ∼ nhg. *tauchen*	e. *seek* ∼ nhg. *suchen*
e. *lock* ∼ nhg. *Loch*	e. *spoke* ∼ nhg. *Speiche*
lat. *cocus* → e. *cook* ∼ nhg. *Koch*	lat. *sīcilis* → *Sichel*

A final interesting example is lat. *sēcūrus* (← *sē cūrā*, "without worry, carefree → *sicher*").

We now turn to the remaining unvoiced unaspirated sound, *p*. Similar to *t*, we have changes "after vowel" and "otherwise":

e. *path* ∼ nhg. *Pfad*	e. *hip* ∼ nhg. *Hüfte*
e. *leap* ∼ nhg. *laufen*	e. *heap* ∼ nhg. *Haufen*
e. *sleep* ∼ nhg. *schlafen*	e. *sheep* ∼ nhg. *Schaf*

If we have a clear Latin-Germanic equation without the second consonant shift, the solution is borrowing as in

◇ lat. *planta* → B in English *plant* ∼ B in German *Pflanze*

◇ lat. *piper* → B in English *pepper* ∼ B in German *Pfeffer*

The developments for Germanic *p/t/k* are considered in the first three lines of **NHG_C**. Voiced labials and velars do not undergo any further changes. However, with respect to dentals, we observe the sound laws presented in the last two lines of **NHG_C**. Examples for the fourth line are easy to find:

e. *bath* ∼ nhg. *Bad*
e. *think* ∼ nhg. *dünken* („mich *dünkt*“)
e. *brother* ∼ nhg. *Bruder*
e. *earth* ∼ nhg. *Erde*
e. *three* ∼ nhg. *drei*
e. *through* ∼ nhg. *durch*
e. *thorn* ∼ nhg. *Dorn*
e. *thirst* ∼ nhg. *Durst*
e. *oath* ∼ nhg. *Eid*
e. *path* ∼ nhg. *Pfad*
e. *smith* ∼ nhg. *Schmied*
e. *that* ∼ nhg. *das/dass*
e. *thief* ∼ nhg. *Dieb*
e. *thing* ∼ nhg. *Ding*
e. *leather* ∼ nhg. *Leder*

Finally, for Germanic and English *d* we point to these examples:

e. *bed* ∼ nhg. *Bett*
e. *bed* ∼ nhg. *Beet*
e. *board* ∼ nhg. *Brett*
e. *ride* ∼ nhg. *reiten*
e. *day* ∼ nhg. *Tag*
e. *deep* ∼ nhg. *tief*
e. *door* ∼ nhg. *Tür*
e. *do* ∼ nhg. *tun*
e. *spade* ∼ nhg. *Spaten*
e. *good* ∼ nhg. *gut*
e. *red* ∼ nhg. *rot*
e. *ladder* ∼ nhg. *Leiter*
e. *dead* ∼ nhg. *tot*
e. *seed* ∼ nhg. *Saat*
e. *drink* ∼ nhg. *trinken*
e. *duck* ∼ nhg. *tauchen*
e. *deer* ∼ nhg. *Tier*
e. *lead* ∼ nhg. *leiten*
e. *mood* ∼ nhg. *Mut*
e. *daughter* ∼ nhg. *Tochter*
e. *tide* ∼ nhg. *Zeit*
e. *under* ∼ nhg. *unter*
e. *wide* ∼ nhg. *weit*
e. *widow* ∼ nhg. *Witwe*
e. *dear* ∼ nhg. *teuer*
e. *shoulder* ∼ nhg. *Schulter*
e. *need* ∼ nhg. *Not*
e. *fold* ∼ nhg. *falten*

Exceptions

Of course, no rules without exception (which gives rise to new, refined rules):

1. Germ. *t* remains after *f*, *s*, or *ch*:

- ◇ lat. *captivus* ∼ nhg. *Haft*
- ◇ e. *stone* ∼ nhg. *Stein*, but not *Szein* (just you try)
- ◇ e. *starve* ∼ nhg. *sterben*
- ◇ e. *is* ∼ nhg. *ist* ← ie. **esti* → oi. *asti* (where *s* prevented the shift of *t* in both the first and the second consonant shifts)

2. Germ. *t* remains before *r*: e. *tree*, *true* ∼ nhg. *Treue, Trost*
3. Germ. *d* remains after *n*: e. *hound* ∼ nhg. *Hund*
4. Germ. *k* is not shifted if *r* follows immediately
   - ◇ e. *acre* ∼ nhg. *Acker*
   - ◇ e. *bite* ∼ nhg. *bitter* in contrast to nhg. *Biss*

New High German more conservative than English

English is closer to Germanic than New High German. However, sometimes, New High German is more conservative than English:

NHG_E	germ. *b*	→	nhg. *b*	∼	e. *v/f*
	germ. *ch* not w.-i.	→	nhg. *ch*	∼	e. ∅ (written *gh*)
	germ. *g* not w.-i.	→	nhg. *g*	∼	e. ∅ (written *i* or *y*)
	germ. *g* w.-i.	→	nhg. *g*	∼	e. *y*
	germ. *k*	→	nhg. *k*	∼	e. *ch* (near oe. *i* or *e*)
	germ. *n/m*	→	nhg. *n/m*	∼	e. ∅ (before *f*, *th*, or *s*)

The first line of **NHG_E** is exemplified by

e. *life* ∼ nhg. *Leib*	e. *live* ∼ nhg. *leben*
e. *deaf* ∼ nhg. *taub*	e. *dove* ∼ nhg. *Taube*
e. *loaf* ∼ nhg. *Laib* (Brot)	e. *leaf* ∼ nhg. *Laub*
e. *have* ∼ nhg. *haben*	e. *seven* ∼ nhg. *sieben*
e. *love* ∼ nhg. *lieben*	e. *starve* ∼ nhg. *sterben*
e. be*lieve* ∼ nhg. g*lauben*	e. *evil* ∼ nhg. *übel*

The second and third lines of **NHG_E** show how velar sounds turn mute in English, i.e., we find

e. to *fight* ∼ nhg. *fechten*	e. *night* ∼ nhg. *Nacht*
e. *knight* ∼ nhg. *Knecht*	e. *weight* ∼ nhg. Ge-*wicht*
e. *plight* ∼ nhg. *Pflicht*	e. *eight* ∼ nhg. *acht*

and

e. *rain* ∼ *Regen*	e. *way* ∼ *Weg*
e. to *lie* ∼ *liegen*	e. *many* ∼ *mannig*-faltig
e. to *lie* ∼ *lügen*	e. to *say* ∼ *sagen*
e. *day* ∼ Tag	e. *nail* ∼ *Nagel*

While the third line concerns germ. *g* within a word, the fourth line is about word-initial *g*:

◇ e. *yellow* ∼ *gelb*

◇ e. *yawn* ∼ *gähnen*

We also find e. *g* in this position, like in e. for*get* ∼ nhg. „ver*gessen*“. This is an Old Nordic import into the English language.

The fifth line is justified by these examples:

◇ e. *church* ← oe. *cirice* ∼ nhg. *Kirche*

◇ e. *choose* ← oe. *ceosan* ∼ nhg. *kiesen* (old for “examine, choose”)

◇ e. *chin* ∼ *Kinn*

Finally (sixth line of **NHG_E**), we have the loss *n* or *m* in English:

e. *five* ∼ *fünf*	e. *tooth* ∼ *Zahn*
e. *wish* ∼ *wünschen*	e. *other* ∼ *anderer*
e. *us* ∼ *uns*	e. *goose* ∼ *Gans*

B.5.6. Consonants: From Indo-European to Germanic and English

The previous two subsections dealt with the first and the second consonant shift, respectively. Putting them together, one gets these examples:

◇ lat. *trēs* ∼ e. *three* ∼ nhg. *drei*

◇ lat. *tū* ∼ e. *thou*(old form) ∼ nhg. *du*

◇ gr. B *cardiology* ∼ fr. *cordialement* ∼ e. *heart* ∼ nhg. *Herz*

◇ lat. B *dental* ∼ e. *tooth* ∼ nhg. *Zahn*

◇ *Dun* (Laoghaire) (Irish town near Dublin) ∼ e. *town* ∼ nhg. *Zaun*

◇ gr. B *dermatology* ← ie. **der* (“to tear (an animal’s skin from the body)”) → e. *tear* („zerren, reißen“) ∼ nhg. *zerren*

An important class of regular exceptions comes under the heading of Verner’s law. If ie. *p/t/k/s* (not word-initial) do not follow immediately the ie. accent, we have

VER ie. $p/t/k/s$ not word-initial, no immediately after ie. accent
$\rightarrow$ germ. $b^{\texttt{fric}}/d^{\texttt{fric}}/g^{\texttt{fric}}/r$
$\rightarrow$ $\begin{cases} \text{e. } v/th/g/r \\ \text{nhg. } b/t/g/r \end{cases}$

where "fric" stands for fricative. These sounds are consonants produced by forcing air through a narrow channel. Sibilants (like oi. s or $ś$) are special fricatives where the tongue directs the air over the edge of the teeth. That the Germanic sounds are fricative is not obvious from German where we have t for both germ. d and germ. $d^{\texttt{fric}}$:

NHG_C	germ. d	$\rightarrow$	e. d (example *red*)	$\sim$	nhg. t (example *rot*)
VER	germ. $d^{\texttt{fric}}$	$\rightarrow$	e. *th* (example *father*)	$\sim$	nhg. t (example *Vater*)

The fricative nature shows more clearly in English words like *father*. Indeed, ie. $^*ph_2t\acute{e}r$ (where $\acute{e}$ is both long and stressed) is a good example for Verner's law. The ie. stress immediately follows t and hence we get germ. $d^{\texttt{fric}}$.

Otherwise, we have the (more common) development:

NHG_C ie. $p/t/k/s$ word-initial or not immediately after ie. accent
$\rightarrow$ germ. $f/þ/h/s$
$\rightarrow$ nhg. $f/d/h/s$
$\sim$ e. $f/th/h/s$

where the example of ie. $^*b^hr\acute{a}t\bar{e}r$ yields e. *brother* $\sim$ nhg. *Bruder*.

B.6. Sequence of sound laws

Sound laws are valid only for a limited time period. The sequence of sound laws is sometimes relevant. I hope that these sequences are not too far off the mark:

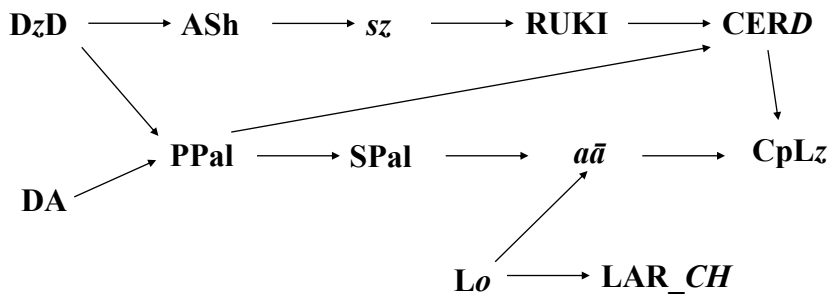

Figure B.3.: Sequence of sound laws (tentatively)

PPal → **SPal**	by *śiras* (p. 372)
PPal → **Cer*D***	by *viṣṭa* (p. 114)
D*z*D → **CCl** → **CpL*z***	by *dehi* (p. 48)
CCl → **SY_*N***	by *hiṃsā* (p. 135)
D*z*D → **ASh**	by *agdha* (p. 47)
DA → **PPal**	by *juhôti* (p. 86)
DA → **SPal**	by *jaghāna* (p. 191)
ASh → *sz* → **RUKI** → **Cer*D*** → **CpL*z***	by *ūḍha* (p. 49)
SPal → ***aā***	by *jagāma* (p. 33)
L*o* → ***aā***	by *bhar-ā-mas* (p. 33)
L*o* → **Lar_*CH***	by *mārayati* versus *janayati* (p. 33)
L*o* → **Lar_*V*** (ie. h_3e→ ie. *o*)	by oi. *avi* versus lat. *ovis* (p. 263)
aā → **CpL*z***	by *voḍhum* (p. 48)
sz → **CpL*z***	by *voḍhum* (p. 48)
RUKI → **Cer*D***	by *iṣṭa* (p. 41)
Lar_*CH*, **Lar_*V*** → **DA**	by *duhitar* (p. 52)

The arrows indicate that one sound law was applied before another one in relevant instances. This does not imply that the opposite order is ruled out for other words. After all, the application of one rule may provide the very environment that allows application of another one. Putting these different sequences together, a network of sound laws results that is depicted in fig. B.3.

Another, quite different question is whether one sound law was only applied after another one could not have been active any more. |

C. Grammar: verbal system

C.1. Roots

Learners of Sanskrit are used to memorize

bhud, bhôdati
vas, vasati
pat, patati
...

where

◇ *bhud, vas*, and *pat* are referred to as oi. roots and

◇ *bhôdati* etc. are the forms for the 3. pers. sg. present tense.

There is, of course, nothing wrong with memorizing *pat, patati*. Note, however, that the oi. root is a (helpful) grammatical fiction. It is regularly used to derive root nouns (subsection C.4.1), the passive voice (subsection C.4.7), and the past participle (pp. 109).

For verbs in the first class, the present-tense forms are ideally given in the full grade and the oi. root in the zero grade, as shown by *bhud, bhôdati* (see chapter B, section B.2.4 which you should now read for the fourth time). However, we do not always see the oi. root in zero grade for two different reasons (two extra reasons are given below):

1. The oi. root may be unpronounceable (the zero grade of *pat* should be **pt*, but neither *p* nor *t* can become syllabic). (But even here, we can point to the aorist *a-pa-pt-a-t*.)

2. The regular result may be "too far off". Consider the oi. root *vas* whose zero grade would be *us* and then, by **RUKI**, *uṣ*.

In most textbooks, what we call "oi. roots" are simply called "roots". We distinguish

◇ a root with ie. *e*, i.e., a full-grade root or a normal-grade root or just a root (in Sanskrit: *a*, or, if a half vowel follows, *ê* or *ô*, respectively), from

◇ a root where ie. *e* was lost, i.e., the zero-grade root (in Sanskrit: see pp. 23)

Typically, (ie.) roots are mono-syllabic and of one of the following forms

syllabic structure	example	translation
C–e–C	*med*	to measure
e–C	*ed*	to eat
C–L–e–C	*trem*	to tremble
C–e–L–C	*serp*	to creep
C–e–hV–C	*deuk*	to lead

Nowadays, ie. roots $^*ed$ are not accepted any more. Instead, laryngeals are thought to come before the *e*. Thus, we would have $^*h_1ed$ instead of just $^*ed$. Similarly, ie. $^*a\acute{g}$ with root vowel *a* is replaced by $^*h_2e\acute{g}$ where h_2 is responsible for changing *e* to *a*. Thus, from this point of view, all ie. roots are enclosed by consonants (which may be laryngeals or also liquids or half vowels). While we make use of laryngeal theory oftentimes, we do not mind reconstructions as $^*ed$.

We now turn to two additional reasons why oi. roots may not be in zero grade. Both concern ie. roots ending in a laryngeal:

3. Oi. roots such as *bhā* (second class) do not distinguish between strong forms (typically full grade) and weak forms (typically zero grade), but use *bhā-* throughout although *bhā* is full grade.

4. A given ie. root may give rise to two different oi. roots, such as *ê-ti* versus *yā-ti* or *jay-a-ti* versus *jyā-ti*.

Turning to the third reason, consider the syllable structure *C–e–C*. If the final consonant is a laryngeal, we obtain *C–e–H* so that we obtain long *ā* as in

√	3. pers. sg.	translation
pā	*pā-ti*	to protect
bhā	*bhā-ti*	to shine
mā	*mā-ti*	to measure
yā	*yā-ti*	to go
vā	*vā-ti*	to blow

With respect to the fourth reason, a given ie. root may give rise to two different oi. roots as the following table shows:

√	√
i ("to go"), *ê-ti*	*yā* ("to go out, to go forth"), *yā-ti*
ghṛ ("to springle, to wet"), *ji-ghar-ti*	*ghrā* ("to smell"), *ghrā-ti*
jan ("to produce", see *jñā* in dictionary),	*jñā* ("to know"), *jānā-ti*
ji ("to conquer, to overcome"), *jay-a-ti*	*jyā* ("to suppress, to grow old"), *jyā-ti*
tr̄ ("to cross"), *tar-a-ti*	*trâ(i)* ("to protect, to save"), *trā-ti*
man ("to think"), *man-ya-tê*	*mnā* ("to remember, to praise"), *mnā-ti*

Thus, these long-$\bar{a}$ roots like $mn\bar{a}$ are built by this rule:

$$\text{zero-grade root} \quad + \quad \bar{a} \leftarrow eh_2$$

Perhaps, the long-$\bar{a}$ roots have a consequential meaning?

◇ He goes (*ê-ti*) so that he escapes (*yā-ti*).

◇ He conquers (*jay-a-ti*) so that he suppresses (*jyā-ti*).

C.2. Ten verbal classes, overview

C.2.1. Thematic versus athematic classes

Sanskrit is famous for its ten verbal classes. In this section (classes 1, 4, 6, and 10) and in the next section (classes 2, 3, 5, 7, 8, and 9) we present a rough overview of these classes. Interesting special cases are dealt with later.

A typical characteristic of the athematic classes is the presence of strong forms (mostly full grade) and weak forms (zero grade). In order to provide examples, we report the 3. pers. sing. (which usually takes a strong form) and the 1. pers. pl. (where we should expect the weak form). A more detailed analysis of the athematic classes is found in section C.6 (pp. 142).

In the third class, we have reduplication, in the classes 5, 7, 8, and 9 a nasal infix complicates matters.

C.2.2. The four thematic classes

The first class

We first turn to the four classes that use the thematic vowel. One typical example for the first class is given by

$\underbrace{bhud}$	,	$\underbrace{bhôd}$	-	$\underbrace{a}$	-	$\underbrace{ti}$
oi. root		root		thematic		ending
in zero grade		in full grade		vowel		3. pers. sg.

Other examples, typical or less typical are now presented: Typical cases (zero-grade oi. root, present-tense in full-grade) include:

√	3. pers. sg.	translation
kṛṣ	*karṣ-a-ti*	he ploughs
klp	*kalp-a-ti*	he is ready for
dyut	*dyôt-a-tê*	he shines
bhū ← **bhuH*	*bhav-a-ti*	he is
mih	*mêh-a-ti*	he urinates
śuc	*śôc-a-ti*	he grieves
smṛ	*smar-a-ti*	he remembers

Some oi. roots are given in full grade:

√	3. pers. sg.	translation
kamp	*kamp-a-tê*	he trembles
tyaj	*tyaj-a-ti*	he abandons
dah	*dah-a-ti*	he burns
vas	*vas-a-ti*	he dwells

In these examples, the zero grades would be impossible to pronounce or "too far away" to be recognizable.

Some reduplicated roots also belong to the first class:

◇ *sīd-a-ti* ("he sits") with (full-grade!) oi. root *sad* is originally a reduplicated form and could be considered a class-3 verb. In fact, we obtain *sīḍ-a-ti* by way of

si-sd-ati (reduplication with *i* and zero grade, without sandhi)
→ *si-zd-ati* (***sz*** before voiced stop)
→ *si-ẓd-ati* (**RUKI**)
→ *si-ẓḍ-ati* (**Cer*D***)
→ *sīḍ-ati* (**CpLz**), see *pīḍ*

whence finally *sīd-a-ti* through leveling:

	sīḍ-ati	
influenced by	*sa-sād-a* (perf. 3. pers. sg.) or other forms	with dental
turns into	*sīd-ati*	with dental

◇ *sthā, tiṣṭhati* ("to stand") is thought to go back to ie. **steh*$_2$. Note that *t* in the ie. full-grade root is not aspirated. Thus, *ti-ṣṭh-a-ti* is not an instance of Grassmann's law (although the final result does not contract that law). Instead, the aspiration is a reflex of the laryngeal. Reduplicating with *i* and just the consonant immediately before *i* yields

ti-sth$_2$-eti (reduplication with *i* and zero grade)
→ *ti-sth-eti* (**Lar_CH:** h_2 aspirates *t*)
→ *ti-ṣth-ati* **(RUKI)**
→ *ti-ṣṭh-ati* (**CERD**)

The full grade form should be *steh$_2$ → *stā*. In fact, the oi. root *sthā* is aspirated (as in the infinitive *sthā-tum*). Leveling provides an easy explanation.

◇ While h_2 has caused aspiration, h_3 may have caused voicedness in *pā*, *pi-ba-ti* ("to drink"):

pi-ph$_3$-eti (reduplication with *i* and zero grade)
→ *pi-b-eti* (**Lar_CH:** h_3 makes *t* voiced)
→ *pi-b-ati*

The first class also contains verbs where

◇ both oi. root and present-tense contain short *i* or short *u*:

√	3. pers. sg.	translation
cumb	*cumb-a-ti*	he kisses
bhikṣ	*bhikṣ-a-ti* (p. 130)	he begs

◇ both oi. root and present-tense contain *ī*:

√	3. pers. sg.	translation
krīḍ	*krīḍ-a-ti*	he plays
ṭīk	*ṭīk-a-ti*	he trips

◇ both oi. root and present-tense are in lengthened grade:

√	3. pers. sg.	translation
kāṅkṣ	*kāṅkṣ-a-ti*	he craves
kāś	*kāś-a-ti*	he shines
khād	*khād-a-ti*	he eats
dhāv	*khād-a-ti*	he runs

◇ the oi. root is in full grade while the present tense is in lengthened grade:

krām-a-ti ("he strides") with oi. root *kram* (not by Brugmann's law because of root vowel ie. *e*)

The fourth class

The fourth class also employs the thematic vowel. Both oi. root and present tense are in zero grade, as seen in this example:

sidh	,	*sidh*	- *y* –	*a*	-	*ti*
oi. root in zero grade		root in zero grade	suffix	thematic vowel		ending 3. pers. sg.

Consider these typical cases (zero-grade oi. root, present tense in zero grade plus suffix *y*):

√	3. pers. sg.	translation
kup	*kup-y-a-ti*	he is angry
kṣup	*kṣup-y-a-ti*	he is agitated
tuṣ	*tuṣ-y-a-ti*	he is pleased
tṛp	*tṛp-y-a-ti*	he is content
nṛt	*nṛt-y-a-ti*	he dances
sidh	*sidh-y-a-ti*	he is successful
snih	*snih-y-a-ti*	he loves

Some verbs exhibit full-grade oi. root with nasal. Then **SY_*N*** applies:

√	3. pers. sg.	translation
bhraṃś	*bhraś-y-a-ti* ← **bhr̥m̥ś*	he falls
rañj	*raj-y-a-ti* ← **r̥n̥j*	he reddens

But, this rule is not always adhered to. In the following example, the result would have been too difficult to attribute:

√	3. pers. sg.	translation
man	*man-y-a-tê*	he thinks

Finally, we turn to laryngeal cases. A clear instance of full-grade oi. root and zero-grade present tense is given by

√	3. pers. sg.	translation
jan	*jā-y-a-tê* ← **ǵn̥Hetai*	he is born

where we apply the laryngeal sound law **Lar_SY** (p. 28). The laryngeal in this case is clear from infinitive *jan-i-tum*. Laryngeals are also responsible for these three examples where we encounter full-grade oi. root and zero grade (!) present tense:

√	3. pers. sg.	translation
dam	*dām-y-a-ti* ← **d*m̥*H*	he tames
śam	*śām-y-a-ti* ← **ḱ*m̥*H*	he gets quiet
śram	*śrām-y-a-ti* ← **ḱr*m̥*H*	he toils

The reason for long *ā* in *mad, mād-y-a-ti* is unclear.

The sixth class

The sixth class is like the fourth class without *y*, see, for example,

tud	,	*tud*	-	*a*	-	*ti*
oi. root		root		thematic		ending
in zero grade		in zero grade		vowel		3. pers. sg.

Look, first, at these typical cases (zero-grade oi. root, zero-grade present tense):

√	3. pers. sg.	translation
kṛṣ	*kṛṣ-a-ti*	he ploughs
kṣip	*kṣip-a-ti*	he throws
tud	*tud-a-ti*	he strikes
diś	*diś-a-ti*	he shows
nud	*nud-a-ti*	he pushes
likh	*likh-a-ti*	he writes
viś	*viś-a-ti*	he enters

Second, we have some verbs with nasal infix in the present tense:

√	3. pers. sg.	translation
muc	*muñc-a-ti*	he frees
lip	*limp-a-ti*	he smears
lup	*lump-a-ti*	he bites off, he steals
vid	*vind-a-ti*	he finds

Finally, observe the verbs which (Indo-European speaking) use *sḱ* to form the present tense:

√	3. pers. sg.	translation
iṣ	*icch-a-ti*	he wishes
pracch	*pṛcch-a-ti*	he asks

Clearly, *gam, gacch-a-ti* also belongs here. While it is normally considered a first-class root, *gacch-a-ti* goes back to ie. $^*g^w\underset{\circ}{m}$-*sḱ-e-ti* (**SY_*N***, **SIB**). Thus, *gacch-a-ti* is in zero grade.

The tenth class

For the tenth class, the leading examples is this:

cur	,	*cōr*	- *ay*	–	*a*	-	*ti*
oi. root		root	suffix		thematic		ending
in zero grade		in full grade			vowel		3. pers. sg.

with a full-grade root in the present tense. Another frequent example is provided by

√	3. pers. sg.	translation
cint	*cint-ay-a-ti*	he thinks

The causatives look similar, but are treated elsewhere, in subsection C.3.8.

C.2.3. The second class

Leaving the thematic group of verbs, we now treat the athematic classes 2, 3, 5, 7, 8, and 9. In the third class, we have reduplication, in the classes 5, 7, 8, and 9 a nasal infix. The remaining class 2 (which we are now going to deal with) is the most simple one. For example, the full grade of *i* is *ê* so that Sanskrit for "to go" is

i	,	*ê*	-	*ti*
oi. root		root		ending
in zero grade		in full grade		3. pers. sg.

In the following examples, we report the 3. pers. sing. (which usually takes a strong form) and the 1. pers. pl. (where we should expect the weak form). First, the typical cases include:

√	3. pers. sg.	1. pers. pl.	translation
as (f.g.)	*as-ti*	*s-mas*	to be
i	*ê-ti*	*i-mas*	to go
dih	*dêg-dhi* (2) ← ie. **dheigh-ti*	*dih-mas*	to grease
duh	*dôg-dhi* (2) ← ie. **dheugh-ti*	*duh-mas*	to milk
dviṣ	*dvêṣ-ṭi* (1)	*dviṣ-mas*	to hate
lih	*lê-ḍhi* (3) ← ie. **leiǵh-ti*	*lih-mas*	to lick
vaś (f.g.)	*vaṣ-ṭi* (1)	*uṣ-mas*	to wish
vid	*vêt-ti*	*vid-mas*	to know

1. Sound laws oi. *ṣ/ś* + *t* → *ṣṭ* (**Cer*D***)

2. Both Grassmann (deaspiration of word-initial **dh*, **DA**) and Bartholomae (ie. *gh t* → oi. *g dh*, **ASh**)

3. *lê-ḍhi* is to be explained by

   ie.**leiǵh-ti* (full grade)
   → *lêǵh-ti*
   → *lêǧ-dhi* (**ASh**)
   → *lêz-dhi* (***sz*** before voiced stop)
   → *lêẓ-dhi* **(RUKI)**
   → *lêẓ-ḍhi* (**Cer*D***)
   → *lê-ḍhi* (**CpL*z***, but *ê* already long)

However, full grade also in plural are sometimes observed:

√	3. pers. sg.	1. pers. pl.	translation
ad (f.g.)	*at-ti*	*ad-mas*	to eat
vac (f.g.)	*vak-ti*	*vac-mas*	to speak
vas (f.g.)	*vas-tê*	*vas-mahê*	to dress
han (f.g.)	*han-ti*	*han-mas*	to kill

Next, consider some oi. sêṭ roots with regular weak-strong distribution:

√	3. pers. sg.	1. pers. pl.	translation
rud	*rôd-i-ti*	*rud-i-mas*	to weep

However, some sêṭ roots show strong forms also in the plural:

√	3. pers. sg.	1. pers. pl.	translation
an (f.g.)	*an-i-ti*	*an-i-mas*	to breath
svap (f.g.)	*svap-i-ti*	*svap-i-mas*	to sleep
svas (f.g.)	*svas-i-ti*	*svas-i-mas*	to blow, to snuffle

We sometimes find lengthened-grade in sg., zero-grade in pl. (so-called Narten present forms):

√	3. pers. sg.	1. pers. pl.	translation
nu	*nâu-ti*	*nu-mas*	to praise
ru	*râu-ti*	*ru-mas*	to roar
stu	*stâu-ti*	*stu-mas*	to praise

Finally, long-ā verbs do not differ between strong and weak forms:

√	3. pers. sg.	1. pers. pl.	translation
khyā	*khyā-ti*	*khyā-mas*	to tell
pā	*pā-ti*	*pā-mas*	to protect
bhā	*bhā-ti*	*bhā-mas*	to shine
mā	*mā-ti*	*mā-mas*	to measure
yā	*yā-ti*	*yā-mas*	to go
vā	*vā-ti*	*vā-mas*	to blow

C.2.4. The third class

We now turn to the reduplicating class of verbs which does not have many representatives. (However, reduplication is also used for perfect and for desiderative forms.) The basic idea is that the former part of the root is repeated. However, the repeated root vowel is often "reduced" and *i* seems to be the preferred reduplication vowel. In particular, we find this pattern:

oi. root vowels	*ā*	*ī*	*u*	*ṛ*
	↓	↓	↓	↓
reduplication vowel	*a*	*i*	*u*	*i*

Thus, a typical example is given by the verb for "carry":

bhṛ	,	*bi*	-	*bhar*	-	*ti*
oi. root in zero grade		reduplication syllable		root in full grade		ending 3. pers. sg.

Grassmann's law (**DA**, section B.3.2, pp. 37) is regularly applied. For example, the oi. root *hu* ("sacrifice") goes back to i.e. * *ǵheu* and we obtain

ie.* *ǵhu-ǵheu-ti*
→ *ǵu-ǵhô-ti* (**DA**)
→ *ju-hô-ti* (**PPal**, p. 35)

Here is a list with third-class verbs:

√	3. pers. sg.	1. pers. pl.	translation
gā	*ji-gā-ti*	*ji-gī-mas*	to go
dā	*da-dā-ti*	*da-d-mas*	to give
dhā	*da-dhā-ti*	*da-dh-mas*	to set
bhī	*bi-bhê-ti*	*bi-bhī-mas*	to be afraid
bhṛ	*bi-bhar-ti*	*bi-bhṛ-mas*	to carry
hā	*ja-hā-ti*	*ja-hī-mas*	to abandon
hū	*ju-hô-ti*	*ju-hu-mas*	to sacrifice

C.2.5. The nasal infix classes

Infixes in the root

The remaining four classes 5, 7, 8, and 9 show a nasal element. The most ancient constellation can be seen in class 7. For example, the Sanskrit verb for "to join" is *yug, yunakti* which is best understood as

$\underbrace{yu}$	-	$\underbrace{na}$	–	$\underbrace{k}$	-	$\underbrace{ti}$
beginning of oi. root in zero grade		sign in strong form		final root consonant		ending 3. pers. sg.

At first sight, the other classes do not exhibit an infix into the oi. root:

√	3. pers. sg.	1. pers. pl.	translation
śak	*śak-nô-ti*	*śak-nu-mas*	to be able
tan	*tan-ô-ti*	*tan-u-mas*	to stretch
pū	*pu-nā-ti*	*pu-nī-mas*	to purify

However, this first impression is misleading from a historical point of view.

The ninth class as a special instance of the seventh class

Let us begin with a comparison of classes 7 and 9. It was a close look at these classes that prompted de Saussure to postulate laryngeal sounds in Indo-European. Here is how he argued (in principle).

Consider two verbs, one from the seventh class, the other from the ninth class:

class	gaṇa sign	√	3. pers. sg.	future	infinitive
7	*na*	*yug*	*yu-na-k-ti*	*yôk-ṣy-a-ti*	*yôk-tum*
9	*nā*	*pū*	*pu-nā-ti*	*pavi-ṣy-a-ti*	*pavi-tum*

The present tense in class 7 uses *na* as an infix, in our example between *u* and the root-final consonant *j*. In contrast, *nā* in the 9th class occurs after the oi. root. De Saussure hypothesized that both verbs are similarly constructed. If that hypothesis is correct, we need to deal with two differences:

1. The ninth class has long *nā*, rather than short *na* in the seventh class.

2. Second, the future and the infinitive forms of *pū* show *i* which seems to come out of nowhere. Traditional Sanskrit grammarians also noted this *i*. They call *pū* an oi. sêṭ root (*sêṭ* ← *sa-iṭ*), i.e., an oi. root where *i* does not show up in the oi. root, but in some other forms.

De Saussure's brilliant idea was this: One sound (that is not to be seen any more) is responsible for both phenomena. Let us denote this sound by *H*. It had two effects.

1. *H* leads to the lengthening of *na* to *nā*.

2. *H* turns into *i* between consonants.

Then, one can rewrite the above Sanskrit table by a corresponding table with Indo-European forms:

class	*gaṇa sign	√	3. pers. sg.	future	infinitive
7	**ne*	**yug*	**yu-ne-g-ti*	**yeu-g-sy-e-ti*	**yeuǵ-tum*
9	**ne*	**puH*	**pu-ne-H-ti*	**peu-H-sy-e-ti*	**peuH-tum*

Thus, the classes 7 and 9 turn out to have an identical origin. Long *ī* in the weak class sign is *nī* as in *pu-nī-mas*. It is difficult to explain.

The fifth class as a special instance of the seventh class

It can be shown that the seventh class and the fifth class are also basically the same. A prominent representative of the fifth class is

śru, śṛ-ṇô-ti ("he hears").

Now we understand this verb as one where, originally, the root-final consonant is the half vowel *v*. Then, before consonants, ie. **ne-v* should regularly turn into Sanskrit *nô*. This is, indeed, what happens here. The present tense sg. is best understood by this comparison:

class	*gaṇa sign	√	3. pers. sg.	gaṇa sign
7	**ne*	**yug*	**yu-ne-g-ti* → *yu-nak-ti*	*na*
5	**ne*	**klu* → *śru*	**kl-ne-u-ti* → *śr-ṇô-ti*	*nô*

Thus, originally, we have the *na*-infix as in *yu-na-k-ti*. However, this was not evident to the speakers who imagined an oi. root *śṛ* and, added to that root, *nô* (similar to *nā* in *pu-nā-ti*).

The eigth class as a special instance of the fifth class

Now, and this is the final step, the eigth class can be considered a subclass of the fifth one. One may, of course, be tempted to interpret eighth-class verbs in this manner

class	$\sqrt{}$	3. pers. sg.	gaṇa sign
8	*tan*	*tan-ô-ti*	*ô*

where *ô* is the characteristic gaṇa sign of this class. However, it is better to see the comparison with the fifth-class verbs which are built from the zero grade:

class	*gaṇa sign	3. pers. sg.	gaṇa sign
5	**ne*	**kĺ-ne-u-ti* → *śr-ṇô-ti*	*nô*
8	**ne*	**tn̥-ne-u-ti* → *ta-ṇô-ti*	*nô*

Thus, the *n* is part of a nasal infix and not the final root consonant. The root consonant turns into *a,* according to the sound law **SY_N** (pp. 25).

The class signs

According to the above arguments, the nasal classes 5, 8, and 9 can ultimately be seen as special instances of the seventh class with gaṇa sign *na.* Since all classes use the signs in strong and weak forms, we obtain

class	strong gaṇa sign	3. pers. sg.	weak gaṇa sign	3. pers. pl.
5	*nô*	*śr-ṇô-ti*	*nu*	*śr-ṇu-mas*
7	*na*	*yu-na-k-ti*	*n*	*yu-ñ-j-mas*
8	*ô*	*tan-ô-ti*	*u*	*tan-i-mas*
9	*nā*	*pu-nā-ti*	*nī*	*pu-nī-mas*

Here, the weak sign forms of the classes 5, 7, and 8 are understandable from section B.2.4 (pp. 23). It is not quite clear why, in the 9. class, we have *nī* from *nH* which should lead to *ni* instead.

Thus, historically, the four nasal classes all use *na* (going back to ie. **ne*). Thus, class 7 is the most basic one. Have a look at figure C.1 to see again how the other classes are derived.

C.2.6. The fifth class

Historically, the *nô* and *nu* signs of the fifth class developed from a "misunderstanding" with respect to *śr-nô-ti.* This was then generalized to other verbs. Here are a few examples, with strong gaṇa sign *nô* and weak gaṇa sign *nu*:

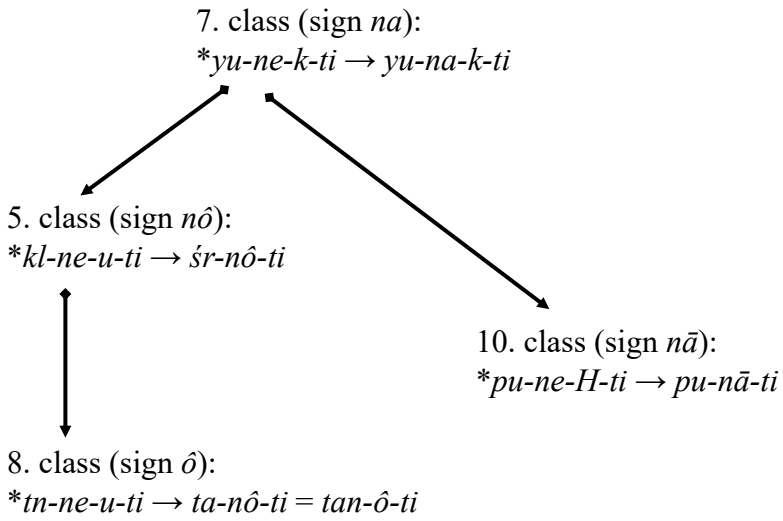

Figure C.1.: The nasal infix classes

√	3. pers. sg.	3. pers. pl.	translation
āp	*āp-nô-ti*	*āp-nu-mas*	to obtain
śak	*śak-nô-ti*	*śak-nu-mas*	to be able
su	*su-nô-ti*	*su-nu-mas*	to press

C.2.7. The seventh class

The seventh class is the only one of the *n*-infix verbal classes where the *na* or *n* signs are infixed into the oi. root, for example,

√	3. pers. sg.	3. pers. pl.	translation
chid	*chi-na-t-ti*	*chi-n-d-mas*	to cut
piś	*pi-na-ś-ṭi*	*pi-ṃ-ś-mas*	to grind
bhid	*bhi-na-t-ti*	*bhi-n-d-mas*	to break
yuj	*yu-na-k-ti*	*yu-ñ-j-mas*	to join

C.2.8. The eighth class

Apart from *tan* with

◇ *ta-nô-ti*, *ta-nu-mas* from the Indo-European point of view, or

◇ *tan-ô-ti*, *tan-u-mas* from the point of view of the traditional gaṇa sign

the oi. root *kṛ* ("to make") also belongs here. Remember

√	3. pers. sg.	3. pers. pl.	translation
kṛ	*kar-ô-ti*	*kur-mas*	to make

This is somewhat surprising because this root does not seem to belong to those with nasal (infix). Apparently, the Indian grammarians considered

◇ *kar-ô-ti* as similar to *tan-ô-ti* and

◇ *kur-mas* as similar to the alternative form *tan-mas*

It is important to note that the older Vedic form *kṛṇôti* is well attested. From that perspective, *kṛ* rightly belongs to the verbs with nasals.

C.2.9. The ninth class

Finally, consider these examples for the the ninth class:

√	3. pers. sg.	1. pers. pl.	translation
krī	*krī-ṇā-ti*	*krī-ṇī-mas*	to buy
pū	*pu-nā-ti*	*pu-nī-mas*	to purify
vṛ	*vṛ-ṇā-ti*	*vṛ-ṇī-mas*	to choose

In *pu-nā-ti* we have expected short *u*. The long *ī* in *krī-ṇā-ti* is unexpected.

C.3. Infinitive and other normal-grade forms

C.3.1. General rule

The formation of the infinitive follows the general pattern

full-grade root + *tum*

Consider these examples where the full grade clearly shows:

√ in z.g.	3. pers. sg.	infinitive	translation
kṛ	*kar-ô-ti*	*kar-tum*	to make
bhṛ	*bhar-a-ti*	*bhar-tum*	to carry
mṛ	*mri-ya-tê*	*mar-tum*	to die
vas	*vas-a-ti*	*vas-tum*	to dwell
smṛ	*smar-a-ti*	*smar-tum*	to remember
hṛ	*har-a-ti*	*har-tum*	to take, to rob

Also, roots with *i* regularly have full grade *ê*:

√ in z.g.	3. pers. sg.	infinitive	translation
i	*ê-ti*	*ê-tum*	to go
kṣip	*kṣip-a-ti*	*kṣêp-tum*	to throw
ji	*jay-a-ti*	*jê-tum*	to defeat

while roots with *u* exhibit *ô*:

√ in z.g.	3. pers. sg.	infinitive	translation
śru	*śr-ṇô-ti*	*śrô-tum*	to listen
stu	*stâu-ti* (Narten)	*stô-tum*	to praise
hu	*ju-hô-ti*	*hô-tum*	to sacrifice

Expected expected backward assimilation is often encountered:

√ in z.g.	3. pers. sg.	infinitive	translation
khid	*khid-ya-ti*	*khêt-tum*	to suffer
tud	*tud-a-ti*	*tôt-tum*	to hit
tyaj (f.g.)	*tyaj-a-ti*	*tyak-tum*	to abandon
nud	*nud-a-ti*	*nôt-tum*	to push
pac (f.g.)	*pac-a-ti*	*pak-tum*	to cook
bhid	*bhi-na-t-ti*	*bhêt-tum*	to break
muc	*muñc-a-ti*	*môk-tum*	to liberate
yuj	*yu-na-k-ti*	*yôk-tum*	to join
vac (f.g.)	*vak-ti*	*vak-tum*	to speak
sad (f.g.)	*sīd-a-ti* (p. 80)	*sat-tum*	to sit

C.3.2. Oi. roots ending in a nasal

When the oi. root (which is full grade in all the examples below) ends in a nasal *n* or *m*, the labial nasal also becomes dental *n* before dental *t*:

√ in f.g.	3. pers. sg.	infinitive	translation
gam	*ga-cch-a-ti*	*gan-tum*	to go
tan	*ta-nô-ti*	*tan-tum*	to stretch
nam	*nam-a-ti*	*nan-tum*	to salute
man	*man-y-a-tê*	*man-tum*	to think
yam	*yacch-a-ti*	*yan-tum*	to restrain
ram	*ram-a-tê*	*ran-tum*	to enjoy
han	*han-ti*	*han-tum*	to hit

C.3.3. Aspiration and cerebralization

Applying aspiration laws

If an oi. root ends in a voiced aspirate, the addition of *tum* necessitates the aspiration shift which is associated with the name of Christian Bartholomae:

ASh	ie. *gh-t*	→	oi. *g-dh*
	ie. *dh-t*	→	oi. *d-dh*
	ie. *bh-t*	→	oi. *b-dh*
but	ie. *dh-s*	→	oi. *t-s*
	ie. *bh-s*	→	oi. *p-s*

The shift is obvious in these verbs:

√	3. pers. sg.	infinitive	translation
kṣubh	*kṣubh-y-a-ti*	*kṣôb-dhum*	to be upset
yudh	*yudh-y-a-tê*	*yôd-dhum*	to fight
labh (f.g.)	*labh-a-tê*	*lab-dhum*	to obtain

Sometimes, the other aspiration law is also applied. Grassmann's law says: If you have two aspirated sounds, the first one becomes deaspirated:

DA ie. $C^{\mathtt{asp}}\,VC^{\mathtt{asp}} \rightarrow$ oi. $C^{\mathtt{unasp}}\,VC^{\mathtt{asp}}$

We now need to mix these sound laws with the palatalization laws **SPal** (pp. 36). For example, we have

√	3. pers. sg.	infinitive	translation
dah (f.g.)	*dah-a-ti*	**dheg^{w}h-tum* → *dag-dhum*	to burn
dih	*dêg-dhi*	**dheigh-tum* → *dêg-dhum*	to smear
duh	*dôg-dhi*	**dheugh-tum* → *dôg-dhum*	to milk
snih	*snih-y-a-ti*	**sneig^{w}h-tum* → *snêg-dhum*	to love

In more detail, we have

ie.**sneig^{w}h-tum* (full grade and *tum*-marker for infinitive)
→ *snêgh-tum* (no **SPal** before consonant)
→ *snêg-dhum* (**ASh**)

or

ie.**dheugh-tum* (full grade and *tum*-marker for infinitive)
→ *dhôgh-tum* (no **SPal** before consonant)
→ *dôgh-tum* (**DA**)
→ *dôg-dhum* (**ASh**)

Applying cerebralization sound laws

In a few verbs, the infinitive comes with cerebralization. In this subsection, we need several cerebralization laws. First, cerebralization occurs not only after *ṣ*, but also after *ś*:

Cer*D*	oi. *ṣ/ś* + *t*	→	oi. *ṣṭ*
	ẓ + *d/dh*	→	*ẓ* + *ḍ/ḍh*

This is clearly seen in these verbs:

√	3. pers. sg.	infinitive	translation
kṛṣ	*kṛṣ-a-ti*	*karṣ-ṭum*, *kraṣ-ṭum*	to plough
kruś	*krôś-a-ti*	*krôṣ-ṭum*	to cry out
tuṣ	*tuṣ-y-a-ṭi*	*tôṣ-ṭum*	to enjoy
daṃś (f.g.!)	*daś-a-ṭi* (z.g.)	*daṃṣ-tum*	to bite
diś (z.g.!)	*diś-a-ti*	*dêṣ-ṭum*	to show
dṛś (z.g.!)	(*paś-y-a-ti*)	*draṣ-ṭum*	to see
dviṣ	*dvêṣ-ṭi*	*dvêṣ-ṭum*	to hate
naś (z.g.!)	*naś-y-a-ṭi*	*naṃṣ-tum* ← ie. **h*$_2$*nenḱ-tu*	to perish
puṣ	*puṣ-y-a-ṭi*	*pôṣ-ṭum*	to nourish
pracch (f.g.)	*pṛcch-a-ti*	*praṣ-ṭum*	to ask
vṛṣ	*vṛṣ-a-ti*	*varṣ-ṭum*	to rain
sṛj	*sṛj-a-ti*	*sraṣ-ṭum*	to throw, to let loose
spṛś	*spṛś-a-ti*	*sparṣ-ṭum*, *spraṣ-ṭum*	to touch

In contrast to section B.2.4 (pp. 23) and different from oi. root *kṛ* with infinitive *kar-tum*, we find *ra* rather than *ar* in some verbs above: *kraṣ-ṭum*, *draṣ-ṭum*, and *spraṣ-ṭum* by the sound law **MET_*rSP***. Indeed, *rṣ-ṭ* (as in *karṣ-ṭum*, *varṣ-ṭum* or *sparṣ-ṭum*) is a rather heavy combination of consonants.

The infinitive of *yaj* ("to sacrifice") is *yaṣ-ṭum*, but should not be: Ie. **yeǵ* should yield

ie.**yeǵ-tum* (full grade and *tum*-marker for infinitive)
→ *yas-tum* (***sz*** before voiceless consonant)

Presumably, leveling (from the PPP) has done the rest (see p. 114):

	yas-tum	
influenced by	*iṣ-ṭa*	with cerebral *ṣ-ṭ*
turns into	*yaṣ-ṭum*	with cerebral *ṣ-ṭ*

... both aspiration and cerebralization laws

The infinitive *vôḍhum* from *vah*, *vah-a-ti* ("to flow, to drive") goes back to ie. **veǵh*. Cerebralization has no sound-law justification. We should have obtained

ie.**veǵh-tum* (full grade and *tum*-marker for infinitive)
→ *vaǵ-dhum* (**ASh**)
→ *vaz-dhum* (***sz*** before voiced consonant)
→ *vô-dhum* (**CpL*z***, pp. 50)

Here, leveling from regularly formed PPP *ū-ḍha* is responsible for *vôḍhum*, with cerebral *ḍh*.

Similarly, but with Grassmann's law, *guh, gūhati* ("to hide") goes back to ie. **gheuǵh* and we get

ie.**gheuǵh-tum* (full grade and *tum*-marker for infinitive)
→ *geuǵ-dhum* (**DA**, **ASh**)
→ *geuz-dhum* (***sz*** before voiced consonant)
→ *geuẓ-dhum* (**RUKI**)
→ *gôẓ-ḍhum* (**DIPH**, **Cer*D***)
→ *gô-ḍhum* (**CpL*z***, but *ô* already long)

A very parallel development leads to the infinitive *lê-ḍhum* of *lihati* ("he licks"):

ie.**leiǵh-tum* (full grade and *tum*-marker for infinitive)
→ *leiǵ-dhum* (**ASh**)
→ *leiz-dhum* (***sz*** before voiced consonant)
→ *leiẓ-dhum* (**RUKI**)
→ *lêẓ-ḍhum* (**DIPH**, **Cer*D***)
→ *lê-ḍhum* (**CpL*z***, but *ê* already long)

Sometimes, we may find cerebral sounds which are not justified by sound laws but by analogy. For example, the infinitive of ruh, rôhati "to climb" is *rūḍhum*, but the ie. root is **h*$_1$*leudh* (ie. **dh* can produce oi. *h* according to subsection B.3.10, pp. 53) which should have lead to *rôddhum* (similar to *dôgdhum* or *bôddhum*) instead.

sah, sahati ("to tolerate") with infinitive *sô-ḍhum* although the sound laws show a different result:

ie.**seǵh-tum* (full grade and *tum*-marker for infinitive)
→ *saǵ-dhum* (**ASh**)
→ *saz-dhum* (***sz*** before voiced consonant)
→ *sô-dhum* (**CpL*z***)

where the analogy with verbs like *guh* above is responsible for cerebralization.

C.3.4. Laryngeals

The infinitive of quite a few number of verbs can be explained by laryngeal theory, either in line with our sound laws or by later analogy. Remember:

$$\text{ie.}^*CHC \quad \rightarrow \quad \text{oi. } CiC$$

By this sound law, the verbs listed below exhibit *i* between the oi. full-grade root and infinitive marker *tum*.

√	3. pers. sg.	infinitive	translation
av (f.g.)	$^*h_2euH$*-e-ti* → *av-a-ti*	$^*h_2eu$*-H-tum* → *av-i-tum*	to help
khan (f.g.)	$^*khenH$*-e-ti* → *khan-a-ti*	$^*khen$*-H-tum* → *khan-i-tum*	to dig
jan (f.g.)	$^*ǵn̥H$*-y-e/o-tei* → *jā-y-a-tê*	$^*ǵen$*-H-tum* → *jan-i-tum*	to be born
nī	$^*neyH$*-e-ti* → *nay-a-ti*	$^*ney$*-H-tum* → *nay-i-tum*	to lead
bhū	$^*bheuH$*-e-ti* → *bhav-a-ti*	$^*bheu$*-H-tum* → *bhav-i-tum*	to be

Many other roots, even if there is no laryngeal excuse, use *i-tum* rather than just *tum* as the infinitive suffix. Many verbs show this *i* that prevents sandhi between the (normal-grade or, more rarely, zero-grade) root and the *tum*: *paṭh-i-tum*, *pat-i-tum, cumb-i-tum*, *bhāṣ-i-tum*, *êṣ-itum*, *côray-itum, kôpitum, kartitum, kathayitum, lêkh-itum*

Besides *nay-i-tum* which is parallel to *bhav-i-tum,* one also finds *nê-tum.* It is difficult to decide whether *nay-i-tum* or *nê-tum* is the regular development:

◇ In *nay-i-tum,* the laryngeal is of a vowel quality rather than a consonantal one. It stands between the consonants *y* and *t* and hence turns into *i*.

◇ In *nê-tum,* the laryngeal is of a rather consonantal quality. The diphthong *ay* before that consonant turns into the long vowel *ê*. When the laryngeal drops, this vowel cannot be lengthened any further.

There is also a class of verbs with long *ā* before *tum*. The sound law

$$\text{ie. } ^*eH \quad \rightarrow \quad \text{oi. } \bar{a}$$

is responsible for these examples:

√	3. pers. sg.	infinitive	translation
dā	$^*de$*-deh$_3$-ti* → *da-dā-ti*	$^*deh_3$*-tum* → *dā-tum*	to give
dhā	$^*de$*-dheh$_1$-ti* → *da-dhā-ti*	$^*dheh_1$*-tum* → *dhā-tum*	to set, to place
pā	*pi-b-a-ti* (p. 81)	$^*peh_3$*-tum* → *pā-tum*	to drink
śās	*śās-ti*	$^*ḱeHs$*-tum* → *śās-tum*	to order, to teach
sthā	*ti-ṣṭh-a-ti*	$^*steh_2$*-tum* → *sthā-tum* (levelling!)	to stand

C.3.5. Agent nouns, instrument nouns, and action nouns

Masculine action nouns with suffix *a*

Many examples can be found with oi. *a* added to the full-grade root. The simplest examples are those without half vowels:

√	translation	m. action/agent noun in f.g.	translation
ar	to fit, to connect	*ar-a-s*	spoke (of a wheel)
kṛ	to make	*bhas-kar-a-s*	light-maker → sun
gam	to go	*sam-ā-gam-a-s*	meeting
bhañj	to break	*bhaṅg-a-s*	breaking, defeat
vṛ	to choose	*var-a-s*	boon

and

√	translation	m. agent noun in f.g.	translation
kṛ	to make	*kumbha-kār-a-s*	pot-maker → potter

If the roots contain the half vowels *i* or *u*, *ê* or *ô*, respectively, show up in the full grade:

√	translation	m. action/agent noun in f.g.	translation
khid	to be depressed	*khêd-a-s*	tedium
diś	to show	*dêś-a-s*	country
bhid	to split	*bhêd-a-s*	separation, split
vid	to know	*vêd-a-s*	sacred knowledge

and

√	translation	m. action/agent noun in f.g.	translation
kup	to be angry	*kôp-a-s*	anger
krudh	to be angry	*krôdh-a-s*	anger
lubh	to be desire	*lôbh-a-s*	greed

If a root end in *i*, we witness the half vowel *y* before the ending *a-s*:

√	translation	m. action/agent noun in f.g.	translation
ji	to conquer	*jay-a-s*	victory

Similarly for *i* ("to go") where the meanings vary with the prepositions:

√	translation	m. action noun in f.g.	translation
ati-i	to excel	*aty-ay-a-s*	transgression
adhi-i	to study	*adhy-ay-a-s*	chapter, section
anu-i	to follow	*anv-ay-a-s*	succession, progeny
abhi-i	to arrive	*abhy-ay-a-s*	arrival of darkness
ud-i	to go up	*ud-ay-a-s*	appearance of a star
upa-i	to go towards	*upa-ay-a-s* → *upāy-a-s*	means, approach
ny-ā-i	to come down	*ny-ā-ay-a-s* → *nyāy-a-s*	rule, method
pra-i	to set off	*pra-ay-a-s* → *prāy-a-s*	departure from life
vi-i	to disappear	*vy-ay-a-s*	loss, cost
		a-vy-ay-a	invariant
		a-vy-ay-a-m, n. (!)	indeclinable
		a-vy-ay-a-s	the eternal one, Viṣṇu

Since laryngeals are lost without trace between a consonant (here: the half vowel *y*) and a vowel, they affect the root vowel, but not the action noun:

√	translation	m. action/agent noun in f.g.	translation
bhī ← **bhiH*	to fear	*bhay-a-m*, n. (!) ← **bheyH-o-m*	fear, danger
bhū ← **bhuH*	to be	*bhav-a-s* ← **bheuH-o-s*	being, state

Consider

√	3. pers. sg.	translation	m. ac./ag. noun in f.g.	translation
yuj	*yuj-a-tê* ← ie. **yug-e-toi*	he yokes	*yôg-a-s* ← ie. **yeug-o-s*	joining

Secondary palatalization (**SPal**) lies behind

◇ palatal consonant *j* in *yuj-a-tê* (the ie. thematic vowel is *e*) versus

◇ non-palatal consonant *g* in *yôg-a-s* (the suffix vowel *a* goes back to ie. *o*)

This pattern can also be seen in

√	3. pers. sg.	translation	m. action/agent noun in f.g.	translation
arc	*arc-a-ti*	he shines	*ark-a-s*	sun, song
bhaj	*bhaj-a-ti*	he divides	*bhag-a-s*	wealth
bhuj	*bhuñj-a-ti*	he enjoys	*bhôg-a-s*	enjoyment
mih	*mêh-a-ti*	he urinates	*mêgh-a-s*	rain
yuj	*yuj-a-tê*	he yokes	*yôg-a-s*	joining
vi-vic	*vi-vi-na-k-ti*	he sifts	*vi-vêk-a-s*	discrimination
śuc	*śôc-a-ti*	he grieves	*śôk-a-s*	grief
sṛj	*sṛj-a-ti*	he releases	*sarg-a-s*	letting go

Neuter nouns with suffix *ana*

We find many neuter action nouns with suffix *ana*. The first *a* seems to go back to an ie. front vowel, i.e., ie. $^*eno \rightarrow$ oi. *ana*. Otherwise *bhôj-ana-m* or *vac-ana-m* in the following table could not be explained:

√	translation	n. action noun in f.g.	translation
gam	to go	*gam-ana-m*	going
nī	to lead	*nay-ana-m*	leading (→ eye)
bhuj	to enjoy	*bhôj-ana-m*	enjoyment
mṛd	to squeeze	*mard*-ana-m	rubbing, pressing
vac	to speak	*vac-ana-m*	speech
vad	to speak	*vad-ana-m*	speaking (→ mouth)
vi-as	he dissipate	*vy-as-ana-m*	vice
śru	he hears	*śrav-ana-m*	hearing
su	he presses	*sav-ana-m*	pressing, Soma
sū	she begets	*sav-ana-m*	childbirth

The oi. root *i* ("to go") gives rise to these examples:

√	translation	n. action noun in f.g.	translation
adhi-i	to study	*adhy-ay-ana-m*	reading, recitation
ud-i	to go up	*ud-ay-ana-m*	rising of the sun, outcome
upa-i	to go towards	*upa-ay-ana-m* → *upāy-ana-m*	coming near (a teacher: initiation)
pra-i	to set off, to die	*pra-ay-ana-m* → *prāy-ana-m*	going forth, beginning

Remember also *rāma-ay-ana-m* → *rāmāy-ana-m*.

Some common laryngeal roots also use the *ana* suffix which looks like a *na* suffix. For example, from *dā* ("to give"), we obtain

$$^*dā\text{-}ana \quad \rightarrow \quad \text{oi. } dā\text{-}na$$

and similarly

√	translation	n. action noun in f.g.	translation
dā	to give	*dā-na-m*	giving, gift
dhā	to put, to place	*dhā-na-m*	container
pā	to drink	*pā-na-m*	drinking, drink
sthā	to stand	*sthā-na-m*	standing, place

Masculine nouns with suffix *ana*

Sometimes, the suffix *ana* may also point to an agent noun:

√	translation	m. agent noun in f.g.	translation
nand	to delight	*nand-ana-s*	delighter
pū	to purify	*pav-ana-s*	purifyer → wind

Neuter nouns with suffix *as*

Very common neuter words like take the suffix *as*. Here is a list:

√	translation	n. action noun in f.g.	translation
cit	to observe	*cêt-as*	thought
tap	to burn	*tap-as*	austerity
nam	to bow	*nam-as*	bowing, homage
man	to think	*man-as*	thought
vac	to speak	*vac-as*	speech

Neuter nouns with suffix *is*

Neuter nouns with suffix *is* are rare. Examples are

√	translation	n. action noun in f.g.	translation
jyut	to shine	*jyôt-is*	light, star
hu	to sacrifice	*hav-is*	oblation

Agent nouns with suffix *tar*

Inifinitives and agent nouns share the special features

◇ of building on the full grade and

◇ of using a *t*-suffix, *tum* in the case of the infinitive and *tar* for agent nouns:

√	infinitive	translation	m. agent noun in f.g.	translation
av	*av-i-tum*	to help	*av-i-tar*	helper, friend
kṛ	*kar-tum*	to make	*kar-tar*	doer, maker
kruś	*krôṣ-ṭum*	to shriek	*krôṣ-ṭar*	shrieker → jackal
gam	*gan-tum*	to go	*gan-tar*	goer
ji	*jê-tum*	to defeat	*jê-tar*	conqueror
duh	*dôg-dhum*	to milk	*dôg-dhar*	milker, exploiter

nī	*nê-tum*	to lead	*nê-tar*	leader
pā	*pā-tum*	to drink	*pā-tar*	drinker
bhṛ	*bhar-tum*	to carry	*bhar-tar*	husband
vac	*vak-tum*	to speak	*vak-tar*	speaker
vah	*vô-ḍhum*	to drive	*vô-ḍhṛ*	bridegroom
śru	*śrô-tum*	to hear	*śrô-tar*	hearer
sū	*sav-i-tum*	to beget	*sav-i-tar*	activator, father, sun
hu	*hô-tum*	to sacrifice	*hô-tar*	priest

Sometimes, the zero grade is taken instead. Ie. **khen-H* has zero grade *khā* by the sound law "ie. $C\underset{\circ}{n}H \rightarrow$ oi. $C\bar{a}$". This is the form seen in *khā-tar* ("digger") ← *khan* ("to dig"), besides the expected full-grade form *khan-i-tar* ← **khen-H-t-* .

Instrument nouns with suffix *tra*

The instruments used by the agents from the previous subsection are characterized by the suffix *tra* + neuter ending *m*. For example, the "drinker" *pā-tā* uses the "drinking-vessel" *pā-tram*.

√	infinitive	translation	n. instrum. noun in f.g.	translation
kṛ	*kar-tum*	to make	*kar-tra-m*	spell, charm
gā	*gā-tum*	to go	*gā-tra-m*	body limb
chad	*chat-tum*	to cover	*chat-tra-m*/ *chatra-m*	umbrella
duh	*dôg-dhum*	to milk	*dôg-dhra-m*	milk-pail
nī	*nê-tum*	to lead	*nê-tra-m*	eye
pat	*pat-i-tum*	to fly	*pat-tra-m*/ *patra-m*	wing, leaf
pā	*pā-tum*	to drink	*pā-tra-m*	cup, vessel
yam	*yan-tum*	to hold up/back	*yan-tra-m*	band, instrument
vac	*vak-tum*	to speak	*vak-tra-m*	mouth
vas	*vas-tum*	to clothe	*vas-tra-m*	clothing
śas	*śas-tum*	to kill	*śas-tra-m*	weapon
śās	*śās-tum*	to instruct	*śās-tra-m*	scientific text
śru	*śrô-tum*	to hear	*śrô-tra-m*	ear
hu	*hô-tum*	to sacrifice	*hô-tra-m*	sacrifice

Action nouns with suffix *man*

Action nouns in *man* are also derived from the full grade:

√	infinitive	translation	n. instrument noun in f.g.	translation (means of ...)
kṛ	*kar-tum*	to make	*kar-man*	action
chad	*chat-tum*	to cover	*chad-man*	roof, protection
jan	*jan-i-tum*	to beget	*jan-man*	birth

C.3.6. Comparative and superlative

Comparative and superlative forms are often formed *tara* and *tara* or with *īyas* and *iṣṭha*, respectively:

adjective	translation	comparative	superlative
priya	dear	*priya-tara*	*priya-tama*
mahant	great	*mahat-tara*	*mahat-tama*
alpa	small	*alp-īyas*	*alp-iṣṭha*
uru	wide	*var-īyas*	*var-iṣṭha*
guru	heavy	*gar-īyas*	*gar-iṣṭha*

Many of the *īyas* and *iṣṭha* forms are built on verbal roots. Then, the adjective builds on the zero grade while we find the full grade in both comparative and superlative:

√	translation	adjective (z.g.)	translation	comparative (f.g.)	superlatve (f.g.)
kṣip	to throw	*kṣip-ra* (1)	fast	*kṣêp-īyas* (1)	*kṣêp-iṣṭha* (1)
kṣud	to crush	*kṣud-ra* (1)	small	*kṣôd-īyas* (1)	*kṣôd-iṣṭha* (1)
mṛd	to rub	*mṛd-u*	soft	*mrad-īyas* (2)	*mrad-iṣṭha* (2)

1. One class of adjectives is build from the zero grade plus *ra* (as shown on pp. 121). This *r* is lost in the comparative and superlative forms.

2. In contrast to *mard*-ana-m, we find *ra* rather than *ar* for unclear reasons.

C.3.7. Future with sy-suffix

Forms with and without RUKI

The future meaning has developed from a desiderative one. Compare e. *he will go* which indicates future tense. Its original meaning is "he wants to go"; e. *will* is related to nhg. *wollen* ("to want"). The Sanskrit desiderative is dealt with in the next section (subsection C.4.8, pp. 126). The future is formed from the full grade of the root:

full-grade root + *sy* + *a* + ending

Long-$\bar{a}$ roots (although stemming from laryngeals) provide simple examples:

√ in f.g.	translation	infinitive	future, 3. sg.
dā	to give	*dā-tum*	*dā-sy-a-ti*
dhā	to set, to place	*dhā-tum*	*dhā-sy-a-ti*
pā	to drink	*pā-tum*	*pā-sy-a-ti*
sthā	to stand	*sthā-tum*	*sthā-sy-a-ti*

For roots without *i* or *u*, we find the full grade *a* in

√ in f.g.	translation	infinitive	future, 3. sg.
man	to think	*man-tum*	*maṃ-sy-a-ti*
yaj	to sacrifice	*yaṣ-ṭum*	*yak-ṣy-a-ti*
ram	to enjoy	*ran-tum*	*raṃ-sy-a-tê*
labh	to obtain	*lab-dhum*	*lap-sy-a-tê*
vac	to speak	*vak-tum*	*vak-ṣy-a-ti*
sad	to sit	*sat-tum*	*sat-sy-a-tê*
han	to kill	*han-tum*	*haṃ-sy-a-ti*

In all these examples, we see some backward assimilation to the unvoiced *s*. **RUKI** is encountered after *k* in *vak-ṣy-a-ti*. Also, *labh* shows that the *s* cannot become aspirated, i.e., there is no aspiration shift as in lap-sy-a-tê. For the same reason, the following two future forms are identical:

√ in z.g.	translation	infinitive	future, 3. sg.
vṛt	to turn round	*vart-i-tum*	*vart-sy-a-ti*
vṛdh	to grow	*vardh-i-tum*	*vart-sy-a-ti*

Roots with *i* lead to full grade *ê* and hence to

√ in f.g.	translation	infinitive	future, 3. sg.
i	to go	*ê-tum*	*ê-ṣy-a-ti*
kṣip	to throw	*kṣêp-tum*	*kṣêp-sy-a-ti*
ji	to defeat	*jê-tum*	*jê-ṣy-a-ti*
bhid	to break	*bhêt-tum*	*bhêt-sy-a-ti*

while roots with *u* lead to full grade *ô* clearly seen in

√ in z.g.	translation	infinitive	future, 3. sg.
muc	to liberate	*môk-tum*	*môk-ṣy-a-ti*
yuj	to join	*yôk-tum*	*yôk-ṣy-a-ti*
śru	to listen	*śrô-tum*	*śrô-ṣy-a-ti*
stu	to praise	*stô-tum*	*stô-ṣy-a-ti*

Laryngeal roots are responsible for *i-ṣy-a-ti*:

√	translation	infinitive	future, 3. sg.
jan (f.g.)	to be born	**ǵen-H-tum* → *jan-i-tum*	*jan-i-ṣy-a-ti*
bhū	to be	**bheu-H-tum* → *bhav-i-tum*	*bhav-i-ṣy-a-ti*

By analogy, this convenient quasi-thematic *i* spreads to other roots without any laryngeal excuse:

√ in f.g.	translation	infinitive	future, 3. sg.
kṛ	to make	*kartum*	*kar-i-ṣy-a-ti*
gam	to go	*gan-tum*	*gam-i-ṣy-a-ti*
tan	to stretch	*tan-tum*	*tan-i-ṣy-a-ti*
budh	to awake	*bôdh-i-tum*	*bôdh-i-ṣy-a-ti*
bhṛ	to carry	*bhartum*	*bhar-i-ṣy-a-ti*
man	to think	*man-tum*	*man-i-ṣy-a-ti/tê*
smṛ	to remember	*smartum*	*smar-i-ṣy-a-ti*
likh	to write	*lêkh-i-tum*	*lêkh-i-ṣy-a-ti*
vad	to speak	*vad-i-tum*	*vad-i-ṣy-a-ti*
vṛt	to turn round	*vart-i-tum*	*vart-i-ṣy-a-tê*
vṛdh	to grow	*vardh-i-tum*	*vardh-i-ṣy-a-tê*

Aspiration laws (revelation of aspirated root-initial)

The aspiration laws lead to interesting future forms for two reasons:

1. The aspiration shift **ASh** cannot happen onto *s* or *sy*.
2. Then, there is no need for root-initial deaspiration and ie. aspiration becomes apparent:

√	translation	infinitive	future, 3. sg.

gāh	to dive	*gā-ḍhum*	*ghāk-ṣy-a-tê* ← **gheH??-*
dah	to burn	*dag-dhum*	*dhak-ṣy-a-ti* ← **dheg*^{w}*h-s-*
dih	to smear	*dêg-dhum*	*dhêk-ṣy-a-ti* ← **dheigh-s-*
duh	to milk	*dôg-dhum*	*dhôk-ṣy-a-ti* ← **dheugh-s-*
bandh ← **bhendh*	to bind	*bad-dhum* (z.g.!)	*bhant-sy-a-ti* ← **bhendh-s-*
budh ← **bhudh*	to awake	*bôdh-i-tum*	*bhôt-sy-a-ti* ← **bheudh-s-*

Primary palatalization (revelation of root-final)

Primary palatalization is seen in the sound law

$$\text{ie. } \acute{k} \rightarrow \text{oi. } ś.$$

Now, ie. $\acute{k}$ manifests itself in oi. future forms as oi. k:

√	translation	infinitive	future, 3. sg.
daṃś (f.g.!)	*daś-a-ṭi*	*daṃṣ-ṭum*	*daṃk-ṣy-a-ti* ← **denḱ-s*
diś	*diś-a-ti*	*dêṣ-ṭum*	*dêk-ṣy-a-ti* ← **deiḱ-s-*
dṛś	to see	*draṣ-ṭum*	*drak-ṣy-a-ti* ← **derḱ-s-*
naś (z.g.!)	to perish	*naṃṣ-ṭum*	*naṃk-ṣy-a-ti* ← **h*$_2$*ne(n)ḱ-s-*
pracch (f.g.)	to ask	*praṣ-ṭum*	*prak-ṣy-a-ti* ← **preḱ-s-*
spṛś	to touch	*sparṣ-ṭum*, *spraṣ-ṭum*	*spark-ṣy-a-ti* ← **sperḱ-s-*

A second origin of *k-ṣy* in future forms is **SIB**, in particular

$$\text{oi. } ṣ + s \quad \rightarrow \quad \text{oi. } k + ṣ$$

Here are some examples:

√	translation	infinitive	future, 3. sg.
kṛṣ	to plough	*karṣ-ṭum*, *kraṣ-ṭum*	*kark-ṣy-a-ti*
tuṣ	to enjoy	*tôṣ-ṭum*	*tôk-ṣy-a-ti*
dviṣ	to hate	*dvêṣ-ṭum*	*dvêk-ṣy-a-ti*
puṣ	to nourish	*pôṣ-ṭum*	*pôk-ṣy-a-ti*

Finally, remember the **SIB** rule

$$\text{oi. } s + s \quad \rightarrow \quad \text{oi. } t + s$$

with the following example:

√	translation	infinitive	future, 3. sg.
vas	to dwell	*vas-tum*	*vat-sy-a-ti*

C.3.8. Causatives

As a rule, causatives are built from the full grade. However, since the ie. root vowel is *o* for causatives, Brugmann's law applies. Therefore, one often observes *ā* which should not be addressed as a lengthened grade.

I begin with the full grade in closed syllables, typical for roots with *i* or *u*. With *i* we find

viś	,	*vêś*	- *ay*	–	*a*	-	*ti*
oi. root		root	suffix		thematic		ending
in zero grade		in full grade			vowel		3. pers. sg.

and with *u*

◇ *bhôd-ay-a-ti* ("causes to be awake → awakens") ← *budh* ("to be awake")

◇ *kôp-ay-a-ti* ("causes to be angry → enrages") ← *kup* ("to be angry")

◇ *śôbh-ay-a-ti* ("causes to shine, to be beautiful") ← *śubh* ("to shine")

Oi. roots ending on long vowel *ā* (which full grade due to the laryngeal) use *p* to mark causatives:

◇ *sthā-p-ay-a-ti* ("causes to stand → sets") ← *sthā* ("to stand")

◇ *dā-p-ay-a-ti* ("causes to give") ← *dā* ("to give")

◇ *snā-p-ay-a-ti* ("causes to swim → to bathe") ← *snā* ("to swim")

◇ *jñā-p-ay-a-ti* ("causes to know → inform") ← *jñā* ("to know")

Brugmann's law is responsible for these examples:

◇ *kār-ay-a-ti* ("causes to do → orders") ← *kṛ* ("to make")

◇ *tyāj-ay-a-ti* ("causes to abandon") ← *tyaj* ("to abandon")

◇ *pāṭ-ay-a-ti* ("causes to read → teaches") ← *paṭ* ("to read")

◇ *mār-ay-a-ti* ("causes to die → kills") ← *mṛ* ("to die")

◇ *vāc-ay-a-ti* ("make [a text] speak → read") ← *vac* ("to speak")

◇ *śrāv-ay-a-ti* ("causes to hear → teaches") ← *śru* ("to hear")

◇ *sād-ay-a-ti* ("causes to sit → makes sit") ← *sad* ("to sit")

Applications of Brugmann's law is regularly prevented by laryngeals as in these examples:

√	3. pers. sg.	translation
jan	*jan-ay-a-ti* ← ie.**ǵonH-ey-e-ti*	he begets
dam	*dam-ay-a-ti* ← ie. **domH-ey-e-ti*	he tames

In contrast, we find "wrong"

◇ *bhāv-aya-ti* ("causes to be → makes") from oi. root *bhū* ("to be") ← ie. **bhuH,*

where the laryngeal should have prevented application of **L*o***.

Perhaps due to the two consonants following *u*, zero-grade is exhibited in

◇ *cumb-aya-ti* ("causes to kiss") ← *cumb* ("to kiss")

C.3.9. Gerunds in *am*

There exists a rare gerund that is formed with *am*. It mostly uses the full grade:

√	translation	*ām*-gerund, full grade
kṣip	to throw	*kṣêp-am*
dṛś	to see	*darś-am*
bandh (f.g.)	to bind	*bandh*-am
buj	to enjoy	*bôj-am*

However, by **L*o***, one often witnesses long *ā* in open syllables:

√	translation	*ām*-gerund, lengthened grade
kṛ	to make	*kār-am*
grah	to grab	*grāh-am*
taḍ	to hit	*tāḍ-am*
dah	to burn	*dāh-am*
paṭ	to read	*pāṭ-am*
vah	to carry	*vāh-am*
śru	to hear	*śrāv-am*
smṛ	to remember	*smār-am*

Verbs like *trâi* regularly lead to *trāy-am*:

√	translation	*ām*-gerund, full grade
gâi	to sing	*gāy-am*
trâi	to protect	*trāy-am*
dhyâi	to meditate	*dhyāy-am*

However, *trây-am* might be misunderstood as *trâ-yam*. This misunderstanding gave rise to a gerund marker *yam* that is found in these examples:

√	translation	*ām*-gerund, full grade
dā	to give	*dā-yam*
dhā	to set, to place	*dhā-yam*
pā	to drink	*pā-yam*
mā	to measure	*mā-yam*

C.4. Past participle and other zero-grade forms

C.4.1. Root nouns

Before dealing with the past participles, we present the so-called root nouns where endings are directly affixed to the root. Most of them are feminine. Root nouns are typically indicated by

- ◇ the root in zero grade and
- ◇ the nom. sg. which does not exhibit any case ending. Its root-final consonant is characterized by loss of voice and aspiration as explained in subsection B.3.5.

Dental root-final consonant

In the case of dental root-final consonant, the "no voice, no aspiration" rule yields the obvious results:

- ◇ *yut* (stem *yudh*) ("battle")
- ◇ *mṛt* (stem *mṛd*) ("clay")
- ◇ *vidyut* (stem *vidyut*) ("flash of lightning")

Full grade

The root may sometimes be in full grade, for reasons explained in section C.1, pp. 77:

- ◇ *upa-ni-ṣat* (stem *upa-ni-ṣad*) ← ie. **sed*

- Old meaning: "the sitting down at the feet of another to listen to his words, and hence, secret knowledge given in this manner"
- Current opinion: "a placement of two or several things in a hierarchy, in particular with respect to a hierarchically interconnected universe"

◇ *saṃ-sat* (stem *saṃ-sad*) ("assembly") ← ie. **sed*

◇ *pari-ṣat* (stem *pari-ṣad*) ("assembly") ← ie. **sed*

◇ *ā-pat* (stem *ā-pad*) ("calamity") ← ie. **ped*

k or *ṭ* as root-final consonants

When the root ends in oi. *ś*, we are not suprised to see oi. *k* instead, since oi. *ś* goes back to ie. palatal *ḱ* (p. 35):

◇ *dṛk* (stem *dṛś*) ("sight") ← ie. root **derḱ*

But one also finds *ṭ*:

◇ *viṭ* (stem *viś*) ("house, people") ← ie. root **veiḱ*

Other examples are

◇ *bhuk* (stem *bhuj*) ("enjoyment, utility") ← ie. root **bheug*

◇ *miṭ* (stem *mih*) ("mist, haze, fog") ← ie. root**meiǵh*

◇ *śuk* (stem *śuc*) ("flame, grief") ← ie. root* *ḱeuk*

See subsection B.3.5, pp. 45 for a few attempts to distill rules.

C.4.2. General rule for PPP

Roughly speaking, the past participle (PPP) is constructed in this manner:

zero-grade root + *ta* (ie. **to*

Consider these examples with syllabic *ṛ* in both oi. root and PPP where the zero grade clearly shows:

√ in z.g.	3. pers. sg.	PPP	translation
kṛ	*kar-ô-ti*	*kṛ-ta*	to make
bhṛ	*bhar-a-ti*	*bhṛ-ta*	to carry
mṛ	*mri-ya-tê*	*mṛ-ta*	to die
smṛ	*smar-a-ti*	*smṛ-ta*	to remember
hṛ	*har-a-ti*	*hṛ-ta*	to take, to rob

Roots with *i* preserve this *i* in the PPP:

√ in z.g.	3. pers. sg.	PPP	translation
i	*ê-ti*	*i-ta*	to go
kṣip	*kṣip-a-ti*	*kṣip-ta*	to throw
ji	*jay-a-ti*	*ji-ta*	to defeat

Regarding *i* with prefixes, consider:

√	translation	PPP	translation
adhi-i	to study	*adhī-ta*	well read, learned
upa-i	to go towards	*upê-ta*	endowed with
pra-i	to set off, to die	*prê-ta*	gone forth → dead
vi-i	to diverge, to disappear	*vī-ta*	gone, freed from

Likewise, roots with *u* (or f.g. root with initial *v*) preserve this *u* in the PPP:

√	3. pers. sg.	PPP	translation
muc	*muñc-a-ti*	*muk-ta*	to liberate
yuj	*yu-na-k-ti*	*yuk-ta*	to join
vac (f.g.)	*vak-ti*	*uk-ta*	to speak
vap (f.g.)	*vap-a-ti*	*up-ta*	to sow
śru	*śr-ṇô-ti*	*śru-ta*	to listen
stu	*stâu-ti* (Narten)	*stu-ta*	to praise
hu	*ju-hô-ti*	*hu-ta*	to sacrifice

Instead of the *ta* marker, a few verbs also use *na*. Most roots in the table below end in *d* so that we obtain the expected backward assimilation:

√	3. pers. sg.	PPP	translation
khid	*khid-ya-ti*	*khin-na*	to suffer
tud	*tud-a-ti*	*tun-na*	to hit
nud	*nud-a-ti*	*nun-na*	to push

pad	*pad-y-a-tê*	*pan-na*	to fall, to go
bhid	*bhi-na-t-ti*	*bhin-na*	to break
sad (f.g.)	*sīd-a-ti*	*san-na*	to sit

But stems that end in oi. *j* also use the *na* marker:

$\surd$ in f.g.	3. pers. sg.	PPP	translation
bhañj	*bha-na-k-ti*	*bhag-na*	to break
majj	*majj-a-ti*	*mag-na*	to sink

In contrast to the PPP, the infinitive (section C.3) is typically formed by adding oi. *tum* to the full-grade root. However, since we have a suffix beginning with *t* in both cases, there are quite a number of similarities as will become obvious in the following subsecions.

Basically, gerunds ending with *tvā* use the zero-grade root as do the PPP. However, in many verbs, the infinitive seems to have influenced the formation of the gerund. Hence, we have many gerunds that use the normal grade, often along with a form in zero grade.

C.4.3. Oi. roots ending in a nasal

Sometimes, the oi. root is not in zero grade and therefore, it is not suitable for the purpose of forming the PPP. We then have to form the zero grade ourselves. An important class concerns the oi. roots ending in a nasal. According to subsection B.5.2 (pp. 66), a nasal that becomes syllabic turns into oi. *a*. Consider these examples:

$\surd$ in f.g.	3. pers. sg.	PPP	translation
gam	*ga-cch-a-ti*	ie. $^*g\underset{\circ}{m}$*-to* $\rightarrow$ *gata*	to go
tan	*ta-nô-ti*	ie. $^*t\underset{\circ}{n}$*-to* $\rightarrow$ *tata*	to stretch

and this list:

$\surd$ in f.g.	3. pers. sg.	PPP	translation
nam	*nam-a-ti*	*nata*	to salute
man	*man-y-a-tê*	*mata*	to think
yam	*yacch-a-ti*	*yata*	to restrain
ram	*ram-a-tê*	*rata*	to enjoy
han	*han-ti*	*hata*	to hit

The last example goes back ie. $^*g^when$ "to kill, to hit" where secondary palatalization

(before ie. *e*) produces *han-ti*. However, secondary palatalization cannot be invoked for the zero grade where we should have obtained $^*g^wh\underset{\circ}{n}$*-to* → *gha-ta*. *ha-ta* is easily explained by proportional analogy:

tan	with root-initial consonant *t*:	*tata*
just as		
han	with root-initial consonant *h*:	*hata*

C.4.4. Aspiration and cerebralization

Applying aspiration laws

If an oi. root ends in a voiced aspirate, the addition of *ta* necessitates the aspiration shift **ASh** which is associated with the name of Christian Bartholomae (see section B.3.3, pp. 37):

√	3. pers. sg.	PPP	translation
kṣubh	*kṣubh-y-a-ti*	*kṣub-dha*	to be upset
yudh	*yudh-y-a-tê*	*yud-dha*	to fight
labh (f.g.)	*labh-a-tê*	*lab-dha* (f.g.!)	to obtain
vṛdh	*vardh-a-tê*	*vṛd-dha*	to grow

Note that *lab-dha* is full grade. While *l* might become syllabic, the result n.at. *l̥b-dha* would be unusual.

Sometimes, Grassmann's law is also applied. It says: If you have two aspirated sounds, the first one becomes deaspirated. Nice examples are provided by these PPP:

√	future 3. sg.	PPP	translation
bandh ← **bhendh*	*bhant-sy-a-ti* ← **bhendh-s-*	*bad-dha* ← $^*bh\underset{\circ}{n}dh$*-to*	to bind
budh ← **bhudh*	*bhôt-sy-a-ti* ← **bheudh-s-*	*bud-dha* ← **bhudh-to*	to awake

where

◇ the root initial *bh* becomes deaspirated (**DA**)

◇ the root final *dh* undergoes the aspiration shift (**ASh**) due to Bartholomae.

We now need to mix these sound laws with the rules named secondary palatalization (**SPal**, fig. B.2 on p. 36). For example, we have

ie.*$dheg^wh$-*to* (z.g. with *to*-marker for PPP)
→ *dhegh-to* (no **SPal** before consonant *t*)
→ *degh-to* (**DA**)
→ *dag-dha* (***aā***, **ASh**, ***aā***)

and

ie.*$snig^wh$-*to* (z.g. with *to*-marker for PPP)
→ *snigh-to* (no **SPal** before *t*)
→ *snig-dha* (**ASh**, ***aā***)

Thus, we get these examples:

√	3. pers. sg.	PPP	translation
dah (f.g.)	*dah-a-ti*	*$dheg^wh$-*to* → *dag-dha* (f.g.!)	to burn
dih	*dêg-dhi*	**dhigh-to* → *dig-dhum*	to smear
duh	*dôg-dhi*	**dhugh-to* → *dug-dhum*	to milk
snih	*snih-y-a-ti*	*$snig^wh$-*to* → *snig-dha*	to love

A small mystery is provided by *nah* ("to bind") with PPP *nad-dha*. Presumably, *nadh* is the "correct" oi. full-grade stem from where *nah* was produced as a dialectal variant (see pp. 53). From *nadh*, the PPP *nad-dha* ("bound") is obtained by Bartholomae's law. The problem is that *naddha* would then be in full grade. The zero grade **addha* is unattested as is a hypothetic full-grade root **nandh* which could have produced the PPP *nad-dha* as *bandh* ("to bind") leads to *bad-dha*.

Applying cerebralization sound laws

In a number of verbs, the PPP involves cerebralization, in particular due to

Cer*D* oi. *ṣ/ś* + *t* → oi. *ṣṭ*
ẓ + *d/dh* → *ẓ* + *ḍ/ḍh*

First, consider oi. roots that end in *ś* that goes back to ie. *ḱ*:

◇ *daṃś* ("to bite") ← ie. **denḱ*

ie.*$dn̥ḱ$-*to* (z.g. with *to*-marker for PPP)
→ *daś-to* (syllabic *n̥* → *a*, **PPal**)
→ *daṣ-ṭa* (**Cer*D***, ***aā***)

◇ *dṛś* (“to see”) ← ie. **derḱ* with

ie.**dr̥̊ḱ-to* (z.g. with *to*-marker for PPP)
→ *dṛś-to* (**PPal**)
→ *dṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *pracch* (“to ask”) ← ie. **preḱ-sḱ* with

ie.**pr̥̊ḱ-to* (z.g. with *to*-marker for PPP)
→ *pṛś-to* (**PPal**)
→ *pṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *viś* (“to enter”) ← ie. **veiḱ* with

ie.**viḱ-to* (z.g. with *to*-marker for PPP)
→ *viś-to* (**PPal**)
→ *viṣ-ṭa* (**Cer*D***, ***aā***)

A second important cerebralization rule is the **RUKI** rule. It combines with **Cer*D*** in these examples:

◇ *iṣ* (“to wish”) ← ie. **h*$_2$*eis* with

ie.**h*$_2$*is-to* (z.g. with *to*-marker for PPP)
→ *iṣ-to* (**RUKI**)
→ *iṣ-ṭa* (**Cer*D***, ***aā***)

◇ *kṛṣ* (“to plough”) ← ie. **kers* with

ie.**kr̥̊s-to* (z.g. with *to*-marker for PPP)
→ *kṛṣ-to* (**RUKI**)
→ *kṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *dviṣ* (“to hate”) ← ie. **dveis* with

ie.**dvis-to* (z.g. with *to*-marker for PPP)
→ *dviṣ-to* (**RUKI**)
→ *dviṣ-ṭa* (**Cer*D***, ***aā***)

◇ *vṛṣ* (“to rain”) ← ie. **vers* with

ie.**vr̥̊s-to* (z.g. with *to*-marker for PPP)
→ *vṛṣ-to* (**RUKI**)
→ *vṛṣ-ṭa* (**Cer*D***, ***aā***)

Finally, before application of **RUKI**, a ***sz*** rule is applied in the PPP *iṣ-ṭa* of oi. *yaj* (“to sacrifice”):

ie. **iǵ-to* (z.g. with *to* PPP marker)
→ *is-to* (***sz*** before voiceless cons.)
→ *iṣ-to* (**RUKI**)
→ *iṣ-ṭa* (**Cer*D***, ***aā***)

and, very similarly, for the PPP of *sṛj* ("to throw, to create"):

ie. **sr̥ǵ-to* (z.g. with *to* PPP marker)
→ *sṛs-to* (***sz*** before voiceless cons.)
→ *sṛṣ-to* (**RUKI**)
→ *sṛṣ-ṭa* (**Cer*D***, ***aā***)

Interestingly, *iṣ-ṭa* is the regularly formed PPP of both

◇ *iṣ* ("to wish") ← ie. full grade **h₂eis* (see 114) and

◇ oi. *yaj* ("to sacrifice") ← ie. full grade **yeǵ* (see 115)

... both aspiration and cerebralization laws

Even more complicated is the explanation for the past participle of *vah* ("to flow", "to carry") which is *ūḍha*. Very strange? Well, yes. But regular. The ie. origin is **veǵh*, with zero grade *uǵh* (***hV***) so that we obtain

ie. **uǵh-to* (z.g. with *to* PPP marker)
→ *uǵ-dho* (**ASh**)
→ *uz-dho* (***sz*** before voiced stop)
→ *uẓ-dho* (**RUKI**)
→ *uẓ-ḍha* (**Cer*D***, ***aā***)
→ *ū-ḍha* (**CpL*z***)

A very parallel development leads to the past participle *līḍha* of *lih, lihati* ("to lick"), this time lengthening *i* rather than *u*:

ie. **liǵh-to* (z.g. with *to* PPP marker)
→ *liǵ-dho* (**ASh**)
→ *liz-dho* (***sz*** before voiced stop)
→ *liẓ-dho* (**RUKI**)
→ *liẓ-ḍha* (**Cer*D***, ***aā***)
→ *lī-ḍha* (**CpL*z***)

Similarly, but with Grassmann's law, *guh* ("to hide") goes back to ie. **gheuǵh* and we get

ie. **ghuǵh-to* (z.g. with *to* PPP marker)
→ *guǵ-dho* (**DA** and **ASh**)
→ *guz-dho* (***sz*** before voiced stop)
→ *guẓ-dho* (**RUKI**)
→ *guẓ-ḍha* (**Cer*D***, ***aā***)
→ *gū-ḍha* (**CpL*z***)

Also, with root vowel $\underset{\circ}{l}$ rather than *i* or *u*, we have ie. **delǵh* ("to be fix") so that we obtain

ie. **d$\underset{\circ}{l}$ǵh-to* (z.g. with *to* PPP marker)
→ *d$\underset{\circ}{r}$ǵ-dho* (***rl*** and **ASh**)
→ *d$\underset{\circ}{r}$z-dho* (***sz*** before voiced stop)
→ *d$\underset{\circ}{r}$ẓ-dho* (**RUKI**)
→ *d$\underset{\circ}{r}$ẓ-ḍha* (**Cer*D***, ***aā***)
→ *dṛ-ḍha* (loss of voiced *ẓ* without expected **CpL*z***)

Sometimes, one finds cerebral sounds which are not justified by sound laws. For example, the PPP of *ruh, rôhati* ("to climb") is *rūḍha*, but the ie. root is **h*$_1$*leudh* (ie. **dh* can produce oi. *h* according to subsection B.3.10, pp. 53) which should have lead to *rud-dha* (similar to *dug-dha* or *bud-dha*) instead.

A second example is *sah, sahati* ("to tolerate") with PPP *sô-ḍha* where the sound laws do not justify cerebral *ḍh*:

ie. **seǵh-to* (full grade (!) and *to* PPP marker)
→ *seǵ-dho* (**ASh**)
→ *saz-dha* (***sz*** before voiced stop, ***aā***)
→ *sô-dha* (**CpL*z***)

Here, as in *rūḍha* above, some analogy must have come into play.

C.4.5. Laryngeals

The PPP of quite a number of verbs can be explained by laryngeal theory. The reader is reminded of these sound laws:

neighborhood of laryngeal	sound law
after *i/u/e/o*	ie. $iH/uH/eH/oH \rightarrow \bar{\imath}/\bar{u}/\bar{a}/\bar{a}$
after $\underset{\circ}{n}$	ie. $C\underset{\circ}{n}H \rightarrow C\bar{a}$
after $\underset{\circ}{m}$	ie. $C\underset{\circ}{m}H \rightarrow C\bar{a}m$
after $C^{\texttt{labial}}\underset{\circ}{r}$	ie. $C^{\texttt{labial}}\underset{\circ}{r}H \rightarrow C\bar{u}r$
after $C^{\texttt{not labial}}\underset{\circ}{r}$	ie. $C^{\texttt{not labial}}\underset{\circ}{r}H \rightarrow C\bar{\imath}r$
between consonants	ie. $CHC \rightarrow CiC$
between consonant and vowel	ie. $CHV \rightarrow CV$

In line with these sound laws, several lists of laryngeal verbs are now presented. Consider, first, examples where the laryngeal leads to long $\bar{\imath}$ or $\bar{u}$:

$\sqrt{}$ in z.g.	3. pers. sg.	PPP	translation
$n\bar{\imath}$	$^*neyH\text{-}e\text{-}ti \rightarrow nay\text{-}a\text{-}ti$	$^*ni\text{-}H\text{-}to \rightarrow n\bar{\imath}\text{-}ta$	to lead
$bh\bar{\imath}$	$^*bhi\text{-}bheiH\text{-}ti \rightarrow bi\text{-}bh\hat{e}\text{-}ti$	$^*bhiH\text{-}to \rightarrow bh\bar{\imath}\text{-}ta$	to be afraid
$bh\bar{u}$	$^*bheuH\text{-}e\text{-}ti \rightarrow bhav\text{-}a\text{-}ti$	$^*bhu\text{-}H\text{-}to \rightarrow bh\bar{u}\text{-}ta$	to be
$p\bar{u}$	$^*pu\text{-}ne\text{-}H\text{-}ti \rightarrow pu\text{-}n\bar{a}\text{-}ti$	$^*pu\text{-}H\text{-}to \rightarrow p\bar{u}\text{-}ta$	to purify

Now come PPP formed with the marker *na* rather than *ta*:

$\sqrt{}$ in z.g.	3. pers. sg.	PPP	translation
$l\bar{\imath}$	$^*liH\text{-}y\text{-} \rightarrow l\bar{\imath}\text{-}ya\text{-}t\hat{e}$	$^*liH\text{-}no \rightarrow l\bar{\imath}\text{-}na$	to cling
$l\bar{u}$	$^*lu\text{-}ne\text{-}H\text{-}ti \rightarrow lu\text{-}n\bar{a}\text{-}ti$	$^*lu\text{-}H\text{-}no \rightarrow l\bar{u}\text{-}na$	to cut

Rather difficult is

$\sqrt{}$	3. pers. sg.	PPP	translation
$p\bar{a}$	$^*pi\text{-}ph_3\text{-}e\text{-}ti \rightarrow pi\text{-}b\text{-}a\text{-}ti$ (p. 81)	$^*ph_3i\text{-}to \rightarrow {}^*pih_3\text{-}to \rightarrow p\bar{\imath}\text{-}ta$	to drink

where the PPP is often explained by the metathesis $^*ph_3it \rightarrow {}^*pih_3t$ (**Lar_MTh**).

Now, consider, these laryngeal roots where the PPP is explained by "ie. $CHC \rightarrow CiC$":

$\sqrt{}$ in z.g.	3. pers. sg.	PPP	translation
$d\bar{a}$	$^*de\text{-}deh_3\text{-}ti \rightarrow da\text{-}d\bar{a}\text{-}ti$	$^*dh_3\text{-}to \rightarrow di\text{-}ta$ (1)	to give
$dh\bar{a}$	$^*de\text{-}dheh_1\text{-}ti \rightarrow da\text{-}dh\bar{a}\text{-}ti$	$^*dhh_1\text{-}to \rightarrow hi\text{-}ta$ (2)	to set, to place
$sth\bar{a}$	$ti\text{-}\dot{s}\dot{t}h\text{-}a\text{-}ti$	$^*sth_2\text{-}to \rightarrow sthi\text{-}ta$ (3)	to stand

1. $d\bar{a}$ has two different PPP, the regular *di-ta* given in the list above and the irregular (but more common) *dat-ta*. Perhaps, *da-dā-mi* was misunderstood as *dad-ā-mi* where a PPP *datta* ← *dad-ta* might be expected.

2. The word initial *dh* from $dh\bar{a}$ sometimes turns into *h* (see p. 53).

3. The aspirated root *sthā* is explained by analogy as is aspiration in the PPP *sthi-ta* where the laryngeal has caused aspiration and is reflected by *i* at the same time.

Many verbs show *i* between the (zero-grade or full-grade) root and the *ta*. For some of them, a former laryngeal may be responsible, but others have just extended this model to forms where it is not, historically, justified. Here are some examples: *paṭh-i-ta*, *cumb-i-ta*, *bhāṣ-i-ta*, *uṣ-i-ta* (from *vas* with **RUKI**).

Laryngeals can lengthen syllabic nasals:

√ in f.g.	3. pers. sg.	PPP	translation
kam (f.g.)	no present tense	$^*km_{\circ}$*-H-to* → *kān-ta* (2)	to love
kram (f.g.)	**kremH-ye-ti* → *krām-ya-ti* (1)	$^*krm_{\circ}$*-H-to* → *krān-ta* (2)	to walk
khan (f.g.)	**khenH-e-ti* → *khan-a-ti*	$^*khn_{\circ}$*-H-to* → *khā-ta*	to dig
jan (f.g.)	$^*ǵn_{\circ}$ *H-y-e-tei* → *jā-y-a-tê*	**ǵn-H-to* → *jā-ta*	to be born

1. *krām-ya-ti* is regular 4. class (i.e., zero-grade root). Then "ie. $C\underset{\circ}{m}H \rightarrow C\bar{a}m$" (**Lar_SY**) is regularly applied.

2. *kān-ta* is readily explained by **Lar_SY** and **BA.**

In contrast, *jñā-ta* from the root *jñā* (ie. **ǵenh*$_3$) can only be explained by levelling. See the dictionary.

Finally, we comment on a group of verbs where long vowels $\bar{\imath}$ or $\bar{u}$ go back to $\underset{\circ}{r}H$:

$$\text{ie. } C^{\texttt{labial}}\underset{\circ}{r}H \rightarrow C\bar{u}r$$
$$\text{ie. } C^{\texttt{not labial}}\underset{\circ}{r}H \rightarrow C\bar{\imath}r$$

All these forms have *na* as the PPP marker (as do *lī-na* and *lū-na* from above):

√ in z.g.	3. pers. sg.	PPP	translation
$k\bar{r}$	**kerH-e-ti* (no **SPal**!) → *kir-a-ti*	$^*kr_{\circ}$*-H-no* → *kīr-ṇa*	to scatter
$j\bar{r}$	$^*ǵr_{\circ}$*-H-y-e-ti* → *jīr-y-a-ti*	$^*jr_{\circ}$*-H-no* → *jīr-ṇa*	to waste away
$t\bar{r}$	**terH-e-ti* → *tar-a-ti*	$^*tr_{\circ}$*-H-no* → *tūr-ṇa*	to pass
$d\bar{r}$	$^*dr_{\circ}$*-ne-H-ti* → *dṛ-ṇā-ti*	$^*dr_{\circ}$*-H-no* → *dīr-ṇa*	to tear
$p\bar{r}$	$^*pl_{\circ}$*-ne-H-ti* → *pṛ-ṇā-ti*	$^*pl_{\circ}$*-H-no* → *pūr-ṇa*	to fill

It seems that *stṛ, stṛnôti* ("to spread") also belongs to his list because one has the PPP

stīr̥-ṇa similar to *stīrṇa*. Presumably, the ie. root is **terH*. Note, however, the second PPP *stṛta*.

As a final example, we turn to

√ in z.g.	3. pers. sg.	PPP	translation
div	**diHv-y-e-ti* → *dīv-y-a-ti*	**dyHv-to* → **dyuH-to* → *dyū-ta*	to play

Thus, starting with ie. **deiHv*, the zero-grade present tense *dīv-y-a-ti* is regular. Before the PPP marker *to*, *i* becomes the consonant *y* so that **Lar_MTh** gets applied to yield *dyū-ta*.

Some *i-ta* PPPs exist without any etymological justification for *i*:

√	3. pers. sg.	PPP	translation
paṭh	*paṭh-a-ti*	*paṭh-i-*ta	to read
pat	*pat-a-ti*	*pat-i-ta*	to fall

Here, the zero grade with *ta* as the PPP marker is not possible because plosives cannot be syllabic. Inserting *i* may make the forms more transparent.

C.4.6. Nouns and adjectives

Feminine action nouns with suffix *ti*

We have dealt with feminine action nouns with zero suffix above (see pp. 108). We now turn to derivations with suffixes. For many verbs, the PPP provides a model of how to form the *ti*-noun. Pretty obvious cases are

√ in z.g.	PPP	translation	*ti*-noun	translation
kṛ	*kṛ-ta*	to make	*kṛ-ti-s*	doing, deed
kṣip	*kṣip-ta*	to throw	*kṣip-ti-s*	throwing
bhṛ	*bhṛ-ta*	to carry	*bhṛ-ti-s*	support
muc	*muk-ta*	to liberate	*muk-ti-s*	liberation
mṛ	*mṛ-ta*	to die	*mṛ-ti-s*	death
yuj	*yuk-ta*	to join	*yuk-ti-s*	connection
vac (f.g.)	*uk-ta*	to speak	*uk-ti-s*	speech
vap (f.g.)	*up-ta*	to sow	*up-ti-s*	sowing seeds
śru	*śru-ta*	to listen	*śru-ti-s*	vedic text
stu	*stu-ta*	to praise	*stu-ti-s*	praise, hymn
smṛ	*smṛ-ta*	to remember	*smṛ-ti-s*	tradition

The very common root *i* ("to go") is contained in these *ti*-nouns:

√ *i* in z.g.	PPP	translation	*ti*-noun	translation
adhi-i	*adhī-ta*	to study	*adhī-ti-s*	study
anu-i	*anv-i-ta*	to follow	*anv-i-ti-s*	following after
abhi-i	*abhī-ta*	to arrive	*abhī-ti-s*	attack
ud-i	*ud-i-ta*	to go up	*ud-i-ti-s*	sunrise
upa-i	*upê-ta*	to go towards	*upê-ti-s*	approach
pra-i	*prê-ta*	to set off	*prê-ti-s*	escape

Oi. roots ending in a nasal lead to the feminine *ti*-nouns seen in the following table:

√ in f.g.	PPP	translation	*ti*-noun	translation
gam	*ga-ta*	to go	*ga-ti-s*	path
tan	*ta-ta*	to stretch	*ta-ti-s*	mass, crowd
nam	*na-ta*	to salute	*na-ti-s*	salutation
man	*ma-ta*	to think	*ma-ti-s*	thought
yam	*ya-ta*	to restrain	*ya-ti-s*	control
ram	*ra-ta*	to enjoy	*ra-ti-s*	pleasure
han	*ha-ta*	to hit	*ha-ti-s*	killing

Cerebralization is involved in these examples:

√ in f.g.	PPP	translation	*ti*-noun	translation
iṣ	*iṣ-ṭa*	to wish	*iṣ-ṭi-s*	wish
kṛṣ	*kṛṣ-ṭa*	to plough	*kṛṣ-ṭi-s*	ploughing, harvest
dṛś	*dṛṣ-ṭa*	to see	*dṛṣ-ṭi-s*	sight
budh	*bud-dha*	to awake	*bud-dhi-s*	idea, understanding
yaj	*iṣ-ṭa*	to sacrifice	*iṣ-ṭi-s*	sacrifice
vah	*ū-ḍha*	to flow, to carry	*ū-ḍhi-s*	carrying
viś	*viṣ-ṭa*	to enter	*viṣ-ṭi-s*	compulsory work
vṛdh	*vṛd-dha*	to grow	*vṛd-dhi-s*	growth
vṛṣ	*vṛṣ-ṭa*	to rain	*vṛṣ-ṭi-s*	rain

sṛj	*sṛṣ-ṭa*	to create	*sṛṣ-ṭi-s*	creation

Funny? *vṛd-dhi-s* ("growth, lengthened grade") is in zero grade!

And, of course, consider all these laryngeal roots:

√ in z.g.	PPP	translation	*ti*-noun	translation
kam (f.g.)	*kān-ta*	to love	*kān-ti-s*	desire, female beauty
khan (f.g.)	*khā-ta*	to dig	*khā-ti-s*	digging
jan (f.g.)	*jā-ta*	to be born	*jā-ti-s*	birth, caste
jr̄	*jīr-ṇa*	to waste away	*a-jīr-ti-s*	indigestibleness
dā	*di-ta*	to give	*di-ti-s*	offering, largess
	dat-ta	to give	*dat-ti-s*	giving, gift
dā	*di-ta*	to bind	*a-di-ti-s*	freedom, name of a goddess
dhā	*hi-ta*	to set, to place	*hi-ti-s*	mission, mandate
nī	*nī-ta*	to lead	*nī-ti-s*	conduct, policy
pā	*pī-ta*	to drink	*pī-ti-s*	drinking, tavern
pū	*pū-ta*	to purify	*pū-ti-s*	purity
pr̄	*pūr-ṇa*	to fill	*pūr-ti-s*	filling, reward
bhī	*bhī-ta*	to be afraid	*bhī-ti-s*	fear, danger
bhū	*bhū-ta*	to be	*bhū-ti-s*	existence, welfare
sthā	*sthi-ta*	to stand	*sthi-tis-s*	rule, standing

Finally, *s-ti-s* ("being (close to a master) → dependent, vassal") is the regular *ti*-noun from *as* ("to be"). One also finds *sti-pā* ("protecting the dependents").

Adjectives with *ra*

Quite a few adjectives exist that are built by adding *ra* to the zero grade of the verb:

√ in z.g.	PPP	translation	*ra* adjective	translation
uk-ṣ (1)		to get strong	*ug-ra*	powerful, mighty
kṛp	*kṛṣ-ṭa*	to moan	*kṛcch-ra* (**SIB**)	dangerous, painful
krū (n.at.) (1)		to form a crust	*krū-ra* (2)	bloody
kṣip	*kṣip-ta*	to throw	*kṣip-ra*	fast, quick

kṣud	*kṣud-da* (n.at.)	to crunch	*kṣud-ra*	mean
gṛdh	*gṛd-dha*	to be greedy	*gṛdh-ra*	greedy
			also *gṛdh-ra*	vulture
cit	*cit-ta*	to observe	*cit-ra*	bright
			also *cit-ra-m*	picture
chid	*chit-ta*	to cut	*chid-ra*	leaky, hole
dhī	*dhī-ta*	to reflect	*dhī-ra*	steady, head-strong
nādh		to be needy	*ādh-ra* (3)	poor, weak
miś	*miṣ-ta* (4)	to mix	*miś-ra*	diverse
vip		to tremble	*vip-ra*	excited, wise
		to be white	*śvitra*	whitish, white leprosy
sidh	*siddha*	to succeed	*sidh-ra*	perfect, good
sthā	*sthi-ta*	to stand	*sthi-ra*	steady, durable
sphāy		to grow fat	*sphi-ra*	abundant, vast
hiṃs	*hiṃs-i-ta*	to hurt	*hiṃs-ra*	hurting, vicious

1. See dictionary where other forms without *s*-extension are also mentioned.
2. See *kravis* in dictionary chapter.
3. **nHdh-ro* → *ādh-ra* (**Lar_SY**)
4. One meaning is "savoury, sweet".

If the oi. root begins with *a* (or laryngeal plus *e*), we see the full grade (which is the oi. root!) instead. Thus, *asra* ("throwing, painful") is build on the full grade of *as, asyati* ("to throw, to shoot"). Levelling seems to underlie this case. Also with full grade is *nam-ra* ("bowing down, humble") from oi. root *nam*. The zero grade would have been *na-ra* (by **SY_*N***), similar to the PPP *nata*. Similarly, we have the *ra*-adjectives from full grades:

√ in z.g.	PPP	translation	*ra* adjective	translation
dabh		to destroy	*dabh-ra*	little, deficient
			also *dah-ra* (see pp. 53)	small, tender
vak		to go crookedly	*vak-ra*	crooked, curved
vaj-ra		to be hard or strong	*vaj-ra*	as hard as diamond

Finally, the zero-grade adjectives

◇ *tīv-ra* ("severe, violent, intense")

◇ *śīgh-ra* ("quick")

are based on (probably laryngeal) roots that are scarcely attested.

C.4.7. Passive voice

Zero grades

The general rule for the passive voice is this:

oi. root + *y* + *a* + ātmanêpada ending

In many cases, the zero grade can readily be recognized:

	√ in z.g.	3. pers. sg. active	3. pers. sg. passive	translation
ie. root with *er*	*kṛṣ*	*kṛṣ*-a-ti	*kṛṣ-y-a-tê*	to plough
	dṛś	(*paśyati*)	*dṛś-y-a-tê*	to see
	sṛj	*sṛj-a-ti*	*sṛj-y-a-tê*	to create
ie. root with *ei*	*iṣ*	*icch-a-ti*	*icch-y-a-tê*	to wish
	kliś	*kliś-y-a-tê* (1)	*kliś-y-a-tê* (1)	to suffer
	kṣip	*kṣip-a-ti*	*klip-y-a-tê*	to throw
	viś	*viś-a-ti*	*viś-y-a-tê*	to enter
ie. root with *eu*	*nud*	*nud-a-tê*	*nud-y-a-tê*	to push
	budh	*bôdh-a-ti*	*budh-y-a-tê*	to awake
	mud	*môd-a-ti*	*mud-y-a-tê*	to rejoice

1. *kliś-y-a-tê* is an example where verbs of the 4. class (with *ya*) (here ātmanêpada!) equal the passive voice.

The zero grade is also obvious for some oi. roots with initial *ya* or *va*:

√ in z.g.	3. pers. sg. active	3. pers. sg. passive	translation
yaj	*yaj-a-ti*	*ij-y-a-tê*	to sacrifice
vac	*vak-ti*	*uc-y-a-tê*	to speak
vad	*vad-a-ti*	*ud-y-a-tê*	to speak
vas	*vas-a-ti*	*uṣ-y-a-tê*	to dwell
vah	*vah-a-ti*	*uh-y-a-tê*	to flow, to carry

In the following examples, **SY_*N*** is responsible for *a* in the zero grades:

√ in f.g.	3. pers. sg. active	3. pers. sg. passive	translation
granth	*grath-nā-ti*	*grath-y-a-tê*	to bind, to compile
bandh	*badh-nā-ti*	*badh-y-a-tê*	to bind, to compile
manth	*math-nā-ti*	*math-y-a-tê*	to stir, to shake

From subsection B.2.2 (pp. 20), we know the *mr-iy-a-tê* rule:

$$CryV \quad \rightarrow \quad CriyV$$

The following passive forms fall under this rule:

√ in z.g.	3. pers. sg. active	3. pers. sg. passive	translation
kṛ	*kar-ô-ti*	*kri-y-a-tê*	to make
bhṛ	*bhar-a-ti*	*bhri-y-a-tê*	to carry
mṛ	*mri-ya-tê* (1)	*mri-y-a-tê* (1)	to die
vṛ	*vṛ-nā-ti*	*vri-y-a-tê*	to choose
sṛ	*sar-a-ti*	*sri-y-a-tê*	to flow, to move
hṛ	*har-a-ti*	*hri-y-a-tê*	to take, to rob

1. Same forms in active and passive.

Laryngeal verbs can be understood in this manner. Consider, first, *tīr-ṇa* versus *tīr-ya-tê*:

√ in z.g.	PPP	3. pers. sg. passive	translation
kṝ	*kīr-ṇa*	*kīr-y-a-tê*	to scatter
jṝ	*jīr-ṇa*	*jīr-y-a-tê*	to waste away
tṝ	*tīr-ṇa*	*tīr-y-a-tê*	to pass
dṝ	*dīr-ṇa*	*dīr-y-a-tê*	to tear, to pierce
pṝ	*pūr-ṇa*	*pūr-y-a-tê*	to fill

Knowing the PPP is also very helpful for these laryngeal words:

√ in z.g.	PPP	3. pers. sg. passive	translation
khan (f.g.)	*khā-ta*	*khā-y-a-tê*	to dig
nī	*nī-ta*	*nī-y-a-tê*	to lead
pū	*pū-ta*	*pū-y-a-tê*	to purify
bhī	*bhī-ta*	*bhī-y-a-tê*	to be afraid
bhū	*bhū-ta*	*bhū-y-a-tê*	to be

In many of these examples, long *ī* is regularly employed as it is in

√ in z.g.	PPP	3. pers. sg. passive	translation
pā	*pī-ta*	*pī-ya-tê*	to drink

where long *ī* might be explainable by metathesis $^*ph_3i \rightarrow {}^*pih_3$.

All these passive forms with long *ī* are responsible for those where long *ī* is not, etymologically, justfied:

√ in z.g.	PPP	3. pers. sg. passive	translation
dā	*di-ta*	*dī-y-a-tê*	to give
dhā	*hi-ta*	*dhī-y-a-tê*	to set, to place
sthā	*sthi-ta*	*sthī-ya-tê*	to stand

It seems that long *ū* that is expected in *pūr-ya-tê*, *pū-ya-tê,* or *bhū-ya-tê* above might alsso be responsible for the following forms by analogy:

√ in z.g.	PPP	3. pers. sg. passive	translation
stu	*stu-ta*	*stū-y-a-tê*	to praise
hā	*hī-na*/*hā-ta*	*hī-y-a-tê*	to abandon
hu	*hu-ta*	*hū-y-a-tê*	to sacrifice

Irregular full grades

In contrast to the regular zero grade, some passives use the full grade:

√	PPP	3. pers. sg. passive	translation
ghuṣ	*ghuṣ-ṭa*	*ghôṣ-y-a-tê* (1)	to proclaim
cur		*côr-y-a-tê* (1)	to steal
paṭh	*paṭh-i-*ta (2)	*paṭh-y-a-tê* (3)	to read
pat	*pat-i-ta* (2)	*pat-y-a-tê* (3)	to fall

tyaj (f.g.)	*tyak-ta*	*tyaj-y-a-tê* (3)	to abandon
labh (f.g.)	*lab-dha* (f.g.!)	*labh-y-a-tê* (3)	to obtain
sad (f.g.)	*san-na*	*sad-y-a-tê* (3)	to sit
smṛ	*smṛ-ta*	*smar-y-a-tê* (4)	to remember

1. Passive forms for (3) could have used the zero grade (n.at. *ghuṣ-y-a-tê*) without any problem.

2. Some verbs like *pat* use *i-ta* as the PPP marker without etymological justification.

3. None of the root-initial or root-final consonants can become syllabic. (Note, however, that *l* might become syllabic. Levelling might have rectified the outcome n.at. *ḷbh-y-a-tê*.) Therefore, the full grade cannot be avoided.

4. At a first glance, u.at. *smṛ-ya-tê* seems possible. However, it would violate the *mr-iy-a-tê* rule (pp. 20):

   $$CryV \quad \rightarrow \quad CriyV$$

   which would then lead to u.at. and difficult to recognize *smr-iya-tê* → *sar-iya-tê*.

Full grade are consistently present in nasal roots:

√	PPP	3. pers. sg. passive	translation
gam	*ga-ta*	*gam-y-a-tê*	to go
tan	*ta-ta*	*tan-y-a-tê*	to stretch
nam	*nata*	*nam-y-a-tê*	to salute
man	*mata*	*man-y-a-tê*	to think
yam	*yata*	*yam-y-a-tê*	to restrain
ram	*rata*	*ram-y-a-tê*	to enjoy
han	*hata*	*han-y-a-tê*	to hit

There are very good reasons for the irregular full grade here. For example, the regularly built passive form from *nam* is not *nam-ya-tê* but *na-ya-tê* ← **nm̥-* (where *a* derives from syllabic *m̥*. And *na-ya-tê* might easily be understood *nay-a-tê* from *nī* ("to lead").

C.4.8. Desideratives

Reduplication

Desideratives and frequentatives (next subsection) use reduplication. Additionally, reduplications are found in three other grammatical instances as well:

◇ The reader is invited to compare the verbs of the third class (pp. 86) which also function with reduplication.

◇ Sanskrit perfect forms are mostly formed in a reduplicative fashion (see pp. C.7, pp. 188).

◇ One of the aorist formations is by way of reduplication (see pp. C.8, pp. 196).

◇ Frequentative verbs also use reduplication (see pp. 138).

Simple examples from the zero grade or, occasionally, the full grade

Roughly speaking, desideratives are built according to this rule:

ie. root	→	desiderative
C_1FgC_2	→	C_1Zg-C_1ZgC_2-*s*-

Consider the following quite transparent example *yuj* with

◇ *u*-reduplication,

◇ zero grade, and

◇ *s* marker:

* *yu-yug-s-*
→ *yu-yuk-s-* (**BA**)
→ *yu-yuk-ṣ-* (**RUKI**) → *yu-yuk-ṣ-a-ti* he wishes to yoke

Apart from the verbal desiderative, a corresponding adjective and a corresponding noun are (often) formed. For example, the root *yudh* ("to fight") yields the desideratives

* *yu-yudh-s-*
→ *yu-yuth-s-* (**BA**)
→ *yu-yut-s-* (**ASh**, but *s* cannot be aspirated) → *yu-yut-s-a-ti* he wishes to fight
→ *yu-yut-s-u* combative
→ *yu-yut-s-ā* desire to fight

Instead of the reduplication with *u*, we find reduplication with *i* which is more common. This is the rule:

Desiderative reduplication with *u* if *u* is the root vowel
with *i* otherwise

In these examples reduplication means repeating the root-initial consonant but not the root-final one. Similarly, we have

√	3. pers. sg.	adjective	noun
jñā	*ji-jñā-s-a-tê* he wants to know	*ji-jñā-s-u* inquisitive	*ji-jñā-s-ā* curiosity
tyaj (2)	*ti-tyak-ṣ-a-ti* (2) he wants to abandon		
		ti-tik-ṣ-u (5) enduring patiently (5)	
pā	*pi-pā-s-a-tê* he wants to drink	*pi-pā-s-u* thirsty	*pi-pā-s-ā* thirst
man	*mi-māṃ-s-a-tê* (1) he examines		
miś ("to mix")		*mi-mik-śu* desirous for mixing	
muc	*mu-muk-ṣ-a-ti* he wants to liberate	*mu-muk-ṣ-u* wanting liberation	*mu-muk-ṣ-ā* desire for liberation
vac (2)	*vi-vak-ṣ-a-ti* (2) he wants to say	*vi-vak-ṣ-u* (2) wanting to say	*vi-vak-ṣ-ā* (2) desire to speak
vṛt	*vi-vṛt-s-a-ti* (3) he wishes to turn		
	vi-vart-i-ṣ-a-ti (4) he wishes to turn		
vṛdh	*vi-vṛt-s-a-ti* (3) he wants to grow		
vardhay (6)	*vi-vardhay-i-ṣ-a-ti* (4) he wants to grow	*vi-vardhay-i-ṣ-u* (4) wishing to augment	

1. *mi-māṃ-s-a-tê* seems irregular. Theoretically, the zero-grade desiderative of *man* is u.at. **mi-ma-s-a-tê* where syllabic *n̥* would have turned into *a*. See p. 134. For *ṃ* before *s*, compare the future *maṃ-sy-a-ti*.

2. *vi-vak-ṣ-a-ti* is irregular in that it builds on the full grade. Theoretically, the zero-grade desiderative of *vac* is u.at. **vy-uk-ṣ-a-ti*. In the syllabic conflict between *i/y* and *u/v* the latter would win by **SY_Conf**.

3. These desideratives from roots *vṛt* and *vṛdh* coincide (backward assimilation, *s* not aspiratable).

4. In order to avoid difficult forms, quasi-thematic *i* is sometimes introduced.

5. Semantically difficult

6. Causative of *vṛdh*

Applying Grassmann's deaspiration

We look at a few desiderative examples in some detail. The following examples involve Grassmann's deaspiration. From ie. **bheid* one obtains

	**bhi-bhid-s-*			
→	*bi-bhid-s-* (**DA**)			
→	*bi-bhit-s-* (**BA**)	→	*bi-bhit-s-a-ti*	he wishes to split
		→	*bi-bhit-s-u*	wishing to split
		→	*bi-bhit-s-ā*	desire to split

from ie. **bheug*:

	**bhu-bhug-s-*			
→	*bu-bhug-s-* (**DA**)			
→	*bu-bhuk-s-* (**BA**)			
→	*bu-bhuk-ṣ-* (**RUKI**)	→	*bu-bhuk-ṣ-a-ti*	he wishes to eat
		→	*bu-bhuk-ṣ-u*	hungry
		→	*bu-bhuk-ṣ-ā*	hunger

and from ie. **bheuH*:

	**bhu-bhuH-s-*			
→	*bu-bhū-s-* (**DA**)			
→	*bu-bhū-ṣ-* (**RUKI**)	→	*bu-bhū-ṣ-a-ti*	he wishes to be
		→	*bu-bhū-ṣ-u*	wishing to be
		→	*bu-bhū-ṣ-ā*	desire of being

We now consider a few example that involve root-final velars and palatals, such as ie. **gheuǵh*:

	**ghu-ghuǵh-s-*			
→	*gu-ghuǵh-s-* (**DA**)			
→	*gu-ghuk-s-* (**ASh**, **BA**)			
→	*gu-ghuk-ṣ-* (**RUKI**)	→	*gu-ghuk-ṣ-a-ti*	he wishes to hide
		→	*gu-ghuk-ṣ-u*	wishing to hide
		→	*gu-ghuk-ṣ-ā*	desire of hiding

duh ("to milk") ← ie. **dheugh*:

**dhu-dhugh-s-*
→ *du-dhugh-s-* (**DA**)
→ *du-dhuk-s-* (**ASh**, **BA**)
→ *du-dhuk-ṣ-* (**RUKI**) → *du-dhuk-ṣ-a-ti* he wishes to milk
→ *du-dhuk-ṣ-u* wishing to milk
→ *du-dhuk-ṣ-ā* desire of milking

and *lih* ("to milk") ← ie. **leiǵh*:

**li-liǵh-s-*
→ *li-lik-s-* (**ASh**, **BA**)
→ *li-lik-ṣ-* (**RUKI**) → *li-lik-ṣ-a-ti* he wishes to lick

From ie. **ghrebh*$_2$ → oi. *ghrah* (**Lar_CH**) one obtains the desiderative *ji-ghṛk-ṣ-u* which is a bit more complicated because the root-final is labial:

**ghi-ghr̥h-s-*
→ *gi-ghr̥h-s-* (**DA**)
→ *ji-ghr̥h-s-* (**SPal**)
→ *ji-ghṛk-ṣ-* (analogy with roots like *guh* above) → *ji-ghṛk-ṣ-a-ti* he wishes to grab
→ *ji-ghṛk-ṣ-u* wishing to rob
→ *ji-ghṛk-ṣ-ā* desire to rob

Later desideratives may not contain the root-initial aspiration, undoubtedly by levelling. An example is *du-duk-ṣ-* in contrast to *du-dhuk-ṣ-* from the root *duh*.

Merging of the reduplication syllable with the zero-grade root

In contrast to these examples, deaspiration does not take place for *bhaj* ("to allot, to divide") ← ie. **bheǵ*, gain with zero grade:

**bhi-bhǵ-s-*
→ *bhi-bj-s-* (**ASh**, but *s* cannot be aspirated)
→ *bhi-pk-s-* (**BA**)
→ *bhi-k-s-* (**CCl**)
→ *bhi-k-ṣ-* (**RUKI**) → *bhik-ṣ-a-ti* he wishes to share
→ *bhik-ṣ-u* beggar
→ *bhik-ṣ-ā* the act of begging

Here are quite a few other examples (and see *hiṃ-s-* below) where the reduplication syllable merges with the z.g. root. Consider *śak* ("to be able") ← ie. **ḱek*:

śi-śk-s-* (PPal**)
→ *śi-k-s-* (**CCl**)
→ *śi-k-ṣ-* (**RUKI**) → *śik-ṣ-a-ti* he learns
→ *śik-ṣ-u* desirous of learning
→ *śik-ṣ-ā* science

āp ("to obtain") ← ie. **h₁ep*:

**h₁i-h₁p-s-*
→ *īp-s-* (ie. *iH* → oi. *ī*) → *īp-s-a-ti* he wishes to obtain
→ *īp-s-u* desirous of
→ *īp-s-ā* desire to obtain

ie. **h₃ek^w*:

**h₃i-h₃k^w-s-*
→ *īk^w-s-* (ie. *iH* → oi. *ī*)
→ *īk-s-* (see pp. 35)
→ *īk-ṣ-* (**RUKI**) → *īk-ṣ-a-ti* he watches over
→ *īk-s-ā* sight

ie. **h₂neḱ*:

**h₂i-h₂nḱ-s-*
→ *īak-s-* (**Lar_*V*, SY_*N*, SY_Conf, PPal**)
→ *iyak-s-* (***V*+*hV***)
→ *iyak-ṣ-* (**RUKI**) → ved. *iyak-ṣ-a-ti* he wishes to reach

ie. **h₂enh₁*:

**h₂i-h₂nh₁-s-*
→ *īni-s-* (twice **Lar_*V***)
→ *īni-ṣ-* (**RUKI**)
→ *anini-ṣ-* (by levelling) → *anini-ṣ-a-ti* he wishes to breathe

ie. **deh₃*:

**dh₃i-dh₃-s-*
→ *di-d-s-*
→ *di-t-s-* (**BA**) → *dit-s-a-ti* he wishes to give
→ *dit-s-u* desirous of giving
→ *dit-s-ā* desire to give

ie. **dheh*$_1$:

	**dhh*$_1$*i-dh*$_1$*-s-*			
→	*dhi-dh-s-*			
→	*dhi-th-s-* (**BA**)			
→	*dhi-t-s-* (**ASh**)	→	*dhit-s-a-ti*	he wishes to set

and ie. **dhebh*:

	**dhi-dhbh-s-*			
→	*dhi-dhbh-s-* (**DA**)			
→	*dhi-bh-s-* (**CCl**)			
→	*dhi-ph-s-* (**BA**)			
→	*dhi-p-s-* (**ASh**)	→	*dhip-s-a-ti*	he wishes to injure

(besides levelled *dipsati*)

And finally ie. **deiḱ* :

	**di-dḱ-s-*			
→	*dīḱ-ṣ-* (**CCl**)	→	*dīḱ-ṣ-a-ti*	he consecrates
		→	*dīḱ-ṣ-ā*	consecration

where compensatory lengthening occurs in contrast to *bhik-ṣ-a-ti* (p. 130).
and ie. **ped*:

	**pi-pd-s-*			
→	*pi-pd-s-* (**CCl**)			
→	*pi-t-s-* (**BA**)	→	*pit-s-a-ti*	he wishes to go
		→	*pit-s-u*	desirous of going
		→	*pit-s-ā*	desire to go

Secondary palatalization

Some desideratives are instances of secondary palatalization:

√	3. pers. sg.	adjective	noun
kṛ	*ci-kīr-ṣ-a-ti* (1) he wants to make	*ci-kīr-ṣ-u* (1) intending to make	*ci-kīr-ṣ-ā* (1) desire to make
gam	*ji-gam-i-ṣ-a-ti* (2, 3) he wants to go	*ji-gam-i-ṣ-u* (2, 3) intenting to go	*ji-gam-i-ṣ-ā* (2, 3) intenting to go
granth	*ji-granth-i-ṣ-a-ti* (2, 3) he wants to string together		
ghas	*ji-ghat-s-a-ti* (2, 4) he wants to consume	*ji-ghat-s-u* (2, 4) intending to consume	*ji-ghat-s-ā* (2, 4) desire to consume

1. *ci-kīr-ṣ-a-ti* etc. show surprising lengthening (perhaps due to analogy, see immediately below for *ti-tīr-ṣ-u*).

2. *ji-ghat-s-a-ti* and others show full grade of the root.

3. *ji-gam-i-ṣ-a-ti* etc. use "thematic" *i* without etymological justification.

4. **SIB**

Laryngeal roots ending on *rH*

Roots with long syllabic $\bar{r}$ ← ie. *rH* form the desiderative from the full grade or from the zero grade.

√ *CerH*	3. pers. sg.	adjective
kr̄	*ci-kar-i-ṣ-a-ti* (1, 2) he wants to throw out	*ci-kar-i-ṣ-u* (1, 2) desirous to throw out
tr̄	*ti-tīr-ṣ-a-ti* ← ie. **ti-tr̥H-s* (3) he wants to cross	*ti-tīr-ṣ-u* (3) desirous of crossing
dr̄	*di-dīr-ṣ-a-ti* (3) he wants to tear	*di-dīr-ṣ-u* (3) desirous of tearing
pr̄	*pi-par-ī-ṣ-a-ti* (2) he wants to spend completely (time)	
	pu-pūr-ṣ-a-ti ← ie. **pu-pr̥H-s* (4) he wants to spend completely (time)	

1. **SPal**

2. As *ji-gam-i-ṣ-a-ti* above, full grade plus "thematic" *i*.

3. **Lar_SY** after non-labial consonant

4. **Lar_SY** after labial consonant

Laryngeal suffix

It seems that instead of the desiderative suffix *s*, alternatively a desiderative suffix *Hs* was employed:

√ in z.g.	3. pers. sg.	adjective	noun
ji	*ji-gī-ṣ-a-ti* (1) he wants to conquer	*ji-gī-ṣ-u* (1) imperialist	*ji-gī-ṣ-ā* (1) desire to conquer
mṛ	*mu-mūr-ṣ-a-ti* (2) he wants to die	*mu-mūr-ṣ-u* (2) wanting to die	*mu-mūr-ṣ-ā* (2) desire to die
śru	*śu-śrū-ṣ-a-tê* (1) he wants to hear	*śu-śrū-ṣ-u* (1) obedient	*śu-śrū-ṣ-ā* (1) obedience
sṛ	*si-ṣīr-ṣ-a-ti* (3) he wants to run		

1. Long *ī* in *ji-gī-ṣ-a-ti* may be explainable by a suffix *Hs* rather than just *s*. Similarly, long *ū* in *śu-śrū-ṣ-a-tê* may also be due to suffix *Hs*.

2. The same laryngeal is responsible for *mu-mūr-ṣ-a-ti*. Similar to *pu-pūr-ṣ-a-ti* above, the labial (!) *m* is responsible for producing *mūr* in the main syllable and hence *mu* as the reduplicative syllable.

3. Similar to *ti-tīr-ṣ-a-ti* above, one obtains *īr-ṣ* from *r̥H*s, but note

   a) ie. root **terH* and desiderative **ti-tr̥H-s-* → *ti-tīr-ṣ-* versus

   b) ie. root **ser* and desiderative **si-sr̥-Hs-* → *si-ṣīr-ṣ-*

   Perhaps, this explanation overuses laryngeals. Analogy may be an alternative explantion.

There exist several desideratives for *man* ("to think") ← ie. **men* with desiderative suffix *s*, a few of which have been mentioned above. Employing the desiderative suffix *Hs* one may, with too many tricks, arrive at the name for one of the six philosophical systems:

**mi-mn̥-Hs-*
→ **mi-mn̥H-s-*
→ *mi-mā-s-* (laryngeal after syllabic *n̥*)
→ *mi-māṃ-s-* (lev. from *maṃ-sy-a-ti*?)
→ *mī-māṃ-s-* (long *ī* for unclear reasons) → *mī-māṃ-s-a-tê* he doubts
→ *mī-māṃ-s-ā* investigation

There exist two different desideratives for *han* ("to kill") ← ie. **g*^{w}*hen*, depending on the suffix. On the one hand, we have the *Hs* desiderative:

g^whi-$g^wh\underset{\circ}{n}$-Hs-
→ *g^whi-$g^wh\bar{a}$-s-* (laryngeal after syllabic $\underset{\circ}{n}$)
→ *g^wi-$g^wh\bar{a}$-s-* (**DA**)
→ *ji-ghā-s-* (**SPal**)
→ *ji-ghāṃ-s-* (lev. from *haṃ-sy-a-ti*?)

→ *ji-ghāṃ-s-a-ti* he wishes to kill
→ *ji-ghāṃ-s-u* revengeful
→ *ji-ghāṃ-s-ā* revenge

On the other hand, the *s* suffix yields:

g^whi-g^whn-s-
→ *hi-g^whn-s-* (**SPal**)
→ *hi-n-s-* (**CCl**)
→ *hi-ṃ-s-*

→ *hiṃ-s-a-ti* he injures
→ *hiṃ-s-ā* injury

Apparently, cluster simplification occured before *n* between consonants turns into $\underset{\circ}{n}$ and then into *a* (**SY_*N***).

C.4.9. Compound-final "zero grades"

At the end of compounds, we often find forms like *dvi-ja* that look like zero grades. Mostly, they are formed with short *a* (rarely than short *i* or *u*) which cannot be explained by the zero grade. Let us call these forms ultra-zero grades. A few are best understood as zero grades:

◇ *gam, gacch-a-ti* ("to go") with PPP *ga-ta*
- *kha-ga* ("moving in the ether → bird/sun")
- *a-ga* ("not going → tree")

◇ *dhā, dadhāti* ("to set") with PPP *dhh_1-to* → *hi-ta*
- *ab-dhis* m. ("holding water → ocean") ← *ap* ("water") with apparent backward assimilation

◇ *nī, nayati* ("to lead") with PPP **niH-to* → *nī-ta*
- *pat-nī* f. ("lead by husband (*pati*) → wife")
- *sêna-nī* m. ("army leader, general")
- *grāma-ṇī* m. ("village leader")
- *agra-ṇī* m. ("leader")

◇ *vid, vêt-ti* ("to know") with PPP *vit-ta*, *vid-i-ta*
- *vêda-vit* (" *Veda* knowing")

- *ātma-vit* (“knower of the self”)

Two odd example add *t* (perhaps in analogy to *vêda-vit*):

◇ *ji, jayati* (“to lead”) with PPP *ji-ta*

- *indra-jit* m. (“conqueror of *Indra*”)
- *apsu-jit* (“conquering the waters”), with loc. pl. of *ap* (“water”) instead of stem form (analogy with *apsu-ja* where the loc. makes sense)

◇ *bhṛ, bharati* (“to bear”) with PPP *bhṛ-ta*

- *śastra-bhṛt* (“weapon bearer → warrior”)

The other examples presented below do not use the zero grade, but just short *a*:

◇ *chad, chadati* (“to cover”) with PPP **channa*

- *a-ccha* (“uncovered”) (gemination by some sandhi rule)

◇ *jan, jāyatê* (“to beget, to be born”) with PPP **ǵn̥-H-to* → *jā-ta*

- *dvi-ja* (“twice-born”) with *dvi-ja* m. (“brahmin, bird, tooth”)
- *ātma-ja* (“self-produced”) with *ātma-ja* m. (“son”) and *ātma-jā* f. (“daughter”)
- *pra-ja* (“bringing forth”) with *pra-jā* f. (“progeny (!), offspring”)
- *apsu-ja* (“born in the waters”) with loc. pl. of *ap* (“water”) instead of stem form

◇ *jñā, jānāti* (“to know”) with PPP **ǵn̥-h*$_3$*-to* → *jñā-ta*

- *sarva-jña* (“all-knowing”)

◇ *dā, dadāti* (“to give”) with PPP **dh*$_3$*-to* → *di-ta* besides *dat-ta*

- *vara-da* (“giving boons”) with *vara-das* m. (“*Brahmā*”)
- *ab-da* m. (“water giver → cloud”, “when clouds reappear → year”) ← *ap* (“water”) with apparent backward assimilation

◇ *pā, pibati*, 1. class (“to drink”) with PPP **ph*$_3$*i-to* → **pih*$_3$*-to* → *pī-ta*

- *sôma-pa* (“drinking *Soma*”)
- *pāda-pa* (“foot-drinker → tree”)

◇ *pā, pā-ti* (“to protect”) with PPP *pā-na*

- *pra-jā-pa* (“protecting the subjects”)
- *nṛ-pa* (“man protecting, king”)

◇ *sthā, ti-ṣṭh-a-ti* (“to stand”) with PPP **sth*$_2$*-to* → *sthi-ta*

- *gṛha-stha* (“householder”)
- *sattva-stha* (“established in *sattva*, firm in purity”)

- *granta-stha* ("knowledge present in a book")
- *kaṇṭha-stha* m. ("knowledge present in the throat" → "knowledge known by heart")

One might try to explain

◇ *pra-bhu* m. ("lord, master") ← ie. root **bheuH*, but here just **bhu*

◇ *a-bhva* ("not being (good) → monstrous, powerful")← ie. root **bheuH*, but here just **bhu*

◇ *dvi-ja* (ie. root **ǵenH*) ← ie. root **janH*, but here just **j̥n̥*

by positing the zero grade without the laryngeal (i.e., just the first syllable-closing consonant remains).

C.5. Lengthened-grade forms and forms using several grades

C.5.1. Agent nouns, instrument nouns, and action nouns

In section C.3.5, we have seen derivatives on *a* like

◇ *jay-a* ("victory") ← *ji* ("to conquer")

◇ *bhav-a* ("being, state") ← *bhū* ("to be") ← ie. **bhuH*

Building on the same verbal roots, we also find lengthened-grade words:

◇ *jāyā* f. ("she who has been captured, the wife")

◇ *bhāv-a* ("being, state")

Sometimes, the oi. root is not in zero grade. Then, the lenghtened grade becomes more likely, as in

◇ *anu-tāpa* m. ("remorse") ← *tap, tapati* ("to heat")

◇ *vi-ṣāda* m. ("sorrow") ← *sad, sīdati* ("to sit")

◇ *bhāga* m. ("part") ← *bhaj, bhajati* ("to divide, to allot")

C.5.2. Derivatives

Derivative adjectives regularly use the lengthened grade. Examples abound:

◇ *mānas-a* ("mental") ← *manas*, n. ("mind") ← *man* ("to think")

◇ *tāpas-a* ("ascetic") ← *tapas*, n ("asceticism") ← *tap* ("to burn")

◇ *pāca-ka* ("cook") ← *pac* ("to cook")

C.5.3. Frequentatives

Two patterns and six constructions

Frequentative verbs work with reduplication similar to desideratives. However, the reduplicated syllable is "emphasized" more strongly. Frequentatives mostly follow one of two patterns:

marker	frequentative
ya marker	reduplication syllable + root + *ya* + ātm.
ī marker	reduplication syllable + root + *ī* + par.

Observe:

◇ Any given verb typically exhibits both patterns.

◇ With these two patterns, frequentatives usually follow either of six (or so) different constructions.

Without any of the two markers, adjectives are occasionally formed.

First construction

For each of the six constructions, the general construction method is described together with a few examples. The first construction involves half vowels:

1. construction		ie. root	→	frequentative
	ya marker	C_1FgC_2	→	C_1Fg-C_1ZgC_2-*ya* + ātm.
	ī marker	C_1FgC_2	→	C_1Fg-C_1ZgC_2-*ī* + par.
example	*ya* marker	*reud*	→	*rô-rud-ya-tê*
	ī marker	*reud*	→	*rô-rud-ī-ti*

For example, with expected Grassmann deaspiration,

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
budh	*bô-budh-ya-tê*	*bô-budh-ī-ti*	to know
bhid	*bê-bhid-ya-tê*	*bê-bhid-ī-ti*	to split
lih	*lê-lih-ya-tê*	*lê-lih-ī-ti*	to lick
śuc	*śô-śuc-ya-tê*	*śô-śuc-ī-ti*	to grieve
śubh	*śô-śubh-ya-tê*	*śô-śubh-ī-ti*	to shine
svap (f.g.)	*sô-ṣup-ya-tê*	see second construction	to sleep

1. *car* ("to go, to stir") ← ie. $*k^wel$ has the frequentive adjective *ca-kr-a* ("unsteady" → "wheel"). Secondary palatalization is seen in the oi. root and in the reduplication syllable, but not, any more, before *r*.

Second construction

The first construction uses the sequence *Fg-Zg*, the second construction employs higher grades, i.e., *Lg-Fg*:

2. construction		ie. root	→	frequentative
	ya marker	C_1FgC_2	→	C_1Lg-C_1FgC_2-*ya* + ātm.
	ī marker	C_1FgC_2	→	C_1Lg-C_1FgC_2-*ī* + par.
example	*ya* marker	*sed*	→	*sā-sad-ya-tê*
	ī marker	*sed*	→	*sā-sad-ī-ti*

All the examples are transparent:

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
jval	*jvā-jval-ya-tê*	*jvā-jval-ī-ti*	to burn
pac	*pā-pac-ya-tê*	*pā-pac-ī-ti*	to cook
yac	*yā-yac-ya-tê*	*yā-yac-ī-ti*	to sacrifice
vad	*vā-vad-ya-tê*	*vā-vad-ī-ti*	to speak
smṛ	*smā-smar-ya-tê*	*smā-smar-ī-ti*	to remember
svap	see first construction	*sā-svap-ī-ti*	to sleep

As in desideratives like *śu-śrū-ṣ-u*, only the first root-initial consonant gets reduplicated in *jval* and *svap*.

Third construction

In contrast to the first and second construction, the third one uses the root-final consonants in reduplication:

3. construction		ie. root	→	frequentative
	ya marker	C_1FgC_2	→	C_1FgC_2-C_1FgC_2-*ya* + ātm.
	ī marker	C_1FgC_2	→	C_1FgC_2-C_1FgC_2-*ī* + par.
example	*ya* marker	*nem*	→	*nan-nam-ya-tê*
	ī marker	*nem*	→	*nan-nam-ī-ti*

Here are a few examples:

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
kram	*caṅ-kram-ya-tê* (1, 2)	*caṅ-kram-ī-ti* (1, 2)	to walk
gam	*jaṅ-gam-ya-tê* (2)	*jaṅ-gam-ī-ti* (2)	to go
car		*car-car-ī-ti* (2)	
bhram	*bam-bhram-ya-tê* (1, 3)	*bam-bhram-ī-ti* (1, 3)	to roam

1. Regularly, only the first word-initial consonant gets reduplicated. Therefore: *caṅ-kram-ya-tê* and *bam-bhram-ya-tê*.

2. Secondary palatalization is seen in *caṅ-kram-ya-tê* and *jaṅ-gam-ya-tê*. This shows that the root vowel is truly reduplicated for the case of frequentatives. For example, ie. **kem-krem-* → *caṅ-kram*. These verbs also show expected backward assimilation where the suitable class nasal (here: the velar one) is used. Secondary palatalization is also present in *car-car-ī-ti*, but here the palatalization is seen already in the oi. root.

3. Grassmann deaspiration

Note that most of the above examples are nasal stems. Its construction could have been misunderstood in this manner:

3. construction		ie. root	→	frequentative
	ya marker	C_1FgC_2	→	C_1Fg-*N*-C_1FgC_2-*ya* + ātm.
	ī marker	C_1FgC_2	→	C_1Fg-*N*-C_1FgC_2-*ī* + par.
example	*ya* marker	*bhrem*	→	*ba-m-bhram-ya-tê*
	ī marker	*bhrem*	→	*ba-m-bhram-ī-ti*

where a nasal is infixed after the reduplication syllable without root-final consonant. This is relevant for understanding frequentatives like

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
cal	*ca-ṅ-cal-ya-tê*		to stir, to quiver
jap	*ja-ṅ-jap-ya-tê*	*ja-ṅ-jap-ī-ti*	to recite
dah	*da-ṅ-dah-ya-tê*	*da-ṅ-dah-ī-ti*	to burn

Fourth construction

According to the fourth construction, long *ī* is inserted after the reduplication syllable:

4. construction		ie. root	→	frequentative
	ya marker	C_1erC_2	→	C_1ar-*ī*-$C_1ṛC_2$-*ya* + ātm.
	ī marker	C_1erC_2	→	C_1ar-*ī*-$C_1ṛC_2$-*ī* + par.
example	*ya* marker	*serp*	→	*sar-ī-sṛp-ya-tê*
	ī marker	*serp*	→	*sar-ī-sṛp-ī-ti*

Consider these examples that are exactly formed like *sar-ī-sṛp-ī-ti*:

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
nṛt	*nar-ī-nṛt-ya-tê*	see fifth construction	to dance
vṛt	*var-ī-vṛt-ya-tê*	*var-ī-vṛt-ī-ti*	to turn

Fifth construction

The fifth construction is similar to the fourth one. It shows up only in parasmâipada, but without the immediately preceding *ī* suffix:

5. construction	ie. root	→	frequentative
	C_1erC_2	→	C_1ar-ī-C_1arC_2- + par.
examples	*vert*	→	*var-ī-vart-ti*
	mer	→	*mar-ī-mar-ti*

Sixth construction

The sixth construction is applied to long *ā* roots:

√	3. sg. ātm. (*ya* suffix)	3. sg. par.	translation
dā	*dê-dī-y-a-tê*	*dā-dā-ti*	to give
pā	*pê-pī-y-a-tê*	*pā-pā-ti*	to drink

Similarly, compare *jê-jīr-y-a-tê* from root *jṝ* (to decay).

C.5.4. Gerundives

Gerundives are formed with *tavya*, *aṇīya*, or *ya*. They occur in all grades. Consider

√	translation	f.g.	z.g.	l.g.
kṛ	to make	*kar-tavya* (1), *kar-aṇīya*	*kṛ-tya*	*kār-ya*
gam	to go	*gan-tavya* (1), *gam-aṇīya*, *gam-ya*		
ji	to conquer	*jê-tavya* (1), *jê-ya*, *jay-ya* (2)		
tyaj	to abandon			*tyāj-ya*
dviṣ	to hate	*dvêṣ-ya*		
bhū	to be	*bhav-i-tavya* (1, 3), *bhav-ya*		

1. All *tavya*-forms are built on the full grade as the infinitives on *-tum* or the agent nouns on *-tar* (pp. 91).

2. *jê-ya* versus *jay-ya* is not totally clear. If the *ya*-forms begin with a consonant, *jê-ya* is expected and *jay-ya* in need of an explanation.

3. *bhav-i-tavya* is regular as is the infinitive *bhav-i-tum* due to the laryngeal root ie. $^*bhuH$.

Some gerunds surprisingly exhibit *ê*, such as

√	translation	f.g.		
dā	to give	*dê-ya*		
dhā	to set, to place	*dhê-ya*	*vi-dhê-ya* ("to be determined")	*vi-dhê-ya* ("duty")
jñā	to know	*jñê-ya*		
pā	to drink	*pê-ya*		
sthā	to stand	*sthê-ya*		

Perhaps, *pê-ya* is regularly formed in the following manner:

$$\begin{aligned} & ^*peh_3i\text{-}yo \\ \rightarrow\ & p\bar{a}i\text{-}ya\ (\textbf{Lar\_}\boldsymbol{V}) \\ \rightarrow\ & p\hat{e}\text{-}ya\ (\textbf{MVS}, \text{pp. } 30) \end{aligned}$$

while the other long *ā* verbs do not exhibit *i* in the root and are built by analogy with *pê-ya*.

C.6. Thematic and athematic verbs

C.6.1. Thematic verbs

Short introduction

Verbal classes 1, 4, 6, and 10 are thematic, the others athematic. The endings between thematic and athematic verbs are quite similar. Compare some forms of the thematic first-class verb *bhṛ* ("to carry") with the athematic third-class verb *bhī* ("to be afraid"):

	thematic: √*bhṛ*	athematic: √*bhī*	
1	*bhar-ā-mi*	*bi-bhê-mi*	present
2	*bhar-a-si*	*bi-bhê-ṣi*	tense
3	*bhar-a-ti*	*bi-bhê-ti*	singular
1	*a-bhar-a-m*	*a-bi-bhay-a-m*	imper-
2	*a-bhar-a-s*	*a-bi-bhê-s*	fect
3	*a-bhar-a-t*	*a-bi-bhê-t*	singular

There are two sets of endings, primary and secondary. Primary endings are used for the present tense and the future tense. Secondary endings are used for imperfect, imperative, and optative.

Endings for thematic verbs, parasmâipada

The thematic endings are given in the following table:

	thematic verbs parasmâipada			
	sg.	dual	pl.	
1	*mi* (1, 2)	*vas* (1)	*mas* (1)	present
2	*si* (1, 2)	*thas*	*tha*	tense
3	*ti* (1, 2)	*tas*	*n-ti* (1, 3)	(primary ending)
1	*m* (1)	*va* (1)	*ma* (1)	imper-
2	*s* (1)	*tam*	*ta*	fect
3	*t* (1)	*tām*	*n* (3, 4)	(secondary ending)
1	*ni* (5)	*va* (1)	*ma* (1)	imper-
2	∅ (5)	*tam*	*ta*	ative
3	*tu* (1)	*tām*	*n-tu* (1, 3)	(secondary ending)

1. *m, s*, and *t* characterize the 1., 2., and 3. pers., respectively. This holds for both thematic and athematic, both parasmâipada and ātmanêpada verbs. It is tempting to derive *m, s*, and *t* from personal pronouns. For the 1. pers., this seems clear:
   a) *m* (imperfect) or *mi* (pres. tense) is also seen in oi. gen. sg. *mama* and oi. gen./dat./acc. enclitic *mê* (and even in e. *me*).
   b) pl. *mas* ← ie. **mes* is the ie. 1. pers. pl. pronoun
   c) dual *vas* is still seen in the oi. gen./dat./acc. enclitic *vas*

2. Both the thematic and athematic verbal classes show *i* in the present tense sg. It is sometimes called the "here and now" particle. Secondary endings are older than primary ones.

3. From the oi. perspective, *n* indicates 3. pers. pl. as a comparison with sg. shows. Historically, *nt* may go back to the present participle.

4. Imperfect 3. pers. pl. ending is *n* instead of *nt* by **CCl**. The drop of *t* is regular: at the end of a word, only the first consonant of a consonant cluster remains (p. 44).

5. ∅ indicates the zero ending.

I now turn to a specific paradigm where we forms are built according to the formula

present stem
\+ theme vowel
\+ ending

This pattern is of ie. origin:

	ie. root *bher*		
	sg.	pl.	
1	*bher-ō* (1)	*bher-o-mes* (2)	present
2	*bher-e-si*	*bher-e-te*	tense
3	*bher-e-ti*	*bher-o-n-ti*	(primary ending)
1	*e-bher-o-m*	*e-bher-o-me* (2)	imperfect
2	*e-bher-e-s*	*e-bher-e-te*	(secondary ending)
3	*e-bher-e-t*	*e-bher-o-nt*	with augment *e*

The numbers are explained after the next table. While the thematic vowel was *e* or *o* in ie., it is, of course, *a* in Sanskrit:

	$\sqrt{}$*bhṛ* parasmâipada			
	sg.	dual	pl.	
1	*bhar-ā-mi* (1)	*bhar-ā-vas* (2)	*bhar-ā-mas* (2)	present
2	*bhar-a-si*	*bhar-a-thas*	*tha*	tense
3	*bhar-a-ti*	*bhar-a-tas*	*n-ti* (1,3)	(primary ending)
1	*a-bhar-a-m*	*a-bhar-ā-va* (2)	*a-bhar-ā-ma* (2)	imperfect
2	*a-bhar-a-s*	*a-bhar-a-tam*	*a-bhar-a-ta*	(secondary ending)
3	*a-bhar-a-t*	*a-bhar-a-tām*	*a-bhar-a-n*	with augment *a*
1	*bhar-ā-ni* (2)	*bhar-ā-va* (2)	*bhar-ā-ma* (2)	imper-
2	*bhar-a*	*bhar-a-tam*	*bhar-a-ta*	ative
3	*bhar-a-tu*	*bhar-a-tām*	*bhar-a-n-tu*	(secondary ending)

1. Instead of theme vowel *a*, we have *ā* in *bhar-ā-mi*. Historically, ie. **ō* indicates 1. pers. sg. for thematic verbs. See the table for ie. forms above. In contrast, *mi* was present in athematic verbs, only. From these athematic verbs, *mi* spread to thematic ones. Thus, the 1. pers. sg. has two markers.

2. **L*o***: oi. *bhar-ā-mas* ← ie. **bher-o-mes*.

Endings for thematic verbs, ātmanêpada

The ātmanêpada endings are difficult in that they are often amalgamated with the thematic vowel. For that reason, we now present the thematic vowel *a* together with the thematic endings in the following table:

	thematic verbs ātmanêpada			
	sg.	dual	pl.	
1	*ê* (1, 2)	*ā-vahê* (3)	*mahê* (1, 3)	present
2	*a-sê* (1, 2)	*êthê*	*a-dhvê*	tense
3	*a-tê* (1, 2)	*êtê*	*a-n-tê* (1)	(primary ending)
1	*ê* (4)	*ā-vahi* (3)	*ā-mahi* (1)	imper-
2	*a-thās* (1)	*êthām*	*a-dhvam*	fect
3	*a-ta* (1)	*êtām*	*a-n-ta* (1)	(secondary ending)
1	*âi*	*ā-vahâi* (3)	*ā-mahâi* (1, 3)	imper-
2	*a-sva*	*êthām*	*a-dhvam*	ative
3	*a-tām* (1)	*êtām*	*a-n-tām* (1)	(secondary ending)

1. Similar to the parasmâipada endings, we again have *m*, *s*, and *t* to characterize the 1., 2., and 3. pers., respectively. However, we have just *ê* rather than *mê* in the 1. pers. sg.

2. Similar to the parasmâipada endings, we again encounter the "here and now" particle *i* in the present tense sg.; *ê* goes back to ie. *oi*.

3. As in the parasmâipada case, we see *ā*, i.e., the operation of Brugmann's law in several forms.

4. Think of 1. pers. imperfect *ê* as *a-i* (in the athematic paradigm we have just *i*).

Presenting a paradigm, we use

present stem
\+ theme vowel *a* together with ending

and obtain:

	$\sqrt{}$*labh* ātmanêpada			
	sg.	dual	pl.	
1	*labh-ê*	*labh-ā-vahê*	*labh-mahê*	present
2	*labh-a-sê*	*labh-êthê*	*labh-a-dhvê*	tense
3	*labh-a-tê*	*labh-êtê*	*labh-a-n-tê*	(primary ending)
1	*a-labh-ê*	*a-labh-ā-vahi*	*a-labh-ā-mahi*	imperfect
2	*a-labh-a-thās*	*a-labh-êthām*	*a-labh-a-dhvam*	(secondary ending)
3	*a-labh-a-ta*	*a-labh-êtām*	*a-labh-a-n-ta*	with augment *a*
1	*labh-âi*	*labh-ā-vahâi* (3)	*labh-ā-mahâi* (1, 3)	imper-
2	*labh-a-sva*	*labh-êthām*	*labh-a-dhvam*	ative
3	*labh-a-tām* (1)	*labh-êtām*	*labh-a-n-tām* (1)	(secondary ending)

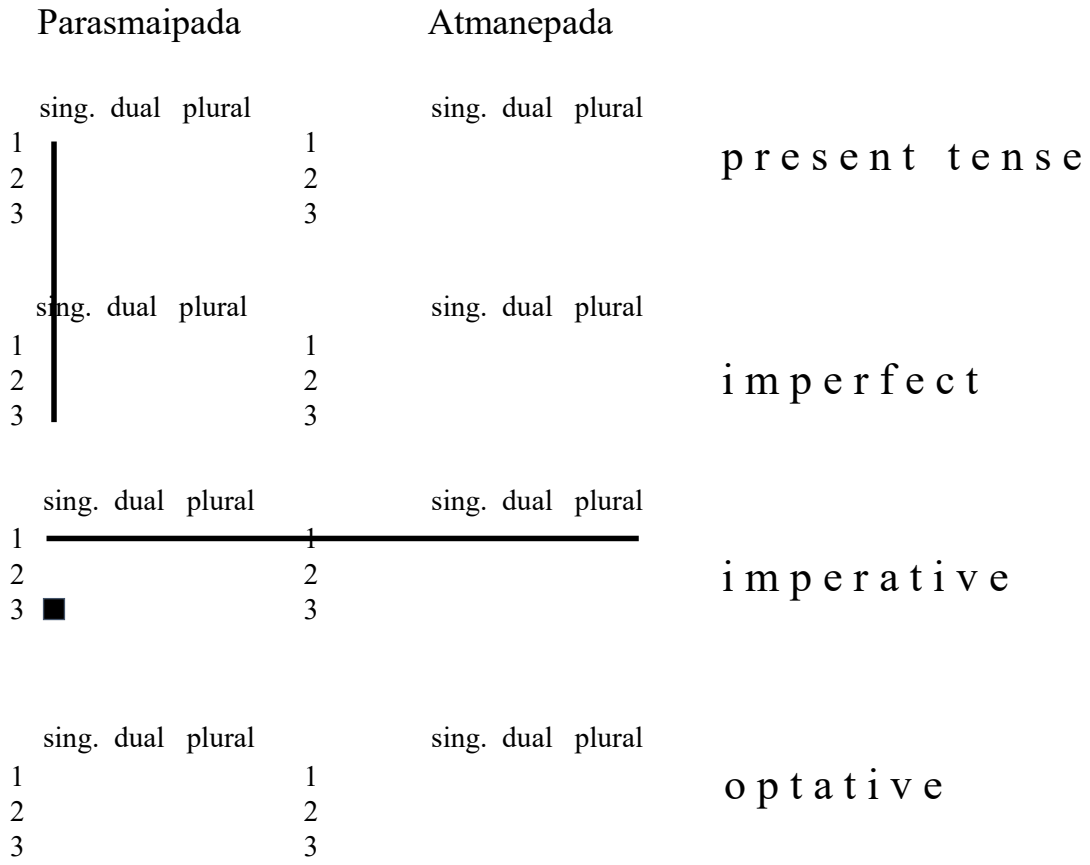

Figure C.2.: Strong forms in the athematic verbs

C.6.2. Athematic verbs

Distribution of weak and strong forms

Athematic verbs (classes 2, 3, 5, 7, 8, and 9) distinguish between weak forms and strong forms. Consider fig. C.2 where the strong forms are marked. The others are weak. If you are not the graphical type, try to remember that strong forms are present

- ◇ in parasmâipada present tense sg.
- ◇ in parasmâipada imperfect sg.
- ◇ in 1. pers. imperative, both parasmâipada and ātmanêpada
- ◇ in parasmâipada 3. pers. sg. imperative

Weak and strong forms are important because

◇ weak forms are defined by the zero grade

◇ strong form are defined by the normal grade

Endings for athematic verbs, parasmâipada

The athematic endings are very similar to the thematic ones:

	them. v. par.			athem. v. par.			
	sg.	dual	pl.	sg.	dual	pl.	
1	*mi*	*vas*	*mas*	***mi***	*vas*	*mas*	present
2	*si*	*thas*	*tha*	***si***	*thas*	*tha*	tense
3	*ti*	*tas*	*n-ti*	***ti***	*tas*	*(a)n-ti* (2)	(primary ending)
1	*m*	*va*	*ma*	***am*** (1)	*va*	*ma*	imper-
2	*s*	*tam*	*ta*	***s***	*tam*	*ta*	fect
3	*t*	*tām*	*n*	***t***	*tām*	*(a)n* (2)/*us* (3)	(secondary ending)
1	*ni*	*va*	*ma*	***āni*** (4)	***āva*** (4)	***āma*** (4)	imper-
2	∅	*tam*	*ta*	*dhi/hi/*∅ (5)	*tam*	*ta*	ative
3	*tu*	*tām*	*n-tu*	***tu***	*tām*	*(a)n-tu* (2)	(secondary ending)

1. Although we are now dealing with athematic verbs, the 1. pers. sg. imperfect ending is always *am*. (This holds for Sanskrit, but in ie. times, the ending was just *m* as might be expected.) There is a good reason for this ending. With *m* instead of *am*, we would encounter irrecognizable forms due to $\underset{\circ}{m} \rightarrow a$:

	1. pers. sg. imperfect	
	ending $\underset{\circ}{m} \rightarrow a$	ending *am*
$\sqrt{}$*yuj* (7. class)	n.at. *a-yu-na-j-a*	*a-yu-na-j-am*
$\sqrt{}$*vid* (2. class)	n.at. *a-vêd-a*	*a-vêd-am*

2. Spreading of the thematic *a* often occurs in the parasmâipada 3. pers. pl. forms. In fact, this is true for all athematic classes but the third class and the 2. class verb *śās* ("to rule").

3. The variant *us* is often seen in 3. pers. pl. imperfect.

4. The imperative 1. pers. endings do **not** differ between

   a) "lenghthened theme vowel" + "thematic ending" and

   b) athematic ending.

   This observation holds for parasmâipada (here) and ātmanêpada (below). Thus, the thematic vowel has also spread in these cases.

5. The ∅-ending is also seen in athematic verbs where you find *kur-u* ("make!") or *su-nu* ("press!"). Otherwise, the parasmâipada impv. 2. pers. sg. for the athematic classes can be *dhi* or *hi*:

	√	class	translation	imperative
dhi	*yuj*	7	to join	*yu-ṅi-g-dhi*
	vid	2	to know	*vid-dhi*
	hu	3	to sacrifice	*ju-hu-dhi*
hi	*āp*	5	to obtain	*āp-nu-hi*
	pū	9	to purify	*pū-nī-hi*
	bhī	3	to be afraid	*bi-bhī-hi*
	yā	2	to go	*yā-hi*

In Old Greek we find *thi* (in *i-thi*, "go!"). Thus, we know that oi. *dhi* is the original one, not oi. *hi*. *hi* could have developed from *dhi* through forms like these:

a) *vid-dhi* which could (in the speakers' minds) have developed from **vid-hi* by way of a sandhi rule.

b) *i-hi* may be dialectal developement from older n.at. *i-dhi* (see p. 53). From forms like *i-hi* the new ending *hi* may have spread to other verbs.

Endings for athematic verbs, ātmanêpada

Compare the ātmanêpada endings for thematic verbs (endings again amalgamated with the thematic vowel, left-hand side) and for athematic verbs (without, usually, thematic vowel, right-hand side):

	them. v. ātm.			athem. v. ātm.			
	sg.	dual	pl.	sg.	dual	pl.	
1	*ê*	*ā-vahê*	*mahê*	*ê* (2)	*vahê* (1)	*mahê* (1)	present
2	*a-sê*	*êthê*	*a-dhvê*	*sê* (1)	*āthê* (3)	*dhvê* (1)	tense
3	*a-tê*	*êtê*	*a-n-tê*	*tê* (1)	*ātê* (3)	*n-tê* (1)	(prim. end.)
1	*ê*	*ā-vahi*	*ā-mahi*	*i* (4)	*vahi* (1)	*mahi* (1)	imper-
2	*a-thās*	*êthām*	*a-dhvam*	*thās* (1)	*āthām* (3)	*dhvam* (1)	fect
3	*a-ta*	*êtām*	*a-n-ta*	*ta* (1)	*ātām* (3)	*n-ta* (1)	(sec. end.)
1	*âi*	*ā-vahâi*	*ā-mahâi*	***âi*** (2, 5)	***ā-vahâi*** (5)	***ā-mahâi*** (5)	imper-
2	*a-sva*	*êthām*	*a-dhvam*	*sva* (1)	*āthām* (3)	*dhvam* (1)	ative
3	*a-tām*	*êtām*	*a-n-tām*	*tām* (1)	*ātām* (3)	*n-tām* (1)	(sec. end.)

1. Within the ātmanêpada paradigm, many athematic endings are the same as the corresponding thematic ones, but, of course, the athematic ones do without the thematic vowel *a* (or *ā* before 1. pers. *m*- or *v*-endings).

2. We have *ê* and *âi* in both thematic and athematic 1. pers. sg., pres. tense and imperative, respectively.

3. The 2. and 3. pers. dual forms,

   a) begin with *ê* (including the thematic vowel) in thematic paradigms, but

   b) begin with *ā* in athematic paradigms.

4. 1. pers. sg. imperfect *i* (athematic) clearly corresponds to the thematic *ê* ← *a-i*.

5. The imperative 1. pers. endings do **not** differ between

   a) "(lenghthened) theme vowel" + "thematic ending" (endings amalgamated with the thematic vowel, left-hand side) and

   b) athematic ending (right-hand side).

   This observation holds for ātmanêpada (here) and parasmâipada (below). Thus, the thematic vowel has also spread in these cases.

Learners may find the 2. and 3. person duals confusing. It may be helpful to compare the present tense with its primary endings with the imperfect where we have secondary endings:

	thematic verbs					
	pres. tense			impf.		
	par.		ātm.	par.		ātm.
2	*a-thas*	*a* → *ê*	*ê-thê*	*a-tam*	*a* → *ê*	*ê-thām*
	↓ no *h*		↓ no *h*			↓ no *h*
3	*a-tas*	*a* → *ê*	*ê-tê*	*a-tām*	*a* → *ê*	*ê-tām*
	↓ no vowel		↓ *ā* for *ê*	↓ no vowel		↓ *ā* for *ê*

	athematic verbs					
	↓ pres. tense ↓			↓ impf. ↓		
	par.		ātmanêp.	parasm.		ātmanêp.
2	*thas*	∅ → *ā*	*ā-thê*	*tam*	∅ → *ā*	*ā-thām*
	↓ no *h*		↓ no *h*			↓ no *h*
3	*tas*	∅ → *ā*	*ā-tê*	*tām*	∅ → *ā*	*ā-tām*

For example, we have

	pres. tense		imperfect		
	parasmâipada	ātmanêpada	parasmâipada	ātmanêpada	
2	*bhar-a-thas*	*bhar-ê-thê*	*a-bhar-a-tam*	*a–bhar-ê-thām*	thematic
3	*bhar-a-tas*	*bhar-ê-tê*	*a-bhar-a-tām*	*a-bhar-ê-tām*	verb
2	*kuru-thas*	*kurv-ā-thê*	*a-kuru-tam*	*a-kurv-ā-thām*	athematic
3	*kuru-tas*	*kurv-ā-tê*	*a-kuru-tām*	*a-kurv-ā-tām*	verb

C.6.3. The second class

Introductory remark and overview

The 3. pers. sg. is often characterized by *t* and the 3. pers. pl. by *nt*. In the athematic classes in ātmanêpada, the *n* in the pl. marker *nt* becomes syllabic so that the *n* seems to have been dropped. Compare the thematic paradigm

$\sqrt{}$*bhṛ*, 1. class, ātm., 3. pers.		
sg.	pl.	
bhar-a-tê	*bhar-a-n-tê* ← **bher-o-n-toi*	present tense
a-bhar-a-ta	*a-bhar-a-n-ta*	imperfect
bhar-a-tām	*bhar-a-n-tām*	imperative

with the athematic one

$\sqrt{}$*vas*, 2. class, ātm., 3. pers.		
sg.	pl.	
vas-tê	*vas-a-tê* ← **ves-n̥-toi*	present tense
a-vas-ta	*a-vas-a-ta*	imperfect
vas-tām	*vas-a-tām*	imperative

It is clearly seen how *n-tê* in the thematic verbs contrasts with *a-tê* in the athematic ones. However, this holds true only for ātmanêpada. In contrast, the parasmâipada athematic 3. pers. pl. PRII forms borrow the thematic *a* from the thematic classes, in particular nearly always in the 2. class:

$\sqrt{}$*vac*, 2. class, par., 3. pers.		
sg.	pl.	
vak-ti	*vac-a-n-ti*← **ves-n̥-toi*	present tense
a-vak ← n.at. **a-vak-t*	*a-vac-a-n* ← n.at. **a-vac-a-n-t*	imperfect
vas-tu	*vac-a-n-tu*	imperative

Second-class verbs produce many challenging forms where the verbal root directly gets into contact with the personal endings. We consider in detail

vac ("to speak")

Our first verb, *vac* ("to speak"), is special in not distinguishing weak and strong forms. We have only strong forms:

	$\sqrt{vac}$ ← ie. $*vek^w$, parasmâipada			
	sg.	dual	pl.	
1	***vac-mi*** (4)	***vac-vas*** (4)	***vac-mas*** (4)	present
2	***vak-ṣi*** (2)	***vak-thas*** (1)	***vak-tha*** (1)	tense
3	***vak-ti*** (1)	***vak-tas*** (1)	***vac-an-ti*** (6)	(primary ending)
1	***a-vac-am*** (6)	***a-vac-va*** (4)	***a-vac-ma*** (4)	imperfect
2	***a-vak*** (5)	***a-vak-tam*** (1)	***a-vak-ta*** (1)	(secondary ending)
3	***a-vak*** (5)	***a-vak-tām*** (1)	***a-vac-an*** (6)	with augment *a*
1	***vac-āni*** (4)	***vac-āva*** (4)	***vac-āma*** (4)	imper-
2	***vag-dhi*** (3)	***vak-tam*** (1)	***vak-ta*** (1)	ative
3	***vak-tu***	***vak-tām*** (1)	***vac-an-tu*** (6)	(secondary ending)

1. No **Spal** before endings beginning with voiceless *t*
2. **RUKI**

3. In *vag-dhi*, we have expected **BA** before *dhi*, the regular ending.

4. In the above paradigm, we have *c* (as in the oi. root *vac*) in all forms where the endings start with a vowel (**SPal**), a nasal, or a liquid.

5. In the imperfect sg., we have

   ◇ 3. pers. *a-vak* ← ie. $*vek^w$-*t* and

   ◇ 2. pers. *a-vak* ← ie. $*vek^w$-*s*

   by **CCl**.

6. In all verbs of the second class (except *śās* ("to rule, to instruct")), parasmâipada 3. pers. pl. forms borrow *a* from the thematic class, as we see here with *vac-a-n-ti*.

yā ("to go")

Let us now turn to a second verb without alternation of weak and strong forms: *yā* ("to go"). *yā* belongs to the class of consequentials, as do some other second-class verbs like *mnā* or *ghrā* (see pp. 79). *yā* ("to go") has the second peculiarity in that the root ends in a vowel. This makes consonant-initial endings transparent.

	√*yā* parasmâipada			
	sg.	dual	pl.	
1	***yā-mi***	***yā-vas***	***yā-mas***	present
2	***yā-si***	***yā-thas***	***yā-tha***	tense
3	***yā-ti***	***yā-tas***	***yā-n-ti*** (1)	(prim. end.)
1	***a-yā-m*** (1)	***a-yā-va***	***a-yā-ma***	imperfect
2	***a-yā-s***	***a-yā-tam***	***a-yā-ta***	(sec. end.)
3	***a-yā-t***	***a-yā-tām***	***a-yā-n*** (1)/*a-y-us* (2)	with augm.
1	***yā-ni*** (1)	***yā-va*** (1)	***yā-ma*** (1)	imper-
2	***yā-hi*** (3)	***yā-tam***	***yā-ta***	ative
3	***yā-tu***	***yā-tām***	***yā-n-tu*** (1)	(sec. end.)

1. In some forms, the *ā* from root *yā* is confounded with an ending that (by analogy or other) begins with *a* or *ā*. Then, the obvious effect results.

2. *a-y-us* sometimes uses the alternative ending *us* (instead of *(a)n*) is used. And, we just have *a-y-us*, not *a-yâus* (which would be difficult to understand).

3. Note the *hi* rather than the *dhi* imperative.

vid ("to know")

We now turn to *vid* ("to know") which shows the expected distribution of strong and weak forms:

	$\surd$*vid* ← ie. **veid*, parasmâipada			
	sg.	dual	pl.	
1	***vêd-mi***	*vid-vas*	*vid-mas*	present
2	***vêt-ṣi*** (1)	*vit-thas* (1)	*vit-tha* (1)	tense
3	***vêt-ti*** (1)	*vit-tas* (1)	*vid-an-ti*	(prim. end.)
1	***a-vêd-am***	*a-vid-va*	*a-vid-ma*	imperfect
2	***a-vêt*/*a-vês*** (2)	*a-vit-tam* (1)	*a-vit-ta* (1)	(sec. end.)
3	***a-vêt*** (2)	*a-vit-tām* (1)	*a-vid-us* (4)	with augm.
1	***vêd-āni***	***vêd-āva***	***vêd-āma***	imper-
2	*vid-dhi* (3)	*vit-tam* (1)	*vit-ta* (1)	ative
3	***vêt-tu*** (1)	*vit-tām* (1)	*vid-an-tu*	(sec. end.)

1. The backward assimilation $d \rightarrow t$ is clearly seen before the many endings with t or *th* and before (voiceless) s in *vêt-si*.

2. In the imperfect sg., we have

   ◇ 3. pers. *a-vêt* ← ie. **e-veid-t* and

   ◇ 2. pers. *a-vêt* ← ie. **e-veid-s*

   where backward assimilation (making the dental voiceless) and then the drop of t or s, respectively, are to be expected (p. 44). *a-vês* is an alternative 2. pers. sg. which is clearly due to analogy with forms like *a-yā-s*.

3. *vid-dhi* is the regular 2. pers. sg. imperative.

4. *a-vid-us* shows the alternative ending *us* (instead of *(a)n*).

as ("to be")

Next comes *as* ("to be"):

	$\sqrt{as}$ ← ie. **Hes*, parasmâipada			
	sg.	dual	pl.	
1	***as-mi***	*s-vas*	*s-mas*	present
2	***asi*** (1)	*s-thas*	*s-tha* (1)	tense
3	***as-ti***	*s-tas*	*s-an-ti*	(prim. end.)
1	***ās-am*** (2)	***ās-va*** (3)	***ās-ma*** (3)	imperfect
2	***ās-i-s*** (4)	***ās-tam*** (3)	***ās-ta*** (3)	(sec. end.)
3	***ās-i-t*** (4)	***ās-tām*** (3)	***ās-an*** (3)	with augm.
1	***as-āni***	***as-āva***	***as-āma***	imper-
2	***ê-dhi*** (5)	*s-tam*	*s-ta*	ative
3	***as-tu***	*s-tām*	*s-an-tu*	(sec. end.)

1. We have degemination *asi* ← *as-si*.
2. Long *ā* in strong *ās-am* is to be understood as
   - ◇ *a* as imperfect augment plus
   - ◇ *a* from the root of *as*.

   Compare *a-vêd-am* with *a-as-am* → *ās-am* ("I was").
3. Imperfect dual and pl. forms are also strong, in contradiction to fig. C.2.
4. Originally, *ās-īs* and *ās-īt* are aorist forms that migrated to the imperfect.
5. We have *ê-dhi* ← n.at. *as-dhi* (see pp. 50) and again a strong form in contradiction to fig. C.2.

i ("to go")

Another parasmâipada example from the second class is the Sanskrit word for "to go":

	$\sqrt{i}$ ← ie. **ei*, parasmâipada			
	sg.	dual	pl.	
1	***ê-mi*** (1)	*i-vas* (2)	*i-mas* (2)	present
2	***ê-ṣi*** (1)	*i-thas* (2)	*i-tha* (2)	tense
3	***ê-ti*** (1)	*i-tas* (2)	*y-an-ti* (2)	(prim. end.)
1	***āy-am*** (3)	*âi-va* (4)	*âi-ma* (4)	imperfect
2	***âi-s*** (3)	*âi-tam* (4)	*âi-ta* (4)	(sec. end.)
3	***âi-t*** (3)	*âi-tām* (4)	*āy-an* (5)	with augm.
1	***ay-āni*** (1)	***ay-āva*** (1)	***ay-āma*** (1)	imper-
2	*i-hi* (2, 6)	*i-tam* (2)	*i-ta* (2)	ative
3	***ê-tu*** (1)	*i-tām* (2)	*y-an-tu* (2)	(sec. end.)

1. Strong forms (imperfect see below) regularly differ between vowel ending (*ay-āni*) and consonant ending (*ê-mi*).

2. Weak forms (imperfect see below) regularly show *i* before a consonant (see *i-mas*) in and *y* before a vowel (*y-an-ti*).

3. Imperfect forms seem not to obey the prescribed distribution of weak and strong forms. However, most of them do, in fact: We have the strong forms

   ◇ *āy-am* ← *a-ay-am* before a vowel ending

   ◇ *âi-t* ← *a-êt* before a consonant ending

4. The weak forms before consonant endings are similar to the strong forms, but produced by a different rule:

   âi-ma ← *a-i-ma* is regular by a **MVS** sound law (pp. 30).

5. Not clear. Could a similar rule as the one applied in 4. be responsible for *ā* in *āy-an* ← *a-i-an* before a vowel ending?

6. *i-hi* may be regular from older **i-dhi* (p. 53). From forms like *i-hi* the new ending *hi* spread to other verbs.

duh ("to milk")

We now turn to the oi. root *duh* ("to milk"). The ie. full-grade root is ie. **dheugh*. The distribution of strong and weak forms is regular. Weak forms have the zero grade *u* and strong forms show the full grade *ô* (see pp. 23). Here is the parasmâipada paradigm:

	$\surd$*duh* ← ie. **dheugh*, parasmâipada			
	sg.	dual	pl.	
1	***dôh-mi*** (3)	*duh-vas* (3)	*duh-mas* (3)	present
2	***dhôk-ṣi*** (2a, 6)	*dug-dhas* (1b)	*dug-dha* (1a)	tense
3	***dôg-dhi*** (1a)	*dug-dhas* (1a)	*duh-an-ti* (3, 4a)	(prim. end.)
1	***a-dôh-am*** (3)	*a-duh-va* (3)	*a-duh-ma* (3)	imperfect
2	***a-dhôk*** (5)	*a-dug-dham* (1a)	*a-dug-dha* (1a)	(sec. end.)
3	***a-dhôk*** (5)	*a-dug-dhām* (1a)	*a-duh-an* (3, 4a)	with augm.
1	***dôh-āni*** (3)	***dôh-āva*** (3)	***dôh-āma*** (3)	imper-
2	*dug-dhi* (1c)	*dug-dham* (1a)	*dug-dha* (1a)	ative
3	***dôg-dhu*** (1a)	*dug-dhām* (1a)	*duh-an-tu* (3, 4a)	(sec. end.)

1. Many forms show the application of both deaspiration of initial ie. **dh* and of aspiration shift (Bartholomae's law, pp. 37). In particular, we have three cases:

   a. *gh-t* → *g-dh* (aspiration shift and forward assimilation) is seen in ie. **dheugh-ti* → *dôg-dhi*.

b. *gh-th* → *g-dh* (no double aspiration and forward assimilation) is seen in ie. **dhugh-th* → *dug-th* (for example 2. dual pres. tense *dug-dhas*).

c. *gh-dh* → *g-dh* (no double aspiration and no forward assimilation) is seen in 2. sg. impv. ie. **dhugh-dhi* → *dug-dhi* (and, in ātmanêpada below, *dhug-dhvê*).

dug-dhas is an example of either 1a (3. pers. dual pres. tense) or 1b (2. pers. dual pres. tense).

2. Grassmann's deaspiration is seen in most forms. But it has been undone (or, rather, has not been carried out) in these cases:

a. before *s* as in parasmâipada pres. tense 2. pers. sg. *dhôk-ṣi* where

- ◇ the root-final *gh* lost its aspiration and became voiceless before voiceless *s*,
- ◇ this *s* cannot assume the aspiration (which would otherwise occur by Bartholomae's law), and
- ◇ hence aspiration dissimilation (according to Grassmann) cannot occur.

b. before *dhv* as in ātmanêpada pres. tense 2. pers. pl. *dhug-dhvê* where

- ◇ the root-final *gh* lost its aspiration,
- ◇ *dh* is aspirated already so that not further aspiration was possible,
- ◇ *v* cannot assume this aspiration and *dhv* is not aspirated,
- ◇ hence aspiration dissimilation (according to Grassmann) cannot occur.

3. Before an ie. front vowel, we have secondary palatalization *gh* → *h* as seen in fig. B.2 (p. 36). This is most clearly seen in *a-duh-i*. However, *h* spread to many forms where an ie. front vowel was not present as in *duh-an-ti*. In the above paradigm, we have *h* (as in the oi. root *duh*) in all forms where the endings start with a vowel, a nasal, or a liquid.

4. In both thematic and athematic 3. pers. pl. forms, we have *a*. Note, however:

a. In parasmâipada 3. pers. pl. forms like *duh-an-ti*, we have *an* due to borrowing of *a* from the thematic classes.

b. In contrast, ātmanêpada forms like *duh-a-tê* do without this borrowing and *a* goes back to syllabic *n̥*: *duh-a-tê* ← ie. **dhugh-n̥-toi*.

5. In imperfect sg. forms *a-dhôk*, aspiration shift is not possible and we see expected backward assimilation (similar to 2a.) before ie. *s* or *t* in the 2. pers. and 3. pers., respectively. Both forms show the impossibility of having more than one consonant at the end of a word (section B.3.5, p. 44): In the 2. pers., *s* has been dropped, and in the third, *t*.

6. In *dhôk-ṣi*, after the newly formed *k* (very similar to 5.), **RUKI** applies.

And here you see the ātmanêpada paradigm where the numbers are explained above:

	√*duh* ← ie. **dheugh*, ātmanêpada			
	sg.	dual	pl.	
1	*duh-ê* (3)	*duh-vahê* (3)	*duh-mahê* (3)	present
2	*dhuk-ṣê* (2a, 6)	*duh-āthê* (1b)	*dhug-dhvê* (1c, 2b)	tense
3	*dug-dhê* (1a)	*duh-ātê* (3)	*duh-a-tê* (3, 4b)	(prim. end.)
1	*a-duh-i* (3)	*a-duh-vahi* (3)	*a-duh-mahi* (3)	imperfect
2	*a-dug-dhās* (1b)	*a-duh-āthām* (3)	*a-dhug-dhvam* (1c, 2b)	(sec. end.)
3	*a-dug-dha* (1a)	*a-duh-ātām* (3)	*a-duh-a-ta* (3, 4b)	with augm.
1	***dôh-âi*** (3)	***dôh-āvahâi*** (3)	***dôh-āmahâi*** (3)	imper-
2	*dhuk-ṣva* (2a, 6)	*duh-āthām* (3)	*dhug-dhvam* (1c, 2b)	ative
3	*dug-dhām* (1a)	*duh-ātām* (3)	*duh-a-tām* (3, 4b)	(sec. end.)

lih ("to lick")

A somewhat more complicated (and hence even more interesting) example is *lih* ("to lick"):

	√*lih* ← ie. **leiǵh*, parasmâipada			
	sg.	dual	pl.	
1	***lêh-mi***	*lih-vas*	*lih-mas*	present
2	***lêk-ṣi*** (2)	*lī-ḍhas* (5b)	*lī-ḍha* (5a)	tense
3	***lê-ḍhi*** (1)	*lī-ḍhas* (5a)	*lih-an-ti* (6a)	(prim. end.)
1	***a-lêh-am***	*a-lih-va*	*a-lih-ma*	imperfect
2	***a-lêṭ*** (4)	*a-lī-ḍham* (5a)	*a-lī-ḍha* (5a)	(sec. end.)
3	***a-lêṭ*** (3)	*a-lī-ḍhām* (5a)	*a-lih-an* (6a)	with augm.
1	***lêh-āni***	***lêh-āva***	***lêh-āma***	imper-
2	*lī-ḍhi*	*lī-ḍham* (5a)	*lī-ḍha* (5a)	ative
3	***lê-ḍhu*** (1)	*lī-ḍhām* (5a)	*lih-an-tu* (6a)	(sec. end.)

Notes are given below. The ātmanêpada paradigm reads:

	$\sqrt{}$*lih* ← ie. **leiǵh*, ātmanêpada			
	sg.	dual	pl.	
1	*lih-ê*	*lih-vahê*	*lih-mahê*	present
2	*lik-ṣê* (2)	*lih-āthê*	*lī-ḍhvê* (5c)	tense
3	*lī-ḍhê* (5a)	*lih-ātê*	*lih-a-tê* (6b)	(prim. end.)
1	*a-lih-i*	*a-lih-vahi*	*a-lih-mahi*	imperfect
2	*a-lī-ḍhās* (5b)	*a-lih-āthām*	*a-lī-ḍhvam* (5c)	(sec. end.)
3	*a-lī-ḍha* (5a)	*a-lih-ātām*	*a-lih-a-ta* (6b)	with augm.
1	***lêh-âi***	***lêh-āvahâi***	***lêh-āmahâi***	imper-
2	*lik-ṣva* (2)	*lih-āthām*	*lī-ḍhvam* (5c)	ative
3	*lī-ḍhām*	*lih-ātām*	*lih-a-tām* (6b)	(sec. end.)

1. The parasmâipada 3. pers. sg. present tense can be explained by

   ie. **leiǵh-ti* (full grade)
   → *lêǵ-dhi* (**ASh**)
   → *lêz-dhi* (***sz*** before voiced stop)
   → *lêẓ-dhi* (**RUKI**)
   → *lêẓ-ḍhi* (**Cer*D***)
   → *lê-ḍhi* (**CpL*z***, but *ê* already long)

2. The parasmâipada 2. pers. sg. present tense is *lêk-ṣi* which has developed regularly:

   ie. **leiǵh-si* (full grade)
   → *lêǵ-si* (**ASh**, but *s* cannot be aspirated)
   → *lêk-si* (**BA**)
   → *lêk-ṣi* (**RUKI**)

3. Parasmâipada imperfect sg. has *a-lêṭ* in both the 2. and 3. pers.. For the 3. pers., we have

   ie. **e-leiǵh-t* (f.g. with ie. impf. marker *e*)
   → *a-lêǵ-dh* (**ASh**)
   → *a-lêz-dh* (***sz*** before voiced stop)
   → *a-lêẓ-dh* (**RUKI**)
   → *a-lêẓ-ḍh* (**Cer*D***)
   → *a-lê-ḍh* (**CpL*z***, but *ê* already long)
   → *a-lê-ṭ* (**AFP**, p. 45)

4. Remember *madhu-liṭ* ← ie. **medhu-liǵh-s* on p. 45. The 2. pers. is also regular:

ie. **a-leiǵh-s*
→ *a-lêǵ-s* (**ASh**, but *s* cannot be aspirated)
→ *a-lêk-s* (**BA**)
→ *a-lêk-ṣ* (**RUKI**)
→ *a-lêṭ* (**AFP**)

5. Quite a few regular (!) forms have long *ī* plus cerebralization of a dental ending. We have three cases:

a. *iǵh-t* → *ī-ḍh* as, for example, the ātmanêpada 3. pers. sg. present tense *lī-ḍhê*:

ie. **liǵh-toi* (z.g. with *toi*-marker)
→ *liǵh-tê*
→ *liǵ-dhê* (**ASh**)
→ *liz-dhê* (***sz*** before voiced stop)
→ *liẓ-dhê* (**RUKI**)
→ *liẓ-ḍhê* (**Cer*D***)
→ *lī-ḍhê* (**CpL*z***)

b. *iǵh-th* → *ī-ḍh* as, for example parasmâipada 2. pers. dual *lī-ḍhas*:

**liǵh-thas* (z.g. with oi. (!) *thas*-marker)
→ *liǵ-dhas* (**ASh**, but no further aspiration)
→ *liz-dhas* (***sz*** before voiced stop)
→ *liẓ-dhas* (**RUKI**)
→ *liẓ-ḍhas* (**Cer*D***)
→ *lī-ḍhas* (**CpL*z***)

c. *iǵh-dhv* → *ī-ḍhv* as, for example ātmanêpada 2. pers. dual *lī-ḍhvê*:

**liǵh-dhvê* (z.g. with oi. (!) *dhvê*-marker)
→ *liǵ-dhvê* (**ASh**, but no further aspiration)
→ *liz-dhvê* (***sz*** before voiced stop)
→ *liẓ-dhvê* (**RUKI**)
→ *liẓ-ḍhvê* (**Cer*D***)
→ *lī-ḍhvê* (**CpL*z***)

2. and 3. dual pres. tense are identical: *lī-ḍhas* (b) with oi. ending *thas* and *lī-ḍhas* (a) with oi. ending *tas*.

6. In both thematic and athematic 3. pers. pl. forms, we have *a*. Note, however:

a. In parasmâipada 3. pers. pl. forms like *lih-an-ti*, we have *an* due to borrowing of *a* from the thematic classes.

b. In contrast, ātmanêpada forms like *lih-a-tê* do without this borrowing and *a* goes back to syllabic *n̥*: *lih-a-tê* ← ie. **liǵh-n̥-toi*.

vaś ("to wish")

Now, let us turn to *vaś* ("to wish"):

	$\surd$*vaś* ← ie. **veḱ*, parasmâipada			
	sg.	dual	pl.	
1	***vaś-mi***	*uś-vas*	*uś-mas*	present
2	***vak-ṣi*** (3)	*uṣ-ṭhas* (2)	*uṣ-ṭha* (2)	tense
3	***vaṣ-ṭi*** (1)	*uṣ-ṭas* (2)	*uś-an-ti* (7)	(prim. end.)
1	***a-vaś-am***	*âuś-va* (6)	*âuś-ma* (6)	imperfect
2	***a-vaṭ*** (5)	*âuṣ-ṭam* (2, 6)	*âuṣ-ṭa* (2, 6)	(sec. end.)
3	***a-vaṭ*** (4)	*âuṣ-ṭām* (2, 6)	*âuś-an* (6, 7)	with augm.
1	***vaś-āni***	***vaś-āva***	***vaś-āma***	imper-
2	*uḍ-ḍhi* (8)	*uṣ-ṭam* (2)	*uṣ-ṭa* (2)	ative
3	***vaṣ-ṭu*** (1)	*uṣ-ṭām* (2)	*uś-an-tu* (7)	(sec. end.)

1. *vaṣ-ṭi* and *vaṣ-ṭu* follow **Cer*D***.

2. Similarly, but in zero grade, we have forms like *uṣ-ṭhas* (present tense 2. pers. dual).

3. **SIB**

4. Parasmâipada imperfect sg. has *a-vaṭ* in both the 2. and 3. pers.. For the 3. pers., we have

   ie. **e-veḱ-t* (f.g. with ie. impf. marker *e*)
   → *a-vaś-t*
   → *a-vaṣ-ṭ* (as in *vaṣ-ṭi*)
   → *a-vaṭ* (**AFP**)

5. The 2. pers. is also regular:

   ie. **e-veḱ-s* (f.g. with ie. impf. marker *e*)
   → *a-vaś-s*
   → *a-vaś*
   → *a-vaṭ* (**AFP**)

6. Luckily, the other imperfect forms present no great mystery. They are weak (zero grade) and then, in line with the sound law

   imperfect marker *a* + *u*/*ū* → *âu*

   we obtain

   a) forms like *âuś-va* with *ś* from ie. *ḱ* and

b) forms like *âuṣ-ṭam* where the cerebralization rule **Cer*D*** has been applied again.

7. 3. pers. pl. forms show *an-*, the thematic *a* is borrowed from thematic classes.

8. *uḍ-ḍhi*, the imperative 2. pers. sg. is difficult, but explainable:

ie. **uḱ-dhi* (z.g. with impv. ending *dhi*)
→ *uǵ-dhi* (**BA**)
→ *uz-dhi* (***sz***)
→ *uẓ-dhi* (**RUKI**)
→ *uẓ-ḍhi* (**Cer*D***)
→ *ū-ḍhi* (**CpL*z***)
→ *uḍ-ḍhi* (**LawOfMorae**)

han ("to hit, to kill")

As another example, we present *han* ("to hit, to kill"):

	$\surd$*han* ← ie. **g*^{w}*hen*, parasmâipada			
	sg.	dual	pl.	
1	***han-mi*** (1)	***han-vas*** (2)	***han-mas*** (2)	present
2	***haṃ-ṣi*** (1)	*ha-thas* (4)	*ha-tha* (4)	tense
3	***han-ti*** (1)	*ha-tas* (4)	*ghn-an-ti* (3)	(prim. end.)
1	***a-han-am*** (1)	***a-han-va*** (2)	***a-han-ma*** (2)	imperfect
2	***a-han*** (5)	*a-ha-tam* (4)	*a-ha-ta* (4)	(sec. end.)
3	***a-han*** (5)	*a-ha-tām* (4)	*a-ghn-an* (3)	with augm.
1	***han-āni*** (1)	***han-āva***	***han-āma***	imper-
2	*ja-hi* (6)	*ha-tam* (1)	*ha-ta* (4)	ative
3	***han-tu*** (1)	*ha-tām* (1)	*ghn-an-tu* (3)	(sec. end.)

1. Secondary palatalization (section B.3.2, pp. 35) produces *han-ti* from *g*^{w}*hen-ti*.

2. The strong forms also migrated to present tense and imperfect both dual and pl. where they should not be seen according to p. 146.

3. In contrast, the correct zero grade is seen in the 3. pers. pl. forms like *ghn-an-ti* , after borrowing of thematic *a*. Here, secondary palatalization does not work (*g*^{w}*h* does not stand before a front vowel).

4. If the zero-grade stem came in immediate contact with a *t*-ending (for the other endings, see 2.), the *n* had to become syllabic. Then, we should have expected n.at. *gha-tas* (present tense, 3. pers. dual) and the like. However, we see *ha-tas*, undoubtedly due to leveling. This is similar to the (zero grade!) PPP *ha-ta* in subsection C.4.3 (p. 111).

5. Identical parasmâipada imperfect 2. and 3. pers. sg. are common in athematic verbs. Due to inadmissable word-final consonant clusters (**CCl**), the endings *s* (2. pers.) and *t* (3. pers.) are lost:
   - ◇ *a-han* ← *a-han-s*
   - ◇ *a-han* ← *a-han-t*

6. *ja-hi* (with ending *hi* rather than *dhi*) shows secondary palatalization. Perhaps, the *i* from the ending make the syllabic nasal also a front vowel? In any case, we seem to have got

   $^{*}g^{w}h\underset{\circ}{n}$*-hi* (z.g. with oi. impv. marker *hi*)
   → g^{w}*a-hi* (**DA**)
   → *ja-hi* (difficult **SPal**)

brū **("to speak")**

For *brū* ("to speak"), the ie. root is *breuH* whence obtain

- ◇ the strong forms with *brav* (**DIPH**)
- ◇ the weak forms (***V*** + ***hV***)
  - before vowel endings *bruv* according to the rules on pp. 20
  - before consonant endings *brū-*

With these comments in mind, the declension pattern is not too surprising:

	$\sqrt{}$*brū* ← ie. **breuH*					
	parasmâipada			ātmanêpada		
	sg.	dual	pl.	sg.	dual	pl.
1	***brav-ī-mi*** (1)	*brū-vas*	*brū-mas*	*bruv-ê*	*brū-vahê*	*brū-mahê*
2	***brav-ī-ṣi*** (1)	*brū-thas*	*brū-tha*	*brū-sê*	*bruv-āthê*	*brū-dhvê*
3	***brav-ī-ti*** (1)	*brū-tas*	*bruv-an-ti* (3)	*brū-tê* (1)	*bruv-ātê*	*bruv-a-tê* (3)
1	***a-brav-am***	*a-brū-va*	*a-brū-ma*	*a-bruv-i*	*a-brū-vahi*	*a-brū-mahi*
2	***a-brav-īs*** (2)	*a-brū-tam*	*a-brū-ta*	*a-brū-thās*	*a-bruv-āthām*	*a-brū-dhvam*
3	***a-brav-īt*** (2)	*a-brū-tām*	*a-bruv-an* (3)	*a-brū-ta*	*a-bruv-ātām*	*a-bruv-a-ta* (3)
1	***brav-āni***	***brav-āva***	***brav-āma***	***brav-âi***	***brav-ā-vahâi***	***brav-ā-mahâi***
2	*brū-hi*	*brū-tam*	*brū-ta*	*brū-ṣva*	*bruv-āthām*	*brū-dhvam*
3	***brav-ī-tu*** (1)	*brū-tām*	*bruv-an-tu* (3)	*brū-tām*	*bruv-ātām*	*bruv-a-tām*

1. The long *ī* in present sg. like *brav-ī-ti* is surely connected to the laryngeal. However, we should have expected short *i* instead.

2. Imperfect sg. *a-brav-īs* and *a-brav-īt* are somewhat mysterious. We should expect n.at. *a-brô-s* and n.at. *a-brô-t*. These forms may have been too alien compared with the rest of the paradigm. Also, we see long *ī* in the sg. Perhaps, these are aorist forms as in *ās-īt* from *as* ("to be", see pp. 154).

3. Par. *bruv-an-ti* versus ātm. *bruv-a-tê* is well-known by now.

śās ("to rule, to instruct")

śās is the oi. root in full grade. By **Lar_*V***, ie. **ḱeHs* leads to

◇ the strong forms with *śās*

◇ the weak forms *śis* and, after applying **RUKI**, finally *śiṣ*.

We find

	$\surd$*śās* ← ie. **ḱeHs*, parasmâipada			
	sg.	dual	pl.	
1	***śās-mi***	*śiṣ-vas* (1)	*śiṣ-mas* (1)	present
2	***śās-si***	*śiṣ-ṭhas* (2)	*śiṣ-ṭha* (2)	tense
3	***śās-ti***	*śiṣ-ṭas* (2)	***śās-a-ti*** (6)	(prim. end.)
1	***a-śās-am***	*a-śiṣ-va* (1)	*a-śiṣ-ma* (1)	imperfect
2	***a-śās/a-śāt*** (3)	*a-śiṣ-ṭam* (2)	*a-śiṣ-ṭa* (2)	(sec. end.)
3	***a-śāt*** (3)	*a-śiṣ-ṭām* (2)	***a-śās-us*** (4)	with augm.
1	***śās-āni***	***śās-āva***	***śās-āma***	imper-
2	***śā-dhi*** (5)	*śiṣ-ṭam* (2)	*śiṣ-ṭa* (2)	ative
3	***śās-tu***	*śiṣ-ṭām* (2)	***śās-a-tu*** (6)	(sec. end.)

1. **RUKI**

2. By forward assimilation **Cer*D***, one obtains *śiṣ-ṭas* and the like.

3. In the imperfect, **CCl** should produce

   ◇ 2. pers. sg. *a-śās* ← *a-śās-s*

   ◇ 3. pers. sg. *a-śās* ← *a-śās-t*

   The forms *a-śāt* for both 2. and 3. pers. sg. is probably formed by analogy, presumably with *a-vêt* from *vid* ("to know") which is regular. Note that teaching leads to knowing so that the analogy was also helped by close association.

4. Impf. 3. pers. pl. *a-śās-us* is special in using the more rare ending *us* instead of *(a)n*.

5. Irregularly, impv. 2. pers. sg. *śādhi* is strong: :

ie. **ḱeHs-dhi* (full grade with ie. impv. marker *dhi*)
→ *śās-dhi*
→ *śāz-dhi* (***sz*** before voiced stop)
→ *śā-dhi* (**CpL*z***, but *ā* long already)

6. Quite unusual for the 2. class, we do **not** have the thematic *a* in parasmâipada 3. pers. pl. forms. Also the 3. pers. pl. forms are strong.

Narten verbs

The so-called Narten presents exhibit the lengthened grade rather than the full grade in some forrms:

	$\surd$*nu* ← ie. **vek*^{w}, parasmâipada			
	sg.	dual	pl.	
1	***nâu-mi*** (1)	*nu-vas* (3)	*nu-mas* (3)	present
2	***nâu-ṣi*** (1)	*nu-thas*	*nu-tha*	tense
3	***nâu-ti*** (1)	*nu-tas*	*nuv-an-ti* (4)	(prim. end.)
1	***a-nav-am*** (2)	*a-nu-va* (3)	*a-nu-ma* (3)	imperfect
2	***a-nâu-s*** (1)	*a-nu-tam*	*a-nu-ta*	(sec. end.)
3	***a-nâu-t*** (1)	*a-nu-tām*	*a-nuv-an* (4)	with augm.
1	***nav-āni*** (2)	***nav-āva*** (2)	***nav-āma*** (2)	imper-
2	*nu-hi*	*nu-tam*	*nu-ta*	ative
3	***nâu-tu*** (1)	*nu-tām*	*nuv-an-tu* (4)	(sec. end.)

1. The very strong forms *âu* (lengthened grade) is visible in present tense sg. and also in some forms imperfect and imperative forms.

2. The other strong forms exhibit expected full grade *av*.

3. The weak forms in *nu* like *nu-mas* are perfectly regular.

4. Forms like *nuv-a-n-ti* exhibit the intervening *v* according to the rule

				example
V*+*hV	*CRyV*	→	*CRiyV*	*mr-iy-a-tê*
	CRuV	→	*CRuvV*	*āp-nuv-an-ti*

Additional comments on a few other verbs

We now briefly comment on a two verbs a sêṭ-root. The *i* acts as a sort of thematic vowel in case of consonant endings. Compare

◇ *svap-i-ti* (“he sleeps”) with *svap-a-n-ti* (“they sleep”) with strong forms throughout the paradigm

◇ *rôdi-ti* (“he weeps”), *rud-a-n-ti* (“they weep”) with regular distribution of strong and weak forms

C.6.4. The third class

Introductory remark and overview

Third-class verbs are characterized by reduplication. Here, typically, the initial consonant plus *i* is placed before the full-grade root (strong forms) or the zero-grade root (weak forms). Two exceptions:

◇ *u*-roots (such as *hu* (“to sacrifice”)) always reduplicate with *u*.

◇ Roots ending in *ā* use ie. *e* (oi. *a*) as the reduplication vowel. This concerns *dā* (“to give”), *dhā* (“to set, to put”), and *hā* (“to abandon”).

We have close looks at

◇ *bhṛ* (“to support, to hold”) on pp. 165

◇ *bhī* (“to be afraid”) on pp. 167

◇ *hu* (“to sacrifice”) on pp. 169

◇ *hā* (“to abandon”) on pp. 170

◇ *dā* (“to give”) on pp. 170

◇ *dhā* (“to set”) on pp. 172

bhṛ (“to support, to hold”)

We begin with *bhṛ* (“to support”). The strong froms are *bi-bhar* and the weak ones *bi-bhṛ*. We obtain the quite regular pattern:

	√*bhṛ* ← ie. **bher*, parasmâipada			
	sg.	dual	pl.	
1	***bi-bhar-mi***	*bi-bhṛ-vas*	*bi-bhṛ-mas*	present
2	***bi-bhar-ṣi***	*bi-bhṛ-thas*	*bi-bhṛ-tha*	tense
3	***bi-bhar-ti***	*bi-bhṛ-tas*	*bi-bhr-a-ti* (2)	(prim. end.)
1	***a-bi-bhar-am***	*a-bi-bhṛ-va*	*a-bi-bhṛ-ma*	imperfect
2	***a-bi-bhar*** (3)	*a-bi-bhṛ-tam*	*a-bi-bhṛ-ta*	(sec. end.)
3	***a-bi-bhar*** (3)	*a-bi-bhṛ-tām*	***a-bi-bhar-us*** (1)	with augm.
1	***bi-bhar-āni***	***bi-bhar-āva***	***bi-bhar-āma***	imper-
2	*bi-bhṛ-hi*	*bi-bhṛ-tam*	*bi-bhṛ-ta*	ative
3	***bi-bhar-tu***	*bi-bhṛ-tām*	*bi-bhr-a-tu* (2)	(sec. end.)

1. As is usual in the third class, the parasmâipada 3. pers. pl. imperfect *a-bi-bhar-us* is characterized by two features:

   a) Its form is strong.

   b) Its ending is *us* rather than the more usual (among all classes) *(a)n*. The ending *us*, by the way, is common in the reduplicative perfect.

2. In contrast to all the other classes, there is no borrowing of thematic vowel *a* in the 3. pers. pl. PRII in the third class. Of course, the consonant clusters *bh-r-n-t* are way too long to survive without vowels. Both *r* and *n* might become syllabic. By the rule

   SY_Conf Make the last syllabifiable sound syllabic!

   we obtain

   $$bi\text{-}bhr\text{-}\underset{\circ}{n}\text{-}ti \quad \rightarrow \quad bi\text{-}bhr\text{-}a\text{-}ti$$

3. By simplification of consonant clusters (**CCl**), the imperfect forms are regular:

   a) 2. pers. sg. *a-bi-bhar* ← *a-bi-bhar-s*

   b) 3. pers. sg. *a-bi-bhar* ← *a-bi-bhar-t*

Apart from imperative 1. pers., the ātmanêpada forms are all weak:

	$\sqrt{}$*bhṛ* ← ie. **bher*, ātmanêpada			
	sg.	dual	pl.	
1	*bi-bhr-ê* (2)	*bi-bhṛ-vahê* (1)	*bi-bhṛ-mahê* (1)	present
2	*bi-bhṛ-ṣê* (1, 4)	*bi-bhr-āthê* (2)	*bi-bhṛ-dhvê* (1)	tense
3	*bi-bhṛ-tê* (1)	*bi-bhr-ātê* (2)	*bi-bhr-a-tê* (2, 3)	(prim. end.)
1	*a-bi-bhr-i* (2)	*a-bi-bhṛ-vahi* (1)	*a-bi-bhṛ-mahi* (1)	imperfect
2	*a-bi-bhṛ-thās* (1)	*a-bi-bhr-āthām* (2)	*a-bi-bhṛ-dhvam* (1)	(sec. end.)
3	*a-bi-bhṛ-ta* (1)	*a-bi-bhr-ātām* (2)	*a-bi-bhr-a-ta* (2, 3)	with augm.
1	***bi-bhar-âi***	***bi-bhar-ā-vahâi***	***bi-bhar-ā-mahâi***	imper-
2	*bi-bhṛ-ṣva* (1, 4)	*bi-bhr-āthām* (2)	*bi-bhṛ-dhvam* (1)	ative
3	*bi-bhṛ-tām* (1)	*bi-bhr-ātām* (2)	*bi-bhr-a-tām* (2, 3)	(sec. end.)

1. We have syllabic *ṛ* in the weak forms before consonant endings, for example *bi-bhṛ-tê*.

2. We have just *r* in the weak forms before vowel endings, for example *bi-bhr-ê*.

3. Compare 3. pers. pl. forms of ātmanêpada (here) with parasmâipada (above).

4. **RUKI**.

bhī ("to be afraid")

If one knows how to deal with *bhṛ, bi-bhar-ti* ("to supoport"), it is not difficult to learn the forms for *bhī*, *bi-bhê-ti* ("to be afraid"). The ie. root is *bheiH*. Do you see that the full grade and the zero grade of both roots are formed regularly:

	$\sqrt{}$*bhṛ* ← ie. **bher*	$\sqrt{}$*bhī* ← ie. **bheiH*
full grade	***bhar***	***bhê/bhay*** before *C/V*
zero grade	*bhṛ/bhr* before *C/V*	*bhī/bhy* before *C/V*

This, then, is the parasmâipada paradigm:

	$\sqrt{bh\bar{\imath}} \leftarrow$ ie. *$bheiH$, parasmâipada			
	sg.	dual	pl.	
1	***bi-bhê-mi***	*bi-bhī-vas* (4)	*bi-bhī-mas* (4)	pres.
2	***bi-bhê-ṣi*** (2)	*bi-bhī-thas* (4)	*bi-bhī-tha* (4)	tense
3	***bi-bhê-ti*** (1)	*bi-bhī-tas* (4)	*bi-bhy-a-ti* (5)	
1	***a-bi-bhay-am*** (3)	*a-bi-bhī-va* (4)	*a-bi-bhī-ma* (4)	impf.
2	***a-bi-bhê-s*** (2, 7)	*a-bi-bhī-tam* (4)	*a-bi-bhī-ta* (4)	(sec.
3	***a-bi-bhê-t*** (7)	*a-bi-bhī-tām* (4)	***a-bi-bhay-us*** (6)	end.)
1	***bi-bhay-āni*** (3)	***bi-bhay-āva*** (3)	***bi-bhay-āma*** (3)	impv.
2	*bi-bhī-hi* (4)	*bi-bhī-tam* (4)	*bi-bhī-ta* (4)	(sec.
3	***bi-bhê-tu*** (1)	*bi-bhī-ām* (4)	*bi-bhy-a-tu* (5)	end.)

1. *bi-bhê-ti* is the expected full-grade form before a consonant (**DIPH**).

2. *bi-bhê-ṣi* shows the regular application of **RUKI**, while *a-bi-bhê-s* does not admit **RUKI** because the *s* is word-final.

3. Before a vowel, **DIPH** produces forms like *a-bi-bhay-a-m* with *ay* rather than *ê*.

4. All weak forms exhibit the sound law $\bar{\imath} \leftarrow iH$. However, all these forms admit an irregular alternative with a short *i*, for example *bi-bhi-vas*.

5. *bi-bhy-a-ti* is 3. pers. pl. (!). Indeed, we have

   ie. *$bhi\text{-}bhiH\text{-}\underset{\circ}{n}\text{-}ti$* (reduplication, zero grade)
   → *$bi\text{-}bh\bar{\imath}\text{-}\underset{\circ}{n}\text{-}ti$* (**DA**, **Lar_*V***)
   → *bi-bhy-a-ti* (**SY_Conf**)

6. Again, parasmâipada 3. pers. pl. imperfect

   a) uses the strong form in violation of fig. C.2 and

   b) exhibits the ending *us*.

7. In spite of all the similarities between *bhī* and *bhṛ*, the imperfect sg. 2. and 3. persons differ:

	imperative singular	
	2. pers.	3. pers.
$\sqrt{bhṛ} \leftarrow$ ie. *$bher$*	*a-bi-bhar*	*a-bi-bhar*
$\sqrt{bh\bar{\imath}} \leftarrow$ ie. *$bheiH$*	*a-bi-bhê-s*	*a-bi-bhê-t*

All four forms are regular!

hu ("to sacrifice")

The paradigm for the oi. root *hu* ("to sacrifice") looks bewildering. The ie. root is $^*ǵheu$ and we obtain the 3. pers. sg. pres. tense

ie. $^*ǵhu$-$ǵheu$-*ti* (reduplication, full grade)
→ *ǵu*-*ǵhô*-*ti* (**DA**, **DIPH**)
→ *ju*-*hô*-*ti* (**PPal**, pp. 35)

We now present the paradigm:

	$\sqrt{}$*hu* ← ie. $^*ǵ^h eu$, parasmâipada			
	sg.	dual	pl.	
1	***ju*-*hô*-*mi***	*ju*-*hu*-*vas* (4)	*ju*-*hu*-*mas* (4)	present
2	***ju*-*hô*-*ṣi*** (2)	*ju*-*hu*-*thas* (4)	*ju*-*hu*-*tha* (4)	tense
3	***ju*-*hô*-*ti*** (1)	*ju*-*hu*-*tas* (4)	*ju*-*hv*-*a*-*ti* (5)	(prim. end.)
1	***a*-*ju*-*hav*-*am*** (3)	*a*-*ju*-*hu*-*va* (4)	*a*-*ju*-*hu*-*ma* (4)	imperfect
2	***a*-*ju*-*hô*-*s*** (2)	*a*-*ju*-*hu*-*tam* (4)	*a*-*ju*-*hu*-*ta* (4)	(sec. end.)
3	***a*-*ju*-*hô*-*t*** (2)	*a*-*ju*-*hu*-*tām* (4)	***a*-*ju*-*hav*-*us*** (6)	with augm.
1	***ju*-*hav*-*āni*** (3)	***ju*-*hav*-*āva*** (3)	***ju*-*hav*-*āma*** (3)	imper-
2	*ju*-*hu*-*dhi* (4)	*ju*-*hu*-*tam* (4)	*ju*-*hu*-*ta* (4)	ative
3	***ju*-*hô*-*tu*** (1)	*ju*-*hu*-*tām* (4)	*ju*-*hv*-*a*-*tu* (5)	(sec. end.)

Contrasting *bhī* ("to be afraid") and *hu* ("sacrifice"), we find:

1. The present tense 3. pers. sg. *bi*-*bhê*-*ti* and *ju*-*hô*-*ti* are both full-grade forms.

2. The present tense 2. pers. sg. *bi*-*bhê*-*ṣi* and *ju*-*hô*-*ṣi* show **RUKI**, while their imperfect counterparts *a*-*bi*-*bhê*-*s* and *a*-*ju*-*hô*-*s* do not (at the end of words).

3. For vowel endings, the imperfect 1. pers. sg. *a*-*bi*-*bhay*-*a*-*m* and *a*-*ju*-*hav*-*a*-*m* have *ay* and *av* rather than *ê* or *ô*, respsectively.

4. The present tense 1. pers. pl. *bi*-*bhī*-*vas* and *ju*-*hu*-*vas* use the zero grade (with laryngeal explanation of long *ī*).

5. The present tense 3. pers. pl. *bi*-*bhy*-*a*-*ti* corresponds very nicely to *ju*-*hv*-*a*-*ti*, both showing the sound law $\underset{\circ}{n} \to a$ and the sandhi rule ***hV*** given on p. 20.

6. The imperfect 3. pers. pl. *a*-*bi*-*bhay*-*us* is full grade as is *a*-*ju*-*hav*-*us* (peculiarity of the 3. class).

7. The only real difference is imperative 2. pers. sg. *ju*-*hu*-*dhi* in contrast to *bi*-*bhī*-*hi*.

hā ("to abandon")

The paradigm for the oi. root *hā* ("to abandon") from ie. root $*ǵ^{h}eH$ works similar to the one for *hu* ("to sacrifice"). This is how to derive the 3. pers. sg. pres. tense of *hā*:

ie. **ǵhe-ǵheH-ti* (reduplication with ie. *e*, zero grade)
→ *ǵe-ǵhāH-ti* (**DA**)
→ *ja-hā-ti* (**PPal**)

We now present the paradigm:

	$\sqrt{hā}$ ← ie. $*ǵ^{h}eH$, parasmâipada			
	sg.	dual	pl.	
1	***ja-hā-mi***	*ja-hi-vas* (2)	*ja-hi-mas* (2)	present
2	***ja-hā-si***	*ja-hi-thas* (2)	*ja-hi-tha* (2)	tense
3	***ja-hā-ti*** (1)	*ja-hi-tas* (2)	*ja-h-a-ti* (4)	(prim. end.)
1	***a-ja-hā-m***	*a-ja-hi-va* (2)	*a-ja-hi-ma* (2)	imperfect
2	***a-ja-hā-s***	*a-ja-hi-tam* (2)	*a-ja-hi-ta* (2)	(sec. end.)
3	***a-ja-hā-t***	*a-ja-hi-tām* (2)	*a-ja-h-us* (5)	with augm.
1	***ja-hā-ni***	***ja-hā-va***	***ja-hā-ma***	imper-
2	*ja-hi-hi* (3)	*ja-hi-tam* (2)	*ja-hi-ta* (2)	ative
3	***ja-hā-tu*** (1)	*ja-hi-tām* (2)	*ja-h-a-tu* (4)	(sec. end.)

1. The present tense 3. pers. sg. *ja-hā-ti* is explained above the table.

2. *ja-hi-mas* is regular where the laryngeal is represented by *i* (**Lar_V**). Again difficult are alternative forms with long *ī* like *ja-hī-mas*.

3. The 2. pers. sg. imperative uses the *hi*-marker.

4. The present tense 3. pers. pl. *ja-h-a-ti* is yet another example of the sound law $\underset{\circ}{n}$ → *a*. The laryngeal would regularly drop after a consonant and before a vowel.

5. Similarly, the laryngeal drops in the imperfect 3. pers. pl. *a-ja-h-us*. Note the zero grade in contrast to the full grade *a-ju-hav-us* in the *hu* paradigm.

dā ("to give")

Let us now turn to *dā* ("to give"):

	$\sqrt{d\bar{a}}$ ← ie. $^*deh_3$, parasmâipada			
	sg.	dual	pl.	
1	***da-dā-mi***	*da-d-vas* (2)	*da-d-mas* (2)	present
2	***da-dā-si***	*da-t-thas* (2, 6)	*da-t-tha* (2, 6)	tense
3	***da-dā-ti*** (1)	*da-t-tas* (2, 6)	*da-d-a-ti* (4)	(prim. end.)
1	***a-da-dā-m***	*a-da-d-va* (2)	*a-da-d-ma* (2)	imperfect
2	***a-da-dā-s***	*a-da-t-tam* (2, 6)	*a-da-t-ta* (2, 6)	(sec. end.)
3	***a-da-dā-t*** (1)	*a-da-t-tām* (2, 6)	*a-da-d-us* (5)	with augm.
1	***da-dā-ni***	***da-dā-va***	***da-dā-ma***	imper-
2	*dê-hi* (3)	*da-t-tam* (2, 6)	*da-t-ta* (2, 6)	ative
3	***da-dā-tu*** (1)	*da-t-tām* (2, 6)	*da-d-a-tu* (4)	(sec. end.)

1. The long $\bar{a}$ go back to a laryngeal. The ie. full-grade root is $deh_3 \to d\bar{a}$. The reduplication vowel is oi. *a* so that we find *da-dā-ti* etc.

2. Between consonants, laryngeals mostly turn into *i*, but are lost without trace occasionally (**Lar_V**). Here, the second alternative holds, as in many weak forms, for example in present tense 1. pers. pl. *da-d-mas* ← *de-dh$_3$-mes*. Alternatively, one may assume that *da-d-mas* was formed by the analogy with other verbs like

   ◇ *tan-mas* from *tan, tan-ô-ti* ("he stretches") (8. class)

   ◇ *sun-mas* from *su*, *su-nô-ti* ("he presses") (5. class)

   Indeed, the speakers may have thought in terms of a root *dad*. Then, 1. pers. sg. *dad-ā-mi* could be regular as a thematic verb. Compare p. 117 for the PPP *datta*.

3. Parasmâipada imperative 2. pers. sg. *dê-hi* is difficult, but quite regular:

   ie. $^*de\text{-}dh_3\text{-}dhi$
   → *da-d-dhi* (**Lar_V**, no *i*)
   → *da-dzdhi* (**DzD**)
   → *da-zdhi* (**CCl**)
   → *daz-dhi*
   → *dê-dhi* (**CpLz** before consonant + *i*)
   → *dê-hi* (analogy)

4. *da-d-a-ti* reflects the sound law $\underset{\circ}{n} \to a$. If speakers assumed a full-grade root *dad*, the 3. pers. pl. pres. tense *dad-a-ti* (!) is formed similar to the 2. class *śās-a-ti* (compare p. 164).

5. The imperfect 3. pers. pl. often uses the full grade with ending *us* in the 3. class (see *a-bi-bhay-us* from *bhī* or *a-bi-bhar-us* from *bhṛ*). However, *a-da-d-us* is clearly zero grade.

6. In the weak forms, one sees the expected backward assimilation.

dhā ("to set")

And, now, the similar root *dhā*:

	$\surd dhā$ ← ie. $*deh_1$, parasmâipada			
	sg.	dual	pl.	
1	***da-dhā-mi***	*da-dh-vas* (2)	*da-dh-mas* (2)	present
2	***da-dhā-si***	*dha-t-thas* (2, 6)	*dha-t-tha* (2, 6)	tense
3	***da-dhā-ti*** (1)	*dha-t-tas* (2, 6)	*da-dh-a-ti* (4)	(prim. end.)
1	***a-da-dhā-m***	*a-da-dh-va* (2)	*a-da-dh-ma* (2)	imperfect
2	***a-da-dhā-s***	*a-dha-t-tam* (2, 6)	*a-dha-t-ta* (2, 6)	(sec. end.)
3	***a-da-dhā-t*** (1)	*a-dha-t-tām* (2, 6)	*a-da-dh-us* (5)	with augm.
1	***da-dhā-ni***	***da-dhā-va***	***da-dhā-ma***	imper-
2	*dhê-hi* (3)	*dha-t-tam* (2, 6)	*dha-t-ta* (2, 6)	ative
3	***da-dhā-tu*** (1)	*dha-t-tām* (2, 6)	*da-dh-a-tu* (4)	(sec. end.)

1. *dhā* is full grade from ie. $*dheh_1$. The reduplication vowel is oi. *a*. By deaspiration, we obtain *da-dhā-ti* etc.

2. It seems that the laryngeal is lost without trace in *da-dh-mas* ("we set") here as in *da-d-mas* ("we give") above.

3. Parasmâipada imperative 2. pers. sg. *dhê-hi* may be regular:

   ie. $*dhe\text{-}dh_3\text{-}dhi$
   → *dha-dh-dhi* (**Lar_*V***: loss of laryngeal, no **DA** in the closed syllable *dha-dh*)
   → *dha-d-dhi* (**ASh**, but *dh* cannot be aspirated any further)
   → *dha-dzdhi* (**D*z*D**)
   → *dha-zdhi* (**CCl**)
   → *dhaz-dhi*
   → *dhê-dhi* (**CpL*z*** before consonant + *i*)
   → *dhê-hi* (analogy)

   Alternatively, analogy with *dê-hi* may be relevant:

dā	with imperative:	*dê-hi*
just as		
dhā	with imperative:	*dhê-hi*

4. *da-dh-a-ti* is due to the sound law $\underset{\circ}{n} \rightarrow a$, just as *da-d-a-ti*.

5. *a-da-dh-us* is parallel to *a-da-d-us*.

6. Compare *da-t-tas* ("the two give") with *dha-t-tas* ("the two set"). After the laryngeal dropped, deaspiration could not work in the closed syllable *dha-d*. Grassmann's law states: If aspirated consonants occur in the beginning of two subsequent syllables, the first aspirated consonant loses its aspiration. The second problem is the non-application of **ASh**. If both **DA** and **ASh** would have done their work, we should expect **da-dhh$_1$-t-* $\rightarrow$ **da-d-dh-* instead of observed *dha-t-t-*.

C.6.5. The fifth class

Introductory remark and overview

In subsection C.2.5 (pp. 87), we have explained how the nasal classes 5, 8, and 9 can be considered special subcases of the seventh class. There, we have also printed the class signs for strong and weak forms:

class	strong gaṇa sign	3. pers. sg.	weak gaṇa sign	3. pers. pl.
5	*nô*	*śr-ṇô-ti*	*nu*	*śr-ṇu-mas*
7	*na*	*yu-na-k-ti*	*n*	*yu-ñ-j-mas*
8	*ô*	*tan-ô-ti*	*u*	*tan-i-mas*
9	*nā*	*pu-nā-ti*	*nī*	*pu-nī-mas*

Before dealing with concrete verbs of the 5. class, we point out three features.

1. In line with sound law **DIPH** (pp. 22), the strong class sign *nô* turn into *nav* when a vowel follows:

$\sqrt{}$	1. pers. sg. pres. tense	1. pers. sg. impf.	translation
āp	*āp-nô-mi*	*āp-nav-am*	to obtain
śak	*śak-nô-mi*	*a-śak-nav-am*	to be able
su	*su-nô-mi*	*su-nav-am*	to press

2. The weak class sign *nu* shows predictable variations (see ***hV***) depending on whether a consonant or a vowel follows:

$\sqrt{}$	3. pers. dual pres. tense	3. pers. pl. pres. tense	translation
āp	*āp-nu-tas*	*āp-nuv-an-ti*	to obtain
śak	*śak-nu-tas*	*śak-nuv-an-ti*	to be able
su	*su-nu-tas*	*su-nv-an-ti*	to press

While *su-nv-an-ti* is very clear, the other two examples are more difficult. Note that n.at. *śak-nv-an-ti* would be quite impossible. *n* would by syllabified, with difficult-to-understand outcome. Hence, the rule

				example
V*+*hV	*CRyV*	→	*CRiyV*	*mr-iy-a-tê*
	CRuV	→	*CRuvV*	*āp-nuv-an-ti*

is applied and *śak-nuv-an-ti* results.

3. The weak class sign *nu* is often to *n* in the 1. pers. dual and pl., present and past tenses:

√	1. pers. pl. pres. tense		translation
āp	*āp-nu-mas*	not *āp-n-mas*	to obtain
śak	*śak-nu-mas*	not *śak-n-mas*	to be able
su	*su-nu-mas*	*su-n-mas*	to press

It is clear that forms like *śak-n-mas* do not work.

We now turn to some verbs of the 5. class, in particular to

◇ *su* ("to press") on pp. 174

◇ *śru* ("to hear") on pp. 175

◇ *āp* ("to get") on pp. 175

◇ *aś* ("to get, to enjoy") on pp. 176

su ("to press")

We now turn to *su* ("to press").

	√*su* ← ie. **seu*, parasmâipada			
	sg.	dual	pl.	
1	***su-nô-mi*** (1)	*su-n(u)-vas* (4)	*su-n(u)-mas* (4)	present
2	***su-nô-ṣi*** (1, 6)	*su-nu-thas*	*su-nu-tha*	tense
3	***su-nô-ti*** (1)	*su-nu-tas*	*su-nv-an-ti* (3)	(prim. end.)
1	***a-su-nav-am*** (2)	*a-su-n(u)-va* (4)	*a-su-n(u)-ma* (4)	imperfect
2	***a-su-nô-s*** (1)	*a-su-nu-tam*	*a-su-nu-ta*	(sec. end.)
3	***a-su-nô-t*** (1)	*a-su-nu-tām*	*a-su-nv-an* (3)	with augm.
1	***su-nav-āni*** (2)	***su-nav-āva*** (2)	***su-nav-āma*** (2)	imper-
2	*su-nu* (5)	*su-nu-tam*	*su-nu-ta*	ative
3	***su-nô-tu*** (1)	*su-nu-tām*	*su-nv-an-tu* (3)	(sec. end.)

1. The strong forms have the strong class sign *nô* before consonant endings (see **DIPH**).

2. The strong forms have the strong class sign *nav* before vowel endings (see **DIPH**).

3. The weak forms before vowel endings are *nv* (see ***hV***).

4. In the four weak forms with *m* and *v* endings, we alternatively have *n* for *nu*, i.e., *su-n-vas* besides *su-nu-vas* etc.

5. Thematic parasmâipada paradigms show the stem as sec. pers. sg. impv., as in *bhara* ("carry!"). This holds for some verbs from the 5. class, but not for all:

   ◇ *su-nu* ("press!") and *śru-ṇu* ("hear!") versus

   ◇ *āp-nu-hi* ("get!") and *śak-nu-hi* ("be able!")

6. **RUKI**.

śṛ ("to hear")

Maybe, you like to consult section C.2.5 (p. 88) once again. For the purpose of the following paradigm, we work with *śṛ* ("to hear") rather than *śru*. The paradigm for *śṛ* closely follows the *su* paradigm above. For the numbers, see under the *su* table above. Observe, however, cerebralization of the class signs after *ṛ*.

	$\sqrt{}$*śṛ* ← ie. **seu*, parasmâipada			
	sg.	dual	pl.	
1	***śṛ-ṇô-mi*** (1)	*śṛ-ṇ(u)-vas* (4)	*śṛ-ṇ(u)-mas* (4)	present
2	***śṛ-ṇô-ṣi*** (1, 6)	*śṛ-ṇu-thas*	*śṛ-ṇu-tha*	tense
3	***śṛ-ṇô-ti*** (1)	*śṛ-ṇu-tas*	*śṛ-ṇv-an-ti* (3)	(prim. end.)
1	***a-śṛ-ṇav-am*** (2)	*a-śṛ-ṇ(u)-va* (4)	*a-śṛ-ṇ(u)-ma* (4)	imperfect
2	***a-śṛ-ṇô-s*** (1)	*a-śṛ-ṇu-tam*	*a-śṛ-ṇu-ta*	(sec. end.)
3	***a-śṛ-ṇô-t*** (1)	*a-śṛ-ṇu-tām*	*a-śṛ-ṇv-an* (3)	with augm.
1	***śṛ-ṇav-āni*** (2)	***śṛ-ṇav-āva*** (2)	***śṛ-ṇav-āma*** (2)	imper-
2	*śṛ-ṇu* (5)	*śṛ-ṇu-tam*	*śṛ-ṇu-ta*	ative
3	***śṛ-ṇô-tu*** (1)	*śṛ-ṇu-tām*	*śṛ-ṇv-an-tu* (3)	(sec. end.)

āp ("to get")

And here the somewhat similar paradigm for *āp*:

	$\sqrt{\bar{a}p} \leftarrow$ ie. $^*h_1ep$, parasmâipada			
	sg.	dual	pl.	
1	***ā́p-nô-mi*** (1)	*āp-nu-vas* (4)	*āp-nu-mas* (4)	present
2	***ā́p-nô-ṣi*** (1, 6)	*āp-nu-thas*	*āp-nu-tha*	tense
3	***ā́p-nô-ti*** (1)	*āp-nu-tas*	*āp-nuv-an-ti* (3)	(prim. end.)
1	***ā́p-nav-am*** (2)	*āp-nu-va* (4)	*āp-nu-ma* (4)	imperfect
2	***ā́p-nô-s*** (1)	*āp-nu-tam*	*āp-nu-ta*	(sec. end.)
3	***ā́p-nô-t*** (1)	*āp-nu-tām*	*āp-nuv-an* (3)	with augm.
1	***ā́p-nav-āni*** (2)	***ā́p-nav-āva*** (2)	***ā́p-nav-āma*** (2)	imper-
2	*āp-ṇu-hi* (5)	*āp-nu-tam*	*āp-nu-ta*	ative
3	***ā́p-nô-tu*** (1)	*āp-nu-tām*	*āp-nuv-an-tu* (3)	(sec. end.)

1. The strong forms have the strong class sign *nô* before consonant endings (see **DIPH**).

2. The strong forms have the strong class sign *nav* before vowel endings (see **DIPH**).

3. The weak forms before vowel endings are *nuv*. See ***V*+*hV*** on pp. 21 for a discussion of the difference between *āp-nuv-an-ti* here and *su-nv-an-ti* above.

4. In contrast to *su*, there are not alternative forms. Indeed, while *āp-nu-ma* is quite transparent, *āp-n-ma* is not (see p. 174).

5. In contrast to *su*, we witness the (nearly) regular sec. pers. sg. imp. of parasmâipada verbs *hi*.

6. **RUKI**.

aś ("to get, to enjoy")

We now turn to an ātmanêpada verb:

	$\sqrt{}$*aś* ← ie. **Heḱ*, ātmanêpada			
	sg.	dual	pl.	
1	*aś-nuv-ê* (2)	*aś-nu-vahê* (1)	*aś-nu-mahê* (1)	present
2	*aś-nu-ṣê* (1, 5)	*aś-nuv-āthê* (2)	*aś-nu-dhvê* (1)	tense
3	*aś-nu-tê* (1)	*aś-nuv-ātê* (2)	*aś-nuv-a-tê* (2, 3)	(prim. end.)
1	*āś-nuv-i* (2)	*āś-nu-vahi* (1)	*āś-nu-mahi* (1)	imperfect
2	*āś-nu-thās* (1)	*āś-nuv-āthām* (2)	*āś-nu-dhvam* (1)	(sec. end.)
3	*āś-nu-ta* (1)	*āś-nuv-ātām* (2)	*āś-nuv-a-ta* (2, 3)	with augm.
1	***aś-nav-âi*** (4)	***aś-nav-ā-vahâi*** (4)	***aś-nav-ā-mahâi*** (4)	imper-
2	*aś-nu-ṣva* (1, 5)	*aś-nuv-āthām* (2)	*aś-nu-dhvam* (1)	ative
3	*aś-nu-tām* (1)	*aś-nuv-ātām* (2)	*aś-nuv-a-tām* (2, 3)	(sec. end.)

1. Expectedly, the weak forms before consonantal endings are *nu*, for example *aś-nu-tê*.

2. The weak forms before vowel endings are *nuv*, for example *aś-nuv-ê*. See ***V*** $+$ ***hV*** (pp. B.2.2).

3. A specific example of *nuv* before vowel endings is provided by 3. pers. pl. *aś-nuv-atê* where *a* goes back to $\underset{\circ}{n}$.

4. The strong forms like ***aś-nav-âi*** have the class sign *nav* before vowel endings (**DIPH**).

5. **RUKI**

C.6.6. The seventh class

Introductory remark and overview

Historically, the 7. class is the most primitive one of the four nasal classes 5, 7, 8, and 9 (pp. 87). We consider in detail the verbs from the following table:

$\sqrt{}$	3. pers. sg.	3. pers. pl.	pp.
yuj	*yu-na-k-ti*	*yu-ñ-j-mas*	178
rudh	*ru-ṇa-d-dhi*	*ru-n-dh-mas*	179
bhid	*bhi-na-t-ti*	*bhi-n-d-mas*	181
hi-ṃ-s	*hi-na-s-ti*	*hi-ṃ-s-mas*	182

Here, the infixes into the root

◇ *na* for strong forms

◇ *n* for weak forms

are clearly seen. The oi. root does not, normally, contain the nasal infix, but the desiderative (!) *hiṃs* (p. 135) is an exception.

yuj ("to join")

Oi. *yuj* ("to join") and oi. *bhuj* ("to protect") follow the same pattern. Here is the parasmâipada paradigm of *yuj* (just replace *y* by *bh* for *bhuj*):

	√*yuj* ← ie. **yug*, parasmâipada			
	sg.	dual	pl.	
1	***yu-na-j-mi*** (1)	*yu-ñ-j-vas* (1)	*yu-ñ-j-mas* (1)	present
2	***yu-na-k-ṣi*** (3)	*yu-ṅ-k-thas* (3)	*yu-ṅ-k-tha* (3)	tense
3	***yu-na-k-ti*** (3)	*yu-ṅ-k-tas* (3)	*yu-ñ-j-an-ti* (1, 5a)	(prim. end.)
1	***a-yu-na-j-am*** (1)	*a-yu-ñ-j-va* (1)	*a-yu-ñ-j-ma* (1)	imperfect
2	***a-yu-na-k*** (3, 4)	*a-yu-ṅ-k-tam* (3)	*a-yu-ṅ-k-ta* (3)	(sec. end.)
3	***a-yu-na-k*** (3, 4)	*a-yu-ṅ-k-tām* (3)	*a-yu-ñ-j-an* (3, 5a)	with augm.
1	***yu-na-j-āni*** (1)	***yu-na-j-āva*** (1)	***yu-na-j-āma*** (1)	imper-
2	*yu-ṅ-g-dhi* (2)	*yu-ṅ-k-tam* (3)	*yu-ṅ-k-ta* (3)	ative
3	***yu-na-k-tu*** (3)	*yu-ṅ-k-tām* (3)	*yu-ñ-j-an-tu* (3, 5a)	(sec. end.)

1. The final oi. root voiced consonant *j* is found before all endings starting with resonants *m* or *v* or with vowels.

2. Instead of *j*, we find voiced *g* before voiced dentals (**BA**).

3. Instead of *j*, we find nonvoiced *k* before nonvoiced consonants (**BA**).

4. The impv. sg. forms *a-yu-na-k* reflect sound laws **BA** and **CCl**, i.e., *a-yu-na-k* stands in for **a-yu-na-k-s* or **a-yu-na-k-t*, respectively. Alternatively, one would get the same result by applying **CCl** and **AFP**, in that order.

5. In 3. pers. pl. forms, we have *a* in both parasmâipada and ātmanêpada forms. Note, however:

   a. In parasmâipada 3. pers. pl. forms like *yu-ñ-j-a-n-ti* (paradigm above), we have *an* due to regularly occuring borrowing of *a* from the thematic classes.

   b. In contrast, ātmanêpada forms like *yu-ñ-j-a-tê* (see below) do without this borrowing and *a* goes back to syllabic *n̥*: *yu-ñ-j-a-tê* ← ie. **yu-n-ǵ-n̥-toi*.

And here you see the ātmanêpada paradigm where the numbers are explained above:

	√*yuj* ← ie. **yug*, ātmanêpada			
	sg.	dual	pl.	
1	*yu-ñ-j-ê* (1)	*yu-ñ-j-vahê* (1)	*yu-ñ-j-mahê* (1)	present
2	*yu-ṅ-k-ṣê* (3)	*yu-ñ-j-āthê* (1)	*yu-ṅ-g-dhvê* (2)	tense
3	*yu-ṅ-k-tê* (3)	*yu-ñ-j-ātê* (1)	*yu-ñ-j-a-tê* (1, 5b)	(prim. end.)
1	*a-yu-ñ-j-i* (1)	*a-yu-ñ-j-vahi* (1)	*a-yu-ñ-j-mahi* (1)	imperfect
2	*a-yu-ṅ-k-thās* (3)	*a-yu-ñ-j-āthām* (1)	*a-yu-ṅ-g-dhvam* (2)	(sec. end.)
3	*a-yu-ṅ-k-ta* (3)	*a-yu-ñ-j-ātām* (1)	*a-yu-ñ-j-a-ta* (1, 5b)	with augm.
1	***yu-na-j-âi*** (1)	***yu-na-j-ā-vahâi*** (1)	***yu-na-j-ā-mahâi*** (1)	imper-
2	*yu-ṅ-k-ṣva* (3)	*yu-ñ-j-āthām* (1)	*yu-ṅ-g-dhvam* (2)	ative
3	*yu-ṅ-k-tām* (3)	*yu-ñ-j-ātām* (1)	*yu-ñ-j-a-tām* (1, 5b)	(sec. end.)

rudh ("to obstruct")

The next verb is *rudh* ("to obstruct"). While the nasal infix does not change (before the dental endings), we have a few applications of Bartholomae's law. We begin with the parasmâipada paradigm:

	√*rudh* ← ie. **reudh*, parasmâipada			
	sg.	dual	pl.	
1	***ru-ṇa-dh-mi*** (3)	*ru-n-dh-vas* (3)	*ru-n-dh-mas* (3)	present
2	***ru-ṇa-t-si*** (2a)	*ru-n-d-dhas* (1b)	*ru-n-d-dha* (1b)	tense
3	***yu-na-d-dhi*** (1a)	*ru-n-d-dhas* (1a)	*ru-n-dh-an-ti* (3, 4a)	(prim. end.)
1	***a-ru-ṇa-dh-am*** (3)	*a-ru-n-dh-va* (3)	*a-ru-n-dh-ma* (3)	imperfect
2	***a-ru-ṇa-s*/*a-ru-ṇa-t*** (5)	*a-ru-n-d-dham* (1a)	*a-ru-n-d-dha* (1a)	(sec. end.)
3	***a-ru-ṇa-t*** (5)	*a-ru-n-d-dhām* (1a)	*a-ru-n-dh-an* (3, 4a)	with augm.
1	***ru-ṇa-dh-āni*** (3)	***ru-ṇa-dh-āva*** (3)	***ru-ṇa-dh-āma*** (3)	imper-
2	*ru-n-d-dhi* (1c)	*ru-n-d-dham* (1a)	*ru-n-d-dha* (1a)	ative
3	***ru-ṇa-d-dhu*** (1a)	*ru-n-d-dhām* (1a)	*ru-n-dh-an-tu* (3, 4a)	(sec. end.)

1. Many forms show aspiration shift **ASh** (pp. 37). In particular, we have three cases:
   - **a.** *dh-t* → *d-dh* (aspiration shift and forward assimilation) is seen in *ru-ṇa-d-dhi*.
   - **b.** *dh-th* → *d-dh* (forward assimilation, but no double aspiration) is seen in *ru-n-d-dhas*.
   - **c.** *dh-dh* → *d-dh* (*dh* is already voiced and aspirated) is seen in *ru-n-d-dhvê* (see ātmanêpada paradigm below).

   The pres. tense dual form *ru-n-d-dhas* reflects both endings *thas* (case b) and *tas* (case a).

2. *dh* looses its aspiration in these cases:

   a. before *s* as in parasmâipada pres. tense 2. pers. sg. *ru-ṇa-t-si* where

   ◇ the root-final *dh* lost its aspiration and became voiceless before voiceless *s*, and

   ◇ this *s* cannot assume the aspiration (which would otherwise occur by Bartholomae's law)

   b. before *dhv* as in ātmanêpada pres. tense 2. pers. pl. *ru-n-d-dhvê* where

   ◇ the root-final *dh* lost its aspiration,

   ◇ *dh* is already aspirated so that not further aspiration was possible, and

   ◇ *v* cannot assume this aspiration.

3. The oi. root consonant *dh* is found before all endings starting with resonants *m* or *v* or with vowels.

4. In 3. pers. pl. forms, we have *a* in both parasmâipada and ātmanêpada forms. Note, however:

   a. In parasmâipada 3. pers. pl. forms like *ru-n-dh-a-n-ti* (paradigm above), we have *an* due to borrowing of *a* from the thematic classes.

   b. In contrast, ātmanêpada forms like *ru-n-dh-a-tê* (see below) do without this borrowing and *a* goes back to syllabic $\underset{\circ}{n}$.

5. We explain the imperfect 3. pers. sg. by

   $$\begin{aligned} & {}^{*}a\text{-}ru\text{-}ṇa\text{-}dh\text{-}t \\ \rightarrow\ & a\text{-}ru\text{-}ṇa\text{-}dh\ (\mathbf{CCl}) \\ \rightarrow\ & a\text{-}ru\text{-}ṇa\text{-}t\ (\mathbf{AFP}) \end{aligned}$$

   This also works for the 2. pers. However, the 2. pers. admits a variant *a-ru-ṇa-s* which is formed by the wish to restore the usual ending *s*.

And here you see the ātmanêpada paradigm where the numbers are explained above:

	√*rudh* ← ie. **reudh*, ātmanêpada			
	sg.	dual	pl.	
1	*ru-n-dh-ê* (3)	*ru-n-dh-vahê* (3)	*ru-n-dh-mahê* (3)	present
2	*ru-n-t-sê* (2a)	*ru-n-dh-āthê* (3)	*ru-n-d-dhvê* (1c, 2b)	tense
3	*ru-n-d-dhê* (1a)	*ru-n-dh-ātê* (3)	*ru-n-dh-a-tê* (3, 4b)	(prim. end.)
1	*a-ru-n-dh-i* (3)	*a-ru-n-dh-vahi* (3)	*a-ru-n-dh-mahi* (3)	imperfect
2	*a-ru-n-d-dhās* (1b)	*a-ru-n-dh-āthām* (3)	*a-ru-n-d-dhvam* (1c, 2b)	(sec. end.)
3	*a-ru-n-d-dha* (1a)	*a-ru-n-dh-ātām* (3)	*a-ru-n-dh-a-ta* (3, 4b)	with augm.
1	***ru-ṇa-dh-âi*** (3)	***ru-ṇa-dh-ā-vahâi*** (3)	***ru-ṇa-dh-ā-mahâi*** (3)	imper-
2	*ru-n-t-sva* (2a)	*ru-n-dh-āthām* (3)	*ru-n-d-dhvam* (1c, 2b)	ative
3	*ru-n-d-dhām* (1a)	*ru-n-dh-ātām* (3)	*ru-n-dh-a-tām* (3, 4b)	(sec. end.)

bhid ("to break")

We now turn to *bhid* ("to break"):

	√*bhid* ← ie. **bheid*, parasmâipada			
	sg.	dual	pl.	
1	***bhi-na-d-mi*** (1)	*bhi-n-d-vas* (1)	*bhi-n-d-mas* (1)	present
2	***bhi-na-t-si*** (3)	*bhi-n-d-thas* (3)	*bhi-n-t-tha* (3)	tense
3	***bhi-na-t-ti*** (3)	*bhi-n-t-tas* (3)	*bhi-n-d-an-ti* (1, 5a)	(prim. end.)
1	***a-bhi-na-d-am*** (1)	*a-bhi-n-d-va* (1)	*a-bhi-n-d-ma* (1)	imperfect
2	***a-bhi-na-s/a-bhi-na-t*** (3, 4)	*a-bhi-n-t-tam* (3)	*a-bhi-n-t-ta* (3)	(sec. end.)
3	***a-bhi-na-t*** (3, 4)	*a-bhi-n-t-tām* (3)	*a-bhi-n-d-an* (3, 5a)	with augm.
1	***bhi-na-d-āni*** (1)	***bhi-na-d-āva*** (1)	***bhi-na-d-āma*** (1)	imper-
2	*bhi-n-d-dhi* (2)	*bhi-n-t-tam* (3)	*bhi-n-t-ta* (3)	ative
3	***bhi-na-t-tu*** (3)	*bhi-n-t-tām* (3)	*bhi-n-d-an-tu* (3, 5a)	(sec. end.)

1. The final oi. root consonant *d* is found before all endings starting with resonants *m* or *v* or with vowels.

2. Since the root-final *d* corresponds to the ending of 2. pers. sg. impv., there is no change in *bhi-n-d-dhi*.

3. Instead of *d*, we find nonvoiced *t* before nonvoiced consonants (**BA**).

4. The impf. sg. forms *a-bhi-na-t* reflect sound laws **BA** and **CCl**, i.e., *a-bhi-na-t* stands in for **a-bhi-na-t-s* or **a-bhi-na-t-t*, respectively. Alternatively, one would get the same result by applying **CCl** and **AFP.**

5. In 3. pers. pl. forms, we have *a* in both parasmâipada and ātmanêpada forms. Note, however:

   a. In parasmâipada 3. pers. pl. forms like *bhi-n-d-an-ti* (paradigm above), we have *an* due to borrowing of *a* from the thematic classes.

   b. In contrast, ātmanêpada forms like *bhi-n-d-a-tê* (see below) do without this borrowing and *a* goes back to syllabic *n̥*.

And here you see the ātmanêpada paradigm where the numbers are explained above:

	√*bhid* ← ie. **bheid*, ātmanêpada			
	sg.	dual	pl.	
1	*bhi-n-d-ê* (1)	*bhi-n-d-vahê* (1)	*bhi-n-d-mahê* (1)	present
2	*bhi-n-t-sê* (3)	*bhi-n-d-āthê* (1)	*bhi-n-d-dhvê* (2)	tense
3	*bhi-n-t-tê* (3)	*bhi-n-d-ātê* (1)	*bhi-n-d-a-tê* (1, 5b)	(prim. end.)
1	*a-bhi-n-d-i* (1)	*a-bhi-n-d-vahi* (1)	*a-bhi-n-d-mahi* (1)	imperfect
2	*a-bhi-n-t-thās* (3)	*a-bhi-n-d-āthām* (1)	*a-bhi-n-d-dhvam* (2)	(sec. end.)
3	*a-bhi-n-t-ta* (3)	*a-bhi-n-d-ātām* (1)	*a-bhi-n-d-a-ta* (1, 5b)	with augm.
1	***bhi-na-d-âi*** (1)	***bhi-na-d-ā-vahâi*** (1)	***bhi-na-d-ā-mahâi*** (1)	imper-
2	*bhi-n-t-sva* (3)	*bhi-n-d-āthām* (1)	*bhi-n-d-dhvam* (2)	ative
3	*bhi-n-t-tām* (3)	*bhi-n-d-ātām* (1)	*bhi-n-d-a-tām* (1, 5b)	(sec. end.)

hiṃs ("to injure")

In contrast to the usual convention, *hiṃs* ("to injure") shows the weak nasal sign in the oi. root. We have the strong sign *na* versus the weak sign *ṃ* (expected *sandhi* before consonants):

	√*hiṃs* parasmâipada			
	sg.	dual	pl.	
1	***hi-na-s-mi***	*hiṃs-vas*	*hiṃs-mas*	present
2	***hi-na-s-si***	*hiṃs-thas*	*hiṃs-tha*	tense
3	***hi-na-s-ti***	*hiṃs-tas*	*hiṃs-an-ti*	(prim. end.)
1	***a-hi-na-s-am***	*a-hiṃs-va*	*a-hiṃs-ma*	imperfect
2	***a-hi-na-s/hi-na-t*** (1)	*a-hiṃs-tam*	*a-hiṃs-ta*	(sec. end.)
3	***a-hi-na-t*** (1)	*a-hiṃs-tām*	*a-hiṃs-an*	with augm.
1	***hi-na-s-āni***	***hi-na-s-āva***	***hi-na-s-āma***	imper-
2	*hi-n-dhi* (2)	*hiṃs-tam*	*hiṃs-ta*	ative
3	***hi-na-s-tu***	*hiṃs-tām*	*hiṃs-an-tu*	(sec. end.)

1. We explain the imperfect 2. pers. sg. by

$$\begin{array}{rl} & {}^{*}a\text{-}hi\text{-}na\text{-}s\text{-}s \\ \rightarrow & a\text{-}hi\text{-}na\text{-}s \ (\mathbf{CCl}) \end{array}$$

   The same form should be produced in the 3. pers., ${}^{*}a\text{-}hi\text{-}na\text{-}s\text{-}t \rightarrow a\text{-}hi\text{-}na\text{-}s$. The forms shown in the table would have been produced by analogy with other verbs like *bhid*. Compensatory lengthening could also have occured. But if, it has been levelled quickly.

2. The form *hi-n-dhi* for expected ${}^{*}hi\text{-}ṃ\text{-}s\text{-}dhi$ is mysterious.

C.6.7. The eighth class

Introductory remark and overview

Most paradigms of the 8. class closely resemble those of the 5. class. The reason has been explained on pp. 89. We focus on *tan* ("to stretch, to extend") on pp. 183. In presenting the *tan* paradigms, we assume the gaṇa signs *ô* and *u*, respectively, in line with traditional Indian grammar.

Additionally, we present the paradigm for the very frequent verb *kṛ* ("to do, to make") on pp. 184.

tan ("to stretch, to extend")

We begin with the parasmâipada paradigm of *tan* ("to stretch, to extend"):

	$\surd tan \leftarrow$ ie. ${}^{*}ten$, parasmâipada			
	sg.	dual	pl.	
1	***tan-ô-mi*** (1)	*tan-(u)-vas* (4)	*tan-(u)-mas* (4)	present
2	***tan-ô-ṣi*** (1, 6)	*tan-u-thas*	*tan-u-tha*	tense
3	***tan-ô-ti*** (1)	*tan-u-tas*	*tan-v-an-ti* (3)	(prim. end.)
1	***a-tan-av-am*** (2)	*a-tan-(u)-va* (4)	*a-tan-(u)-ma* (4)	imperfect
2	***a-tan-ô-s*** (1)	*a-tan-u-tam*	*a-tan-u-ta*	(sec. end.)
3	***a-tan-ô-t*** (1)	*a-tan-u-tām*	*a-tan-v-an* (3)	with augm.
1	***tan-av-āni*** (2)	***tan-av-āva*** (2)	***tan-av-āma*** (2)	imper-
2	*tan-u* (5)	*tan-u-tam*	*tan-u-ta*	ative
3	***tan-ô-tu*** (1)	*tan-u-tām*	*tan-v-an-tu* (3)	(sec. end.)

1. The strong forms have the strong class sign *ô* before consonant endings (see **DIPH**).

2. The strong forms have the strong class sign *av* before vowel endings (see **DIPH**).

3. The weak forms before vowel endings are *v* (see ***hV***).

4. In the four weak forms with *m* and *v* endings, we alternatively have ∅ for *u*, i.e., *tan-mas* besides *tan-u-mas* etc.

5. Thematic parasmâipada paradigms show the stem as sec. pers. sg. impv., as in *bhara* ("carry!"). This holds here for *tan-u* ("stretch!") as for some verbs from the 5. class class like *su-nu*.

6. **RUKI**.

We now turn to the ātmanêpada paradigm:

	√*tan* ← ie. **ten*, ātmanêpada			
	sg.	dual	pl.	
1	*tan-v-ê* (2)	*tan-(u-)vahê* (1, 5)	*tan-(u-)mahê* (1, 5)	present
2	*tan-u-ṣê* (1, 6)	*tan-v-āthê* (2)	*tan-u-dhvê* (1)	tense
3	*tan-u-tê* (1)	*tan-v-ātê* (2)	*tan-v-a-tê* (2, 3)	(prim. end.)
1	*a-tan-v-i* (2)	*a-tan-(u-)vahi* (1, 5)	*a-tan-(u-)mahi* (1, 5)	imperfect
2	*a-tan-u-thās* (1)	*a-tan-v-āthām* (2)	*a-tan-u-dhvam* (1)	(sec. end.)
3	*a-tan-u-ta* (1)	*a-tan-v-ātām* (2)	*a-tan-v-a-ta* (2, 3)	with augm.
1	***tan-av-âi*** (4)	***tan-av-ā-vahâi*** (4)	***tan-av-ā-mahâi*** (4)	imper-
2	*tan-u-ṣva* (1, 6)	*a-tan-v-āthām* (2)	*tan-u-dhvam* (1)	ative
3	*tan-u-tām* (1)	*a-tan-v-ātām* (2)	*tan-v-a-tām* (2, 3)	(sec. end.)

1. Expectedly, the weak forms before consonants are *u*, for example *tan-u-tê*.

2. The weak forms before vowels are *tan-v-ê* and *a-tan-v-i*.

3. Other examples of *v* before vowel endings are provided by 3. pers. pl. *tan-v-atê* etc. where *a* goes back to *n*̥.

4. The strong forms have the class sign *av* before vowel endings (see **DIPH**), for example *tan-av-âi*.

5. In the four weak forms with *m* and *v* endings, we alternatively have no class sign instead of class sign *u*, similar to some verbs from the 5. class (*su-n(u)-mas*).

6. **RUKI**

kṛ ("to do, to make")

The paradigms for *kṛ* ("to do, to make") differ somewhat from the nasal verbs like *tan*:

	$\sqrt{kṛ} \leftarrow$ ie. $*k^{w}er$ (without **SPal**), parasmâipada			
	sg.	dual	pl.	
1	***kar-ô-mi*** (1a)	*kur-vas* (3)	*kur-mas* (3)	present
2	***kar-ô-ṣi*** (1a, 5)	*kur-u-thas*	*kur-u-tha*	tense
3	***kar-ô-ti*** (1a)	*kur-u-tas*	*kur-v-an-ti* (2)	(prim. end.)
1	***a-tan-av-am*** (1b)	*a-kur-va* (3)	*a-kur-ma* (3)	imperfect
2	***a-kar-ô-s*** (1a)	*a-kur-u-tam*	*a-kur-u-ta*	(sec. end.)
3	***a-kar-ô-t*** (1a)	*a-kur-u-tām*	*a-kur-v-an* (2)	with augm.
1	***kar-av-āni*** (1b)	***kar-av-āva*** (1b)	***kar-av-āma*** (1b)	imper-
2	*kur-u* (4)	*kur-u-tam*	*kur-u-ta*	ative
3	***kar-ô-tu*** (1a)	*kur-u-tām*	*kur-v-an-tu* (2)	(sec. end.)

1. The strong forms use the full-grade *kar*. That is different from the other verbs like *tan* that, originally, is build on the zero grade (see, again, pp. 89). The class sign

   a. *ô* before consonant endings.

   b. *av* before vowel endings.

2. The weak form is *kur-u*, but we have *v* before vowel endings (***hV***), for example *kur-v-a-n-ti*.

3. In the four weak forms with *m* and *v* endings, we see the zero class sign, exclusively. Thus,

   ◇ for *tan*, we have *tan-vas* besides *tan-u-vas*

   ◇ but *kṛ* shows only *kur-vas*.

4. Similar to *su-nu* (5. class) and *tan-u* (8. class), we have *kur-u* ("do!").

5. **RUKI**

We now turn to the ātmanêpada paradigm:

	$\sqrt{kṛ} \leftarrow$ ie. $^*k^wer$ (without **SPal**), ātmanêpada			
	sg.	dual	pl.	
1	*kur-v-ê* (2)	*kur-vahê* (1, 5)	*kur-mahê* (1, 5)	present
2	*kur-u-ṣê* (1, 6)	*kur-v-āthê* (2)	*kur-u-dhvê* (1)	tense
3	*kur-u-tê* (1)	*kur-v-ātê* (2)	*kur-v-a-tê* (2, 3)	(prim. end.)
1	*a-kur-v-i* (2)	*a-kur-vahi* (1, 5)	*a-kur-mahi* (1, 5)	imperfect
2	*a-kur-u-thās* (1)	*a-kur-v-āthām* (2)	*a-kur-u-dhvam* (1)	(sec. end.)
3	*a-kur-u-ta* (1)	*a-kur-v-ātām* (2)	*a-kur-v-a-ta* (2, 3)	with augm.
1	***kur-av-âi*** (4)	***kur-av-ā-vahâi*** (4)	***kur-av-ā-mahâi*** (4)	imper-
2	*kur-u-ṣva* (1, 6)	*a-kur-v-āthām* (2)	*kur-u-dhvam* (1)	ative
3	*kur-u-tām* (1)	*a-kur-v-ātām* (2)	*kur-v-a-tām* (2, 3)	(sec. end.)

1. Expectedly, the weak forms before consonants are *u*, for example *kur-u-tê*.
2. The weak forms before vowels are *kur-v-ê*, as expected.
3. Forms like 3. pers. pl. *kur-v-atê* exhibit $a \leftarrow \underset{\circ}{n}$.
4. The strong forms have the class sign *av* before vowel endings (see **DIPH**), for example *kar-av-âi*.
5. In the four weak forms with *m* and *v* endings, we see the zero class sign, exclusively.
6. **RUKI**

C.6.8. The ninth class

The class signs for the 9. class are *nā* (strong forms) and *nī* (weak forms). Revisit pp. 87. Since both class signs end in a vowel, the forms do not present any particular difficulties. Consider the parasmâipada paradigm of *pū* ("to purify"):

	$\sqrt{pū} \leftarrow$ ie. $^*puH$, parasmâipada			
	sg.	dual	pl.	
1	***pu-nā-mi***	*pu-nī-vas*	*pu-nī-mas*	present
2	***pu-nā-si***	*pu-nī-thas*	*pu-nī-tha*	tense
3	***pu-nā-ti***	*pu-nī-tas*	*pu-n-an-ti* (3)	(prim. end.)
1	***a-pu-nā-m*** (1)	*a-pu-nī-va*	*a-pu-nī-ma*	imperfect
2	***a-pu-nā-s***	*a-pu-nī-tam*	*a-pu-nī-ta*	(sec. end.)
3	***a-pu-nā-t***	*a-pu-nī-tām*	*a-pu-n-an* (3)	with augm.
1	***pu-n-āni*** (2)	***pu-n-āva*** (2)	***pu-n-āma*** (2)	imper-
2	*pu-nī-hi* (4)	*pu-nī-tam*	*pu-nī-ta*	ative
3	***pu-nā-tu***	*pu-nī-tām*	*pu-n-an-tu* (3)	(sec. end.)

1. We have *a-pu-nā-m*: no borrowing of *a* from the thematic verbs necessary.

2. Think of *pu-n-āni* as *pu-nā-āni*..

3. The 3. pers. pl. forms (example: *pu-n-a-n-ti*) have been modelled on the many other athematic forms like *duh-a-n-ti* (2. class) or *kur-v-a-n-ti* (8. class). The weak class sign *nī* is not seen any more.

4. Observe imperative *pu-nī-hi* instead of **pu-nī-dhi*.

The ātmanêpada paradigm is not spectacular, either:

	$\sqrt{pū}$ ← ie. **puH*, ātmanêpada			
	sg.	dual	pl.	
1	*pu-n-ê* (1)	*pu-nī-vahê*	*pu-nī-mahê*	present
2	*pu-nī-ṣê* (5)	*pu-n-āthê* (2)	*pu-nī-dhvê*	tense
3	*pu-nī-tê*	*pu-n-ātê* (2)	*pu-n-a-tê* (3)	(prim. end.)
1	*a-pu-n-i* (4)	*a-pu-nī-vahi*	*a-pu-nī-mahi*	imperfect
2	*a-pu-nī-thās*	*a-pu-n-āthām*	*a-pu-nī-dhvam*	(sec. end.)
3	*a-pu-nī-ta*	*a-pu-n-ātām*	*a-pu-n-a-ta* (3)	with augm.
1	***pu-n-âi*** (6)	***pu-n-ā-vahâi*** (6)	***pu-n-ā-mahâi*** (6)	imper-
2	*pu-nī-ṣva* (5)	*a-pu-n-āthām* (2)	*pu-nī-dhvam*	ative
3	*pu-nī-tām*	*a-pu-n-ātām* (2)	*pu-n-a-tām* (3)	(sec. end.)

1. The weak class sign *nī* is not present in *pu-n-ê* but "reduced to" just *n*.

2. Similar in the also weak *pu-n-āthê*. This loss of a laryngeal between consonant and vowel may be a regular development (**Lar_*CH***).

3. The 3. pers. pl. forms (example: *pu-n-an-ti*) have been modelled on the many other athematic forms like *duh-a-tê* (2. class) or *kur-v-atê* (8. class). The weak class sign *nī* is not seen any more.

4. *a-pu-n-i* is modelled after forms like *a-bi-bhr-i* (3. class) or *a-bhi-n-d-i* (7. class).

5. **RUKI**

6. The strong forms like *pu-n-ā-mahâi* can be thought of as resultung from *pu-nā-ā-mahâi*.

Verbs like *krī* ("to buy") or *prī* are formed similar to *pū*, with two exceptions:

◇ cerebral *ṇ* (due to **Cer*n***, pp. 42) in all class signs: *krī-ṇā-ti* and *krī-ṇī-mas*

◇ irregular *krī* (with long *ī*) in forms with weak or strong class sign:

	√*krī* ← ie. **kreih*$_2$, parasmâipada			
	sg.	dual	pl.	
1	***krī-ṇā-mi***	*krī-ṇī-vas*	*krī-ṇī-mas*	present
2	***krī-ṇā-si***	*krī-ṇī-thas*	*krī-ṇī-tha*	tense
3	***krī-ṇā-ti***	*krī-ṇī-tas*	*krī-ṇ-an-ti*	(prim. end.)
1	***a-krī-ṇā-m***	*a-krī-ṇī-va*	*a-krī-ṇī-ma*	imperfect
2	***krī-ṇā-s***	*a-krī-ṇī-tam*	*a-krī-ṇī-ta*	(sec. end.)
3	***krī-ṇā-t***	*a-krī-ṇī-tām*	*a-krī-ṇ-an*	with augm.
1	***krī-ṇ-āni***	***krī-ṇ-āva***	***krī-ṇ-āma***	imper-
2	*krī-ṇī-hi*	*krī-ṇī-tam*	*krī-ṇī-ta*	ative
3	***krī-ṇā-tu***	*krī-ṇī-tām*	*krī-ṇ-an-tu*	(sec. end.)

Many other verbs differ only with respect to parasmâipada 2. pers. impv.:

√	pres. tense 3. pers. sg.	impv., 2. pers. sg.	translation
aś (f.g.)	*aś-nā-ti*	*aś-āna* (f.g.)	eat!
kliś	*kliś-nā-ti*	*kliś-āna*	torment!
grah (f.g.)	*gṛh-ṇā-ti*	*gṛh-āṇa*	grab!
puṣ	*puṣ-ṇā-ti*	*puṣ-āṇa*	strengthen!
bandh (f.g.)	*badh-nā-ti*	*badh-āna*	bind!
muṣ	*muṣ-ṇā-ti*	*muṣ-āṇa*	rob!
stambh (f.g.)	*stabh-nā-ti*	*stabh-āna*	support!

C.7. Reduplicative perfect

C.7.1. General remarks

The reduplicative perfect is mainly attested for the 3. pers. sg. It is

◇ strong for parasmâipada sg.,

◇ weak for dual, pl. or ātmanêpada.

Reduplication for the perfect works similar to that of 3. class verbs (p. 165). Interestingly, the parasmâipada 3. pers. pl. is *us*

◇ for reduplicative perfect such as *da-d-us* as also

◇ for imperfect of 3. class verbs, for example *a-da-d-us* (see p. 166)

Typically, the initial consonant plus *a* ← ie. *e* (!) is placed before the full-grade root (strong forms) or the zero-grade root (weak forms). Two exceptions:

◇ *u*-roots (such as *yuj*) always reduplicate with *u*.

◇ *i*-roots (such as *lih*) always reduplicate with *i*.

C.7.2. Strong forms

Qualitative ablaut

We begin with the strong forms. They are built with the qualitative ablaut, the *o*-grade, i.e., we have

◇ ie. $o \rightarrow$ oi. a

◇ ie. $oi \rightarrow$ oi. $\hat{e}$

◇ ie. $ou \rightarrow$ oi. $\hat{o}$

Here are a few examples:

	√	perfect, 3. pers. sg.	translation
ie. *o*	*bandh* (f.g.)	*ba-bandh-a* (1)	to bind
ie. *oi*	*dviṣ*	*di-dvêṣ-a* (2)	to hate
	lih	*li-lêh-a*	to lick
	viś	*vi-vêś-a*	to cut
ie. *ou*	*tud*	*tu-tôd-a*	to hit
	yuj	*yu-yôj-a*	to join
	rud	*ru-rôd-a*	to weep

1. *ba-bandh-a* is regular reduplicated perfect with reduplication vowel *a*.

2. In *di-dvêṣ-a* just the initial consonant, not the initial consonant cluster is reduplicated. The reduplication vowel is *i* in line with the root vowel.

Of course, when the root-initial is an aspirated consonant, we can expect Grassmann's law, i.e., **DA**:

√	perfect, 3. pers. sg.	translation
chid	*ci-cchêd-a* (sandhi)	to cut
bhid	*bi-bhêd-a*	to split

An unusual outlier is *vêda* ("he knows") from √*vid*. Sihler [1995, pp. 564-569] explains that *vêda* has a stativ meaning and stands for a class of ie. perfects without reduplication.

Brugmann's law

Remember Brugmann's law **L*o***:

L*o* oi. $oCV \rightarrow$ oi. $\bar{a}CV$

In the above examples, this law was not applied. For example, *o* in **bhi-bhoid-a* is not in an open syllable because both the half vowel *i* and *d* count as consonants. However, many other examples show the effect of Brugmann's law:

√	perfect, 3. pers. sg.	translation
tan (f.g.)	*ta-tān-a*	to stretch
dah (f.g.)	*da-dāh-a*	to burn
naś (f.g.)	*na-nāś-a*	to perish
pat (f.g.)	*pa-pāt-a*	to fall
bhaj (f.g.)	*ba-bhāj-a*	to worship
bhṛ	*ba-bhār-a*	to bear
vyadh (f.g.)	*vi-vyādh-a*	to pierce
śap (f.g.)	*śa-śāp-a*	to curse
śru	*śu-śrāv-a*	to hear
su	*su-ṣāv-a* (**RUKI**)	to press
svap (f.g.)	*su-ṣvāp-a* (**RUKI**)	to sleep

Due to the ie. ending of the 1. pers. sg., the syllable is not open so that **L*o*** does not apply (pp. 33).

Samprasāraṇa

We now turn to roots with initial vowel or initial halfvowel. They reduplicate with this vowel or halfvowel (samprasāraṇa), totally in line with our general reduplication rule above:

√	perfect, 3. pers. sg.	translation
i	*iy-āy-a* (***V*+*hV***, **L*o***)	to go
iṣ	*iy-êṣ-a* (***V*+*hV***)	to wish
yaj (f.g.)	*i-yāj-a* (**L*o***)	to sacrifice
vac (f.g.)	*u-vāc-a* (**L*o***)	to say
vad (f.g.)	*u-vād-a* (**L*o***)	to say
vap (f.g.)	*u-vāp-a* (**L*o***)	to sow
vas (f.g.)	*u-vās-a* (**L*o***)	to dwell
vah (f.g.)	*u-vāh-a* (**L*o***)	to carry

Root with initial vowels *a* or *ā* (there would have been a laryngeal before the vowel) reduplicate with *a* so that *ā* is the expected sandhi result:

√ full grade	i.e. f.g. root	perfect, 3. pers. sg.	translation
aś	$^*HeḱH$ (f.g)	*āś-a* ← ie. $^*He$-$Hoḱ$-*e*	to eat
aś (z.g.)	$^*h_2n̥ḱ$ (z.g.), $^*h_2ne(n)ḱ$ (f.g.)	*ānaṃś-a* ← ie. $^*h_2e$-$h_2nonḱ$-*e*	to get
as	$^*h_1es$ (f.g.)	*ās-a* ← ie. $^*h_1e$-h_1os-*e*	to be
ah		*āh-a*	to say
āp (redupl.)	$^*h_1e$-h_1p-*neu*	*āp-a* ← ie. $^*h_1e$-h_1op-*e*	to obtain

Palatalization

Palatalization is also relevant for the reduplicative syllable. Indeed, we need to deal with primary palatalization (**PPal**), secondary palatalization (**SPal**), and analogical palatalization. For *hu* ("to sacrifice"), we have

ie. $^*ǵhu$-$ǵhou$-*e* (reduplication, *o*-grade)
→ *ǵu-ǵhou-e* (**DA**)
→ *ju-hov-e* (**PPal**, ***hV***)
→ *ju-hōv-e* (**L*o***)
→ *ju-hāv-a* (***aā***)

Similarly,

√	perfect, 3. pers. sg.	translation
has	*ja-hās-a*	to laugh
hṛ (z.g.)	*ja-hār-a*	to take

You may have noticed that secondary palatalization of the root-final is intact in the perfect forms, for example *yu-yôj-a* or *u-vāc-a*. The perfect ending *a* goes back to a front vowel ie. *e* (see fig. B.2, p. 36). For the root-initial consonant, secondary palatalization happens for the reduplication consonants *i* and *a* ← ie. *e* (!). For *han* ("to hit"), we find

ie. $^*g^whe$-g^whon-*e* (reduplication, *o*-grade)
→ g^we-g^whon-*e* (**DA**)
→ *je-ghon-e* (**SPal**)
→ *ja-ghōn-e* (**L*o***)
→ *ja-ghān-a* (***aā***)

Similarly, consider

√	perfect, 3. pers. sg.	translation
kṛ	*ca-kār-a* ← ie. **k*^{w}*e-k*^{w}*or-e*	to do
kṛt	*ca-kart-a*	to cut
kṣip	*ci-kṣêp-a*	to throw
khan (f.g.)	*ca-khān-a* for "correct" *ca-khan-a* (1)	to dig
gam (f.g.)	*ja-gām-a* ← ie. **g*^{w}*e-g*^{w}*om-e*	to go
ji	*ji-ghāy-a* ← ie. **ghi-ghoy-e*	to conquer

1. *khan* is a laryngeal root ← ie. **khenH* (see PPP *khā-ta*, p. 118). Hence, *ca-khān-a* ← ie. **khe-khonH-e* does not work because syllable *khonH* ends in two consonants and is not open so that **L*o*** does not apply.

Apparently, secondary palatalization spread to other verbs where it did not belong, originally, such as

√	perfect, 3. pers. sg.	translation
krudh	*cu-krôdh-a*	to be angry
kṣubh	*cu-kṣôbh-a*	to be agitated

Here, we have proportional analogy, for example

kṣip	with palatal reduplication:	*ci-kṣêp-a*
just as		
kṣubh	with palatal reduplication:	*cu-kṣôbh-a*

Irregular perfect forms

Some verbs have irregular perfect forms:

√	perfect, 3. pers. sg.	"correct" form	translation
pū	*pu-pāva*	*pu-pav-a* ← ie. **pu-pouH-e*	to clean
bhī	*bi-bhāy-a*	*bi-bhay-a* ← ie. **bhi-bhoiH-e*	to fear
bhū	*ba-bhūv-a*	*bu-bhav-a* ← ie. **bhu-bhouH-e*	to be

where the conditions for **L*o*** (syllables need to be open). On top, *ba-bhūv-a* exhibits irregular reduplication vowel. *bi-bhāy-a* means "he fears", it has no temporal, but a stative meaning. Similarly, *veda* ("he knows") is stative and does not even contain a reduplication.

Note also a few (laryngeal!) verbs with 3. pers. sg. ending *âu* and irregular weak forms:

√	perfect, 3. pers. sg.	translation
dā	*da-d-âu*	to give
dhā	*da-dh-âu*	to set, to place
jñā	*ja-jñ-âu*	to know
pā	*pa-p-âu*	to drink
bhā	*ba-bh-âu*	to shine
mā	*ma-m-âu*	to measure
sthā	*ta-sth-âu* (1)	to stand

1. *ta-sth-âu* does not reduplicate the initial consonant.

C.7.3. Weak forms

Examples for root vowels *i*, *u* or *a*

The weak forms are built with the zero grade. We begin with root vowel *i*:

√	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
kṣip	*ci-kṣêp-a*	*ci-kṣip-us*	to throw
chid	*ci-cchêd-a* (sandhi)	*ci-cchid-us* (sandhi)	to cut
ji	*ji-ghāy-a*	*ji-ghy-us* (***hV***)	to conquer
dviṣ	*di-dvêṣ-a*	*di-dviṣ-us*	to hate
bhid	*bi-bhêd-a*	*bi-bhid-us*	to split
lih	*li-lêh-a*	*li-lih-us*	to lick
viś	*vi-vêś-a*	*vi-viś-us*	to cut
vyadh (f.g.)	*vi-vyādh-a*	*vi-vidh-us*	to pierce

For root vowel *u*, consider these examples

√	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
krudh	*cu-krôdh-a*	*cu-krudh-us*	to be angry
kṣubh	*cu-kṣôbh-a*	*cu-kṣubh-us*	to be agitated
tud	*tu-tôd-a*	*tu-tud-us*	to hit
yuj	*yu-yôj-a*	*yu-yuj-us*	to join
rud	*ru-rôd-a*	*ru-rud-us*	to weep
śru	*śu-śrāv-a* (**Lo**)	*śu-śruv-us* (***V*+*hV***)	to hear
su	*su-ṣāv-a* (**RUKI**, **Lo**)	*su-ṣuv-us* (**RUKI**, ***V*+*hV***)	to press
svap (f.g.)	*su-ṣvāp-a* (**RUKI**, **Lo**)	*su-ṣup-us* (**RUKI**)	to sleep

Finally, here are some examples for roots without halfvowels:

√	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
kṛ	*ca-kār-a* (**Lo**)	*ca-kr-us*	to do
khan (f.g.)	*ca-khān-a*	*ca-khn-us*	to dig
gam (f.g.)	*ja-gām-a* (**Lo**)	*ja-gm-us*	to go
bhṛ	*ba-bhār-a* (**Lo**)	*ba-bhr-us*	to bear
hṛ (f.g.)	*ja-hār-a* (**Lo**)	*ja-hr-us*	to take

Exceptionally, one finds full-grade 3. pers. pl.:

√	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
kṛt	*ca-kart-a*	*ca-kart-us*	to cut
bandh (f.g.)	*ba-bandh-a*	*ba-bandh-us*	to bind
has (f.g.)	*ja-hās-a* (**Lo**)	*ja-has-us*	to laugh

Samprasāraṇa

Here are the verbs with samprasāraṇa. The reduplicative vowel *i* or *u* combines with the same vowel from the zero-grade root to produce *ī* or *ū*, respectively (**MVS**).

√	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
i	*iy-āy-a*	*īy-us*	to go
iṣ	*iy-êṣ-a*	*īṣ-us*	to wish
yaj (f.g.)	*i-yāj-a*	*īj-us*	to sacrifice
vac (f.g.)	*u-vāc-a*	*ūc-us*	to say
vad (f.g.)	*u-vād-a*	*ūd-us*	to say
vap (f.g.)	*u-vāp-a*	*ūp-us*	to sow
vas (f.g.)	*u-vās-a*	*ūṣ-us*	to dwell
vah (f.g.)	*u-vāh-a*	*ūh-us*	to carry

Similarly, one obtains *ā* in *āp-us* from oi. root *āp* ("to obtain") ← ie. $^*h_1ep$ by

ie. $^*h_1e$-h_1p- (reduplication, zero grade)
→ *āp*- (**Lar_V**)

In contrast, there are no sound-law excuses for *ā* in the other three plural (and hence weak) examples:

√ full grade	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
āp	*āp-a*	*āp-us*	to obtain
aś	*āś-a*	*āś-us* ("wrong")	to eat
as	*ās-a*	*ās-us* ("wrong")	to be
ah	*āh-a*	*āh-us* ("wrong")	to say

Perfect with *ê*

Finally, we turn to the sizable number of instances where the perfect seems to be formed without reduplication:

√ in f.g.	pf., 3. pers. sg., par.	pf., 3. pers. pl., par.	pf., 3. pers. pl., ātm.	translation
tan	*ta-tān-a*	*tên-us*		to stretch
naś	*na-nāś-a*	*nêś-us*		to perish
pat	*pa-pāt-a*	*pêt-us*		to fall
bhaj	*ba-bhāj-a*	*bhêj-us*		to worship
man			*mên-ê*	to think
yat			*yêt-ê*	to exert
ram			*rêm-ê*	to enjoy
labh			*lêbh-ê*	to obtain
śap	*śa-śāp-a*	*śêp-us*		to curse
sad	*sa-sād-a*	*sêd-us*		to sit

However, regular reduplication is indeed present in *sad* and *yat*:

ie. **se-sd-* (reduplication, zero grade)
→ *sa-zd-* (***aā***, ***sz*** before voiced consonant)
→ *sêd-* (**CpL*z*** perhaps before consonant + *i*)

and

ie. **ye-it-* (reduplication, zero grade)
→ *yêt-* (**DIPH**)

The other examples cannot be derived in this manner. Here, proportional analogy does the trick. For example,

sad	with *ê* instead of reduplication:	*sêd-us*
just as		
pat	with *ê* instead of reduplication:	*pêt-us*

C.7.4. Conjugation

For *tud* ("to hit"), we have

	$\sqrt{}$*tud* ← ie. **teud*		
	perfect parasmâipada		
	sg.	dual	pl.
1	***tu-tôd-a*** (1)	*tu-tud-i-va* (2)	*tu-tud-i-ma* (2)
2	***tu-tôd-i-tha*** (1)	*tu-tud-a-thus*	*tu-tud-a*
3	***tu-tôd-a*** (1)	*tu-tud-a-tus*	*tu-tud-us*
	perfect ātmanêpada		
	sg.	dual	pl.
1	*tu-tud-ê* (3)	*tu-tud-i-vahê* (4)	*tu-tud-i-mahê* (4)
2	*tu-tud-i-ṣê* (3)	*tu-tud-ā-thê* (6)	*tu-tud-i-dhvê* (5)
3	*tu-tud-ê*	*tu-tud-ā-tê* (6)	*tu-tud-i-rê*

1. Strong forms in parasmâipada sg., as expected.
2. Compare the perfect forms with the imperfect ones: *a-bhar-ā-ma* and *a-bhar-ā-va*.
3. Compare present tense *bhar-ê* and *bhar-a-sê*.
4. Compare present tense *bhar-ā-mahê* and *bhar-ā-vahê*.
5. Compare present tense *bhar-a-dhvê*.
6. Compare present tense *bhar-ê-thê* and *bhar-ê-tê*.

The conjugation for *tud* is similar to the one for *dā* ("to give") with the notable exception of 1. and 3. pers. sg.:

	$\sqrt{}$*dā* ← ie. **deh*$_3$					
	perfect parasmâipada			perfect ātmanêpada		
	sg.	dual	pl.	sg.	dual	pl.
1	*da-d-âu* (!)	*da-d-i-va*	*da-d-i-ma*	*da-d-ê*	*da-d-i-vahê*	*da-d-i-mahê*
2	*da-d-i-tha*	*da-d-a-thus*	*da-d-a*	*da-d-i-ṣê*	*da-d-ā-thê*	*da-d-i-dhvê*
3	*da-d-âu* (!)	*da-d-a-tus*	*da-d-us*	*da-d-ê*	*da-d-ā-tê*	*da-d-i-rê*

C.8. Aorist

C.8.1. General remarks

Aorist is yet another form of past tense. The aorist formation does not use any class signs. All aorists know the augment *a*, but otherwise, a wide range of formations exists. The endings are the secondary ones, roughly speaking. For example, we have these aorist 3. sg. forms:

aorist	√	augm.	redupl.	root.	infix	them. vow.	end.
reduplicated	*pat*	*a*	*pa*	*pt*		*a*	*t*
sigmatic *sa*	*diś*	*a*		*dik*	*ṣ*	*a*	*t*
sigmatic *s*	*yuj*	*a*		*yâuk*	*ṣ*		*ī-t*

The following table offers examples for seven different aorists with one example each:

aorist		√	3. sg.	3. pl.	pp.
thematic		*yuj*	*a-yuj-a-t*	*a-yuj-a-n*	197
reduplicated		*pat*	*a-pa-pt-a-t*	*a-pa-pt-a-n*	197
root		*bhū*	*a-bhū-t*	*a-bhūv-an*	198
sigmatic	*s*	*yuj*	*a-yâuk-ṣ-ī-t*	*a-yâuk-ṣ-us*	201
	sa	*diś*	*a-dik-ṣ-a-t*	*a-dik-ṣ-a-n*	199
	iṣ	*vad*	*a-vad-ī-t*	*a-vad-iṣ-us*	200
	siṣ	*snā*	*a-snā-sī-t*	*a-snā-siṣ-us*	201

C.8.2. Thematic aorist

The thematic aorist is formed by this formula:

augment + zero-grade root + *a* + ending

Here are three examples for the 3. sg.:

thematic aorist	√	augm.	z.g. root	them. vow.	end.
	tuṣ	*a*	*tuṣ*	*a*	*t*
	yuj	*a*	*yuj*	*a*	*t*
	lubh	*a*	*lubh*	*a*	*t*

and a paradigm:

	√*lubh* ← ie. **leubh*, aorist parasmâipada		
	sg.	dual	pl.
1	*a-lubh-a-m*	*a-lubh-ā-va*	*a-lubh-ā-ma*
2	*a-lubh-a-s*	*a-lubh-a-tam*	*a-lubh-a-ta*
3	*a-lubh-a-t*	*a-lubh-a-tām*	*a-lubh-a-n*

The endings are exactly the thematic secondary parasmâipada ones (p. 143).

C.8.3. Reduplicated aorist

The reduplicated aorist is formed by this formula:

augment + reduplicated zero-grade root + *a* + ending

Consider these three examples for the 3. sg.:

reduplicated aorist	√ in f.g.	augm.	redupl.	root	them. vow.	end.
	kath	*a*	*ca*	*kath* (f.g. !)	*a*	*t*
	pat	*a*	*pa*	*pt*	*a*	*t*
	vac	*a*	*va*	*uc*	*a*	*t*

where the last aorist is *a-vôc-a-t* (**MVS**).

Here the parasmâipada paradigm for *muc* that shows difficult lengthening of the reduplication syllable:

	√*muc*, aorist parasmâipada		
	sg.	dual	pl.
1	*a-mū-muc-a-m*	*a-mū-muc-ā-va*	*a-mū-muc-ā-ma*
2	*a-mū-muc-a-s*	*a-mū-muc-a-tam*	*a-mū-muc-a-ta*
3	*a-mū-muc-a-t*	*a-mū-muc-a-tām*	*a-mū-muc-a-n*

In the following ātmanêpada paradigm for *vac*, we have the thematic secondary ātmanêpada endings (p. 144).

	√*vac*, aorist ātmanêpada		
	sg.	dual	pl.
1	*a-vôc-ê*	*a-vôc-ā-vahi*	*a-vôc-ā-mahi*
2	*a-vôc-a-thās*	*a-vôc-êthām*	*a-vôc-a-dhvam*
3	*a-vôc-a-ta*	*a-vôc-êtām*	*a-vôc-a-n-ta*

You need to replace *vôc* by *mū-muc* if you want to know the ātmanêpada for *muc*.

C.8.4. Root aorist

The root aorist obeys the simple formula of

augment + zero-grade or full-grade root + ending

Again three examples for the 3. sg.:

root aorist	√	augm.	root	end.
	dā (f.g. !)	*a*	*dā*	*t*
	bhū	*a*	*bhū*	*t*
	sthā (f.g. !)	*a*	*sthā*	*t*

We begin with the parasmâipada for *dā*:

	$\sqrt{dā}$, aorist parasmâipada		
	sg.	dual	pl.
1	*a-dā-m*	*a-dā-va*	*a-dā-ma*
2	*a-dā-s*	*a-dā-tam*	*a-dā-ta*
3	*a-dā-t*	*a-dā-tām*	*a-d-us*

As observed, on p. 147, secondary athematic endings often have the variant *us* in 3. pers. pl.. This is the case here, also. After all *dā*, **dā-us* and hence **dôs* would have been unrecognizable. Instead, we find *a-d-us*.

Consider, now, the root aorist for *bhū*. Before vowel endings (*am* and *an*, respectively, see 147), ***V*+*hV*** would lead us to expect *bhuv*, but not the attested *bhūv*:

	$\sqrt{bhū}$, aorist parasmâipada		
	sg.	dual	pl.
1	*a-bhūv-am*	*a-bhū-va*	*a-bhū-ma*
2	*a-bhū-s*	*a-bhū-tam*	*a-bhū-ta*
3	*a-bhū-t*	*a-bhū-tām*	*a-bhūv-an*

C.8.5. Sigmatic aorist with *sa*

There are four sigmatic aorists. We begin with the *sa*-aorist. It is formed by

augment + zero-grade root + *s* + *a* + ending

For example, **SIB** yields

sa-aorist	$\sqrt{}$	augm.	root	infix	them. vow.	end.
	diś	*a*	*dik*	*ṣ*	*a*	*t*
	dviṣ	*a*	*dvik*	*ṣ*	*a*	*t*
	viś	*a*	*vik*	*ṣ*	*a*	*t*

The endings are again the expected ones. The parasmâipada paradigm for *diś* is given by

	$\sqrt{diś}$, aorist parasmâipada		
	sg.	dual	pl.
1	*a-dik-ṣ-a-m*	*a-dik-ṣ-ā-va*	*a-dik-ṣ-ā-ma*
2	*a-dik-ṣ-a-s*	*a-dik-ṣ-a-tam*	*a-dik-ṣ-a-ta*
3	*a-dik-ṣ-a-t*	*a-dik-ṣ-a-tām*	*a-dik-ṣ-a-n*

C.8.6. Sigmatic aorist with *iṣ*

We now turn to the *iṣ*-aorist which is not thematic:

augment + full-grade root + *iṣ* + ending

Originally, *iṣ* has been used in seṭ verbs, but this formation spread to other verbs, similar to the future tense. For example,

iṣ-aorist	√	augm.	root	infix	end.
	aś (ātm.)	*a*	*aś*	*iṣ*	*ṭa*
	kamp (ātm.)	*a*	*kamp*	*iṣ*	*ṭa*
	kṛt (par.)	*a*	*kart*	*ī*	*t*
	granth (par.)	*a*	*granth*	*ī*	t
	tan (par.)	*a*	*tan*	*ī*	*t*
	mud (ātm.)	*a*	*môd*	*iṣ*	*ṭa*
	rud (par.)	*a*	*rôd*	*ī*	*t*

where the first entry is *āśiṣṭa*.

The *iṣ*-aorist has a peculiar 2. sg.. Consider, for example,

	√*budh*, aorist parasmâipada		
	sg.	dual	pl.
1	*a-bôdh-iṣ-am*	*a-bôdh-iṣ-va*	*a-bôdh-iṣ-ma*
2	*a-bôdh-ī-s* (1)	*a-bôdh-iṣ-ṭam* (3)	*a-bôdh-iṣ-ṭa* (3)
3	*a-bôdh-ī-t* (2)	*a-bôdh-iṣ-ṭām* (3)	*a-bôdh-iṣ-us* (4)

In general, the endings are the athematic secondary ones. Note, however:

1. *a-bôdh-ī-s* is best explained by *a-bôdh-is-s* plus compensatory lengthening of *i* for simplified *ss* → *s*.

2. Building on the 2. sg., the 3. sg. *a-bôdh-ī-t* results from leveling:

	a-bôdh-iṣ-ṭ	
influenced by	*a-bôdh-ī-s*	with *ī* by secondary ending
turns into	*a-bôdh-ī-t*	with *ī*

   These two singular forms with "*ī* plus secondary ending" are also used in the two remaining aorists (see the two following subsections).

3. **Cer*D***

4. The alternative ending *us* (instead of *(a)n*) is used in the 3. pl.

C.8.7. Sigmatic aorist with *siṣ*

A few 2. class roots ending in *ā* use the *siṣ*-aorist and obey this formula:

augment + root + *siṣ* + ending

We have these examples:

siṣ-aorist	√	augm.	root	infix	end.
	pā	*a*	*pā*	*sī*	*t*
	yā	*a*	*yā*	*sī*	*t*
	snā	*a*	*snā*	*sī*	*t*

The infix *siṣ* is not clearly visible in these sg. forms. Compare, however, the *budh* paradigm above. Here, then, *sī* (rather than *ī*) plus par. secondary ending lead to forms like *a-yā-sī-t* where we might expect **a-yā-siṣ-ṭ*. Perhaps, we have compensatory lengthening in *a-yā-sī-t*? With these remarks, the paradigm for *yā* is transparent:

	√*yā*, aorist parasmâipada		
	sg.	dual	pl.
1	*a-yā-siṣ-am*	*a-yā-siṣ-va*	*a-yā-siṣ-ma*
2	*a-yā-sī-s*	*a-yā-siṣ-ṭam*	*a-yā-siṣ-ṭa*
3	*a-yā-sī-t*	*a-yā-siṣ-ṭām*	*a-yā-siṣ-us*

C.8.8. Sigmatic aorist with *s*

Finally, we turn to the *s*-aorist which is not thematic:

augment + lengthened root + *s* + ending

We have these examples:

s-aorist	√	augm.	root	infix	end.
	kṛ	*a*	*kār*	*ṣ* (2)	*us*
	bandh (f.g.)	*a*	*bhānt* (4)	*s*	*us*
	bhaj (f.g.)	*a*	*bhāk* (1)	*ṣ* (2)	*us*
	tap (f.g.)	*a*	*tāp*	*s*	*us*
	yuj	*a*	*yâuk* (1)	*ṣ* (2)	*us*
	vas (f.g.)	*a*	*vāt* (3)	*s*	*us*
	vah (f.g.)	*a*	*vāk* (1)	*ṣ* (2)	*us*
	śap (f.g.)	*a*	*śāp*	*s*	*us*

1. *s* is voiceless so that we have expected backward assimilation. *k* in *a-vāk-ṣ-us* is due to ie. **veǵh*.

2. **RUKI**

3. **SIB**, similar to future tense *vat-sy-a-ti*.

4. *a-bhānt-s-us* is explained along the same lines as *bhôt-sy-ati* (see p. 38).

In the above table, we have used the 3. pl. forms rather than the 3. sg. ones. Contrasting these forms yields

s-aorist	√	3. sg.	3. pl.
	kṛ	*a-kār-ṣī-t*	*a-kār-ṣ-us*
	bandh (f.g.)	*a-bhānt-sī-t*	*a-bhānt-s-us*
	bhaj (f.g.)	*a-bhāk-ṣī-t*	*a-bhāk-ṣ-us*
	tap (f.g.)	*a-tāp-sī-t*	*a-tāp-s-us*
	yuj	*a-yâuk-ṣī-t*	*a-yâuk-ṣ-us*
	vas (f.g.)	*a-vāt-sī-t*	*a-vāt-s-us*
	vah (f.g.)	*a-vāk-ṣī-t*	*a-vāk-ṣ-us*
	śap (f.g.)	*a-śāp-sī-t*	*a-śāp-s-us*

The difference between sg. and pl. is explained by the *iṣ*- and *siṣ*-aorists presented above. The speakers came to consider *ī* as a possible "thematic vowel" for the two sg. forms and applied them here, were *a-yâuk-ṣ-t* would have produced **a-yâuk* by **CCl**.

The parasmâipada paradigm for *kṛ* is now easy:

	√*kṛ*, aorist parasmâipada		
	sg.	dual	pl.
1	*a-kār-ṣ-am*	*a-kār-ṣ-va*	*a-kār-ṣ-ma*
2	*a-kār-ṣī-s*	*a-kār-ṣ-ṭam*	*a-kār-ṣ-ṭa*
3	*a-kār-ṣī-t*	*a-kār-ṣ-ṭām*	*a-kār-ṣ-us*

The ātmanêpada forms for *śap* are

	√*śap*, aorist ātmanêpada		
	sg.	dual	pl.
1	*a-śap-s-i*	*a-śap-s-vahi*	*a-śap-s-mahi*
2	*a-śap-thās* (1)	*a-śap-s-āthām*	*a-śap-dhvam* (1)
3	*a-śap-ta* (1)	*a-śap-s-ātām*	*a-śap-s-a-ta* (2)

1. **D*z*D** (third line)

2. The athematic ending 3. pl. is regularly *a-ta* from ie. *m̥-to* (or later analogy from similar cases).

D. Grammar: nouns and adverbs

D.1. Nouns: categories

D.1.1. Distribution of weak and strong forms

Nouns whose stem ends in a consonant often distinguish between weak and strong forms. Strong forms typically take the full grade and weak forms the zero grade.In particular, masculine (m.) and feminine (f.) nouns show strong forms in nominative (nom.), vocative (voc.), and accusative (acc.) but not in acc. pl. These three cases are sometimes abbreviated by NVA. Neuter (n.) nouns exhibit strong forms in the pl. forms of NVA cases. All other forms are weak. In fig. D.1 the strong forms are marked.

D.1.2. Characteristics of thematic and athematic nouns

Roughly speaking, thematic and athematic nouns differ in these respects:

	stem ends in	weak/strong	acc. pl. m.	acc. pl. f.	gen. pl.
athem. nouns	a consonant	yes	*as*	*as*	*ām*
them. nouns	a vowel *V*	no	*V̄n* (1)	*V̄s*	*V̄nām* (2)

1. *V̄n* ← *Vns* (**CpL*s***)
2. *V̄nām* ← *VHnōm* (**Lar_*V***)

It also seems that the feminine singular endings are characterized by

	dative	abl./gen.	locative
athem. nouns	*ê*	*as*	*i*
them. nouns	*âi* ← *a* + *ê*	*ās* ← *a* + *as*	*ām*

D.1.3. Athematic nouns

We have quite a few classes of nouns whose stem end in consonants.

◇ one stem, such as *marut* (“wind”) (no weak-strong alternation)

◇ stems on *mant, vant, ant*, such as *bala-vant* (“he who has strength”)

◇ *an*-stems, such as *rāj-an* (“king”)

◇ *in*-stems, such as *yôg-in* (“yogi”) (no weak-strong alternation)

◇ stems in long diphthongs, such as *rāy* (“wealth”) and *glāv* (“moon”)

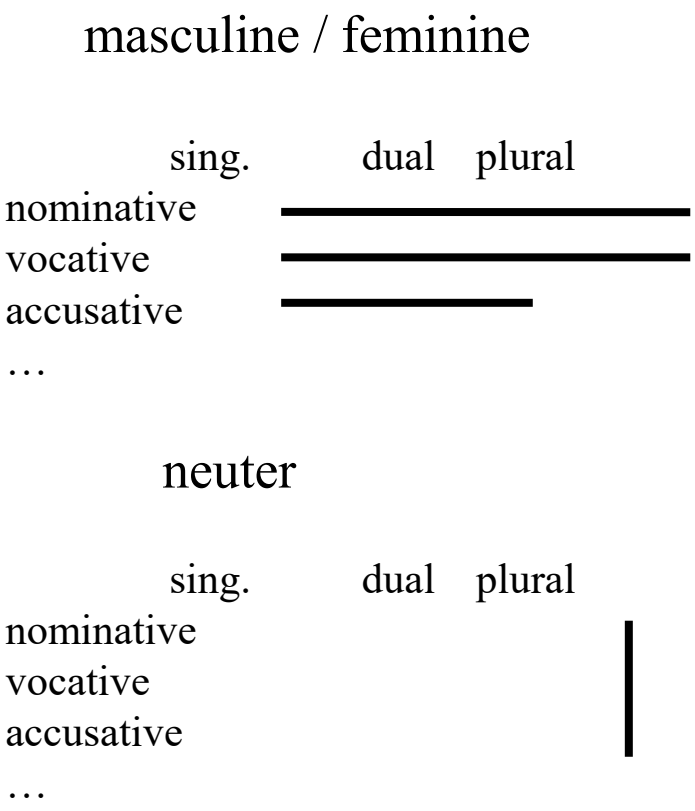

Figure D.1.: Strong forms in consonant-final nouns

D.1.4. Thematic nouns

We have many classes of nouns whose stem ends in vowels or, very rarely, diphthongs. Most of them do not show any weak-strong alternation. Remember the convention for citing nouns given in subsection A.6, pp. 7.

◇ *a*-stems
- *dêva*
- *phalam*

◇ *ā*-stems such as *dêvā*

◇ *i*-stems
- m., such as *muni*
- f., such as *mati*

◇ *u*-stems
- m., such as *guru*
- f., such as *dhênu*

◇ *ī*-stems such as *nadī*

◇ *ū*-stems such as *camū*

D.1.5. In-between nouns

ṛ-stems, such as

◇ m. agent nouns, such as *nê-tar* ("leader")

◇ kinship nouns, such as *pitar* ("father") or *mātar* ("mother")

have characteristics of both athematic and thematic nouns:

	stem ends in	weak/strong	acc. pl. m.	acc. pl. f.	gen. pl.
athem. nouns	*pitar*	yes			
them. nouns	*pitṛ*		*pitṝn*	*mātṝs*	*pitṝṇām*

D.2. Nouns: endings

D.2.1. A few general remarks

Endings found in all declensions

In all declensions, we find

any stem	case	sg.	dual	pl.
	nom.			
	voc.			
	acc.			
	instr.		*-bhyām*	
	dat.		*-bhyām*	*-bhyas*
	abl.		*-bhyām*	*-bhyas*
	gen.		*-ôs*	*-ām*
	loc.		*-ôs*	*-su*

In the following subsections, we point to similarities found across declensions. Thus prepared, we go into individual declensions.

Neutral endings NVA

All n. endings nom., voc., and acc. (NVA) are the same for sg., the same for dual, and the same for pl., respectively. For example, we have

jagat n. ("world")	case	sg.	dual	pl.
	nom.	*jagat*	*jagat-ī* (1)	***jagant-i***
	voc.	*jagat*	*jagat-ī*	***jagant-i***
	acc.	*jagat*	*jagat-ī*	***jagant-i***
	instr.	*jagat-ā*	*jagad-bhyām*	*jagad-bhis*

or

vanam ("forest")	case	sg.	dual	pl.
	nom.	*van-a-m*	*van-ê* (1)	*van-āni*
	voc.	*van-a-m*	*van-ê*	*van-āni*
	acc.	*van-a-m*	*van-ê*	*van-āni*
	instr.	*van-āya*	*van-ā-bhyām*	*vanâis*

1. $\bar{\imath}$ from ie. dual ending ih_2 is typical for dual NVA. Compare *jagatī* with *vanê* ← *vana-ī* (**MVS**).

s in masculine and feminine nominative singular

Originally, *s* was the ie. marker for m. and f. nom. sg.. When this *s* was joined to a final consonant, we often observe compensatory lengthening (**CpL*s***). Note that n. sg. had no special ending. Thus, the following examples concern only m. and f. nouns:

**bala-vant-s* → **bala-vann-s* → oi. *bala-vān*
**su-manas-s* → oi. *su-manās*
**gir-s* → oi. *gīr*

Unfortunately, this model does not always work:

$$\begin{array}{lcl} {}^{*}gach\text{-}ant\text{-}s & \rightarrow & \text{oi. } gach\text{-}an \text{ } (\mathbf{CCl}) \\ {}^{*}r\bar{a}j\text{-}an\text{-}s & \rightarrow & \text{oi. } r\bar{a}j\bar{a} \\ {}^{*}y\hat{o}g\text{-}in\text{-}s & \rightarrow & \text{oi. } y\hat{o}g\bar{\imath} \end{array}$$

Nominative and vocative plural

In all declensions, the voc. pl. is the same as the nom. pl..

D.2.2. Locative singular

Locative singular with *i*

Across many declensions, both thematic and athematic, the loc. sg. is expressed by *i* (the here-and-now particle). For example, we have

◇ stem *tvad* pers. pronoun ("you") with loc. sg. *tvayi*

◇ stem *mad* pers. pronoun ("I") with loc. sg. *mayi*

◇ (stem) *manas* n. ("mind") with loc. sg. *manas-i* where

- "stem" indicates that *manas* is the basis from which (many) other forms are derived and,
- since "stem" is put in brackets, *manas* is, at the same time, the nom. sg..

◇ (stem) *marut* m. ("wind") with loc. sg. *marut-i*

◇ stem *rāj-an* m. ("king") with loc. sg. *rāj-ñ-i* or *rāj-an-i*

◇ stem *hast-in* m. ("elephant") with loc. sg. *hast-in-i*

In the a-declension m. or n., we apply **MVS** and find

◇ *dêv-a* ("god") with loc. sg. *dêv-ê* ← **dêv-a-i*

◇ *van-a-m* ("forest") with loc. sg. *van-ê* ← **van-a-i*

Locative singular with *âu*

âu occurs less often. Consider the m. nouns

◇ stem *gur-u* m. ("teacher") with loc. sg. *gur-âu*

◇ stem *mat-i* f. ("mind") with loc. sg. *mat-âu* (and also with *-y-ām*)

◇ stem *mun-i* m. ("wise man") with loc. sg. *mun-âu*

◇ stem *pat-i* m. ("husband") with loc. sg. *pat-y-âu*

Locative singular with *ām*

Feminine nouns tend to exhibit loc. ending *ām*:

◇ (stem) *nad-ī* ("river") with loc. sg. *nad-y-ām*

◇ (stem) *lat-ā* ("vine") with loc. sg. *lat-ā-y-ām*

◇ stem *vadh-ū* ("bride") with loc. sg. *vadh-v-ām*

Some f. nouns on *i* and *u* take the ending from the feminine in long vowels, i.e., from *vadh-ū*/*nad-ī*:

◇ (stem) *dhên-u* f. ("cow") with loc. sg. *dhên-v-ām*

◇ (stem) *mat-i* f. ("mind") with loc. sg. *mat-y-ām*

or from the corresponding m. nouns in short vowels, i.e., from *gur-u*/*mun-i*:

◇ (stem) *dhên-u* f. ("cow") with loc. sg. *dhên-âu*

◇ (stem) *mat-i* f. ("mind") with loc. sg. *mat-âu*

D.2.3. Locative pl. with *su*

The *su*-locative is to be found nearly everywhere and often gives rise to **RUKI**:

◇ stem *gur-u* m. ("teacher") with loc. pl. *gur-u-ṣu*

◇ stem *tvad* pers. pronoun ("you") with loc. pl. *yuṣmā-su*

◇ (stem) *nad-ī* ("river") with loc. pl. *nad-ī-ṣu*

◇ stem *pat-i* m. ("husband") with loc. pl. *pat-i-ṣu*

◇ stem *mat-i* f. ("mind") with loc. pl. *mat-i-ṣu*

◇ stem *mad* pers. pronoun ("I") with loc. pl. *asmā-su*

◇ (stem) *manas* n. ("mind") with loc. pl. *manas-su*/*manaḥ-su*

◇ (stem) *marut* m. ("wind") with loc. pl. *marut-su*

◇ stem *mun-i* m. ("wise man") with loc. pl. *mun-i-ṣu*

◇ stem *rāj-an* m. ("king") with loc. pl. *rāj-a-su*

◇ (stem) *lat-ā* ("vine") with loc. pl. *lat-ā-su*

◇ stem *vadh-ū* ("bride") with loc. pl. *vadh-ū-ṣu*

◇ stem *hast-in* m. ("elephant") with loc. pl. *hast-i-ṣu*

In the a-declension m. or n., we find *ê* instead of thematic *a*:

◇ *dêv-a* ("god") with loc. pl. *dêv-ê-ṣu*

◇ *van-a-m* ("forest") with loc. pl. *van-ê-ṣu*

D.2.4. Genitive plural

There two different gen. forms:

◇ *ām* for athematic nouns

◇ *nām* for thematic nouns including those on *ṛ*. Since *nām* lengthens the thematic vowels, *nām* may go back to ie. *Hnōm* (**Lar_V**).

Thus, we have the athematic gen. plurals:

◇ (stem) *manas* n. ("mind") with gen. pl. *manas-ām*

◇ (stem) *marut* m. ("wind") with gen. pl. *marut-ām*

◇ stem *rāj-an* m. ("king") with gen. pl. rāj-ñ-ām with forward assimilation

◇ stem *hast-in* m. ("elephant") with gen. pl. *hast-in-ām*

and the thematic gen. plurals

◇ stem *gur-u* m. ("teacher") with gen. pl. *gur-ū-ṇām*

◇ stem *dêv-a* ("god") with gen. pl. *dêv-ā-nām*

◇ (stem) *nad-ī* ("river") with gen. pl. *nad-ī-nām* (where *ī* is long anyway)

◇ stem *pat-i* m. ("husband") with gen. pl. *pat-ī-nām*

◇ stem *mat-i* f. ("mind") with gen. pl. *mat-ī-nām*

◇ stem *mun-i* m. ("wise man") with gen. pl. *mun-ī-nām*

◇ (stem) *lat-ā* ("vine") with gen. pl. *lat-ā-nām* (where *ā* is long anyway)

◇ stem *vadh-ū* ("bride") with gen. pl. *vadh-ū-nām* (where *ū* is long anyway)

◇ *van-a-m* ("forest") with gen. pl. *van-ā-nām*

Pronouns are often different:

◇ stem *tad* 3. pers. pronoun ("he, she, that") with gen. pl.
- *têṣām* n.
- *têṣām* m. und n.

◇ stem *tvad* pers. pronoun ("you") with gen. pl. *yuṣmā-kam*

◇ stem *mad* pers. pronoun ("I") with gen. pl. *asmā-kam*

D.2.5. Accusatives with *m*

For the m. nouns, observe

		singular		plural	
		thematic	athematic	thematic	athematic
nom.		*-*o*-*s* → -*a*-*s*	*-*s* → ∅	*-*o*-*es* → *-*ōs* → -*ās*	*-*es* → -*as*
	example	*dêv-a-s* (1)	*marut* (1)	*dêv-ās* (3)	*marut-as* (3)
acc.		*-*o*-*m* → -*a*-*m*	analogy	*-*ons* → -*ān* (4)	*-*ns* → -*as*
	example	*dêv-a-m* (2)	*marut-am* (2)	*dêv-ān* (4)	*marut-as* (4)

1. Nom. sg. of both m. (here) and f. are characterized by *s* which
   - ◇ is clearly seen in thematic nouns such as *dêv-a-s*, but
   - ◇ is often lost in athematic nouns due to **CCl**, for example *marut-s* → *marut*
2. Acc. sg. m. (here) and f. are characterized by *m*. *marutam* borrows thematic vowel in oder to avoid unrecognizable **maruta* ← *marutm̊*. Just consider an analogy such as

vāt-a-s ("wind")	with acc. sg.:	*vāt-am*
just as		
marut ("wind")	with acc. sg.:	*marut-am*

3. The nom. pl. forms can be explained by

   marut-as ← stem + ie. pl. marker *e* + ie. nom. marker *s*
   dêv-ās ← stem + ie. them. *o* + ie. pl. marker *e* + ie. nom. marker *s*

4. The acc. pl. forms are derived by

   marut-as ← stem + ie. acc. marker *n̊* + ie. pl. marker *s*
   dêv-ān ← stem + ie. them. *o* + ie. acc. marker *n* + ie. pl. marker *s*

   where *-*ons* → -*ān* follows from **CpL***s*. Note that the *s* is still present in the sandhi rule described on p. 40.

D.3. Nouns: weak and strong forms

D.3.1. Introductory remark and overview

Most nouns that we now look at differentiate between strong and weak forms. We deal with the following groups of nouns:

- ◇ one-stem nouns like *marut* ("wind"), *samrāj* ("ruler"), *vāc* ("voice, word"), *kāma-duh* ("wish-granting cow"), and *a-budh* ("fool") in the following subsection
- ◇ stems on *ant* like *bala-vant* ("he who has strength"), *mahant* ("great"), *bhar-a-nt* (a pres. part.), *jagat* ("world"), and *bhav-ant* ("your honor") on pp. 217
- ◇ *an*-stems like m. *rāj-an* ("king"), n. *nām-an* ("name"), and n. *karm-an* ("deed") on pp. 225
- ◇ *in*-stems like *yôg-in* ("yogi") and *tapas-vin* ("ascetic") on pp. 229
- ◇ m. nouns like *nê-tar* ("leader") on pp. 231
- ◇ kinship nouns like *pitar* ("father") and *mātar* ("mother") on pp. 232
- ◇ stems in long diphthongs like *rāy* ("wealth") and *glāv* ("moon") on pp. 234
- ◇ f. *ī*- and *ū*- stems like *nadī* ("river"), *vadhū* ("bride"), *bhū* ("earth"), *dhī* ("intellect"), and *strī* ("woman") together with the two m. (!) compounds *su-dhī* ("intelligent") and *prati-bhū* ("guarantor") on pp. 235
- ◇ *i*- and *u*-stems like m. *muni* ("wise man"), f. *mati* ("mind"), m. *guru* ("teacher"), f. *dhênu* ("cow"), n. *madh-u* ("honey") and m. *pati* ("husband") on pp. 239
- ◇ n. *ṛ*-stems like *gant-ṛ* on pp. 244

D.3.2. One stem, only

marut

Some nouns have one stem only, i.e., they do distinguish strong and weak forms. An example is provided by the word for "wind":

marut	case	sg.	dual	pl.
	nom.	*marut* (1)	*marut-âu* (9)	*marut-as* (6, 7)
	voc.	*marut* (2)	*marut-âu* (9)	*marut-as* (6, 7)
	acc.	*marut-am* (3)	*marut-âu* (9)	*marut-as* (6, 7)
	instr.	*marut-ā* (4)	*marud-bhyām* (10, 11)	*marud-bhis* (10, 12)
	dat.	*marut-ê* (5)	*marud-bhyām* (10, 11)	*marud-bhyas* (10, 11)
	abl.	*marut-as* (6)	*marud-bhyām* (10, 11)	*marud-bhyas* (10, 11)
	gen.	*marut-as* (6)	*marut-ôs* (11)	*marut-ām* (11)
	loc.	*marut-i* (8)	*marut-ôs* (11)	*marut-su* (11)

1. Nom. sg., m. and f., are usually characterized by *s*. Here, we have *marut-s* → *marut* due to **CCl**.
2. As is the case here, the voc. often equals the stem.

3. The acc. sg. marker is *m* in many declensions. Here, *a* is borrowed from thematic declensions in order to avoid *marut-a*.

4. *ā* is the instr. sg. marker in many other declensions, too.

5. *ê* is the instr. sg. marker in many other declensions, too.

6. We find *as* in
   - ◇ abl. and gen. sg. and
   - ◇ NVA pl.

   This is often the case in athematic declensions, m. (as here) and f..

7. For the pl. *marut-as* forms, see pp. 210.

8. *i* is the typical loc. sg. marker in athematic declensions for all three genders.

9. *âu* is the typical ending for NVA dual in athematic declensions for m. and f.. It also shows in m. *a*-declension (*dêv-âu*) and most personal pronouns like *t-âu*, *sarv-âu*.

10. *t* is made voiced before voiced *b* in some dual and pl. cases.

11. Some forms shown in *marut* are seen in every declension whatsoever (p. 205):
    - ◇ dual instr. through abl. *bhyām*
    - ◇ dual gen. and loc. *ôs*
    - ◇ pl. dat. and abl. *bhyas*
    - ◇ pl. gen. *ām* (for athematic nouns, while *nām* is seen in thematic ones as in *dêvānām*)
    - ◇ pl. loc. *su*

12. *bhis* is very typical for instr. pl. for any kind of declensions. (However, m. and n. *a*-declension use *âis* instead, see *dêv-âis*, *van-âis*. The same holds for most personal pronouns where *t-âis*, *sarv-âis* are both m. and n..)

The *marut* pattern holds for m. and f. nouns or adjectives, such as

	stem	nom. sg.	instr. pl.	translation
like *marut*	*paśu-gup*	*paśu-gup*	*paśu-gub-bhis*	protector of animals
	sarit	*sarit*	*sarid-bhis*	river
	sarva-śak	*sarva-śak*	*sarva-śag-bhis*	all-rounder

manas

Similar to *marut* are one-stem neuter nouns like *manas* or *havis*.

manas n.	case	sg.	dual	pl.
	nom.	*manas* (1)	*manas-ī* (2)	*manāṃs-i* (3)
	voc.	*manas* (1)	*manas-ī* (2)	*manāṃs-i* (3)
	acc.	*manas* (1)	*manas-ī* (2)	*manāṃs-i* (3)
	instr.	*manas-ā* (2)	*mano-bhyām* (4)	*mano-bhis* (4)
	dat.	*manas-ê* (2)	*mano-bhyām* (4)	*mano-bhyas* (4)
	abl.	*manas-as* (2)	*mano-bhyām* (4)	*mano-bhyas* (4)
	gen.	*manas-as* (2)	*manas-ôs* (2)	*manas-ām* (2)
	loc.	*manas-i* (2)	*manas-ôs* (2)	*manas-su/manaḥ-su* (5)

1. The stem *manas* serves as NVA singular.

2. Building on the stem, many forms follow the *marut* pattern (p. 211).

3. NVA pl. is special.

4. The sandhi rule applied is similar to **CpL*z***, but note that the change is not a word-final one.

5. Two sandhi variants.

With *su* prefixed, one obtains the bahuvrīhi *su-manas* ("good-hearted man/woman"). Most endings are the same, but some acknowledge male/female, rather than neuter endings:

su-manas m.	case	sg.	dual	pl.
	nom.	*su-manās* (1)	*su-manas-âu* (2)	*su-manas-as* (2)
	voc.	*su-manas* (2)	*su-manas-âu* (2)	*su-manas-as* (2)
	acc.	*su-manas-am* (2)	*su-manas-âu* (2)	*su-manas-as* (2)
	instr.	*su-manas-ā* (3)	*su-mano-bhyām* (3)	*su-mano-bhis* (3)

1. Nom. sg. *su-manās* is from su-manas-s by **CpL*s***.

2. These endings are just like in *marut*.

3. Instrumental and the other endings do not differ from the neuter endings in *manas*.

Now, turn to *havis*.

havis n.	case	sg.	dual	pl.
	nom.	*havis* (1)	*haviṣ-ī* (2)	*havīṃṣ-i* (3)
	voc.	*havis* (1)	*haviṣ-ī* (2)	*havīṃṣ-i* (3)
	acc.	*havis* (1)	*haviṣ-ī* (2)	*havīṃṣ-i* (3)
	instr.	*haviṣ-ā* (2)	*havir-bhyām* (4)	*havir-bhis* (4)
	dat.	*haviṣ-ê* (2)	*havir-bhyām* (4)	*havir-bhyas* (4)
	abl.	*haviṣ-as* (2)	*havir-bhyām* (4)	*havir-bhyas* (4)
	gen.	*haviṣ-as* (2)	*haviṣ-ôs* (2)	*haviṣ-ām* (2)
	loc.	*haviṣ-i* (2)	*haviṣ-ôs* (2)	*haviṣ-su/haviḥ-su* (5)

1. The stem *havis* serves as NVA singular.

2. Building on the stem, many forms follow the *marut* pattern (p. 211). **RUKI**.

3. NVA pl. is special, compare *manāṃs-i*. **RUKI**

4. **Vis**

5. Two sandhi variants.

Consider, finally, *āyus*:

āyus n.	case	sg.	dual	pl.
	nom.	*āyus* (1)	*āyuṣ-ī* (2)	*āyūṃṣ-i* (3)
	voc.	*āyus* (1)	*āyuṣ-ī* (2)	*āyūṃṣ-i* (3)
	acc.	*āyus* (1)	*āyuṣ-ī* (2)	*āyūṃṣ-i* (3)
	instr.	*āyuṣ-ā* (2)	*āyur-bhyām* (4)	*āyur-bhis* (4)
	dat.	*āyuṣ-ê* (2)	*āyur-bhyām* (4)	*āyur-bhyas* (4)
	abl.	*āyuṣ-as* (2)	*āyur-bhyām* (4)	*āyur-bhyas* (4)
	gen.	*āyuṣ-as* (2)	*āyuṣ-ôs* (2)	*āyuṣ-ām* (2)
	loc.	*haviṣ-i* (2)	*āyuṣ-ôs* (2)	*āyuḥ-su*

1. The stem *āyus* serves as NVA singular.

2. Most forms follow the *havis* pattern above.

3. NVA pl. is special, compare *havīṃṣ-i*.

4. **Vis**

Restrictions on word-final consonants (AFP)

According to **AFP** (pp. 45), the following word-final consonants are disallowed:

◇ voiced stops

◇ aspirated stops

◇ palatals *c* (a stop) and *ś*

◇ aspirate *h*

Mostly, the "closest" unvoiced and unaspirated stop is taken instead. Since *c* is disallowed, it is changed into *k* or *ṭ* instead, and so are *j*, *ś*, and *h*. Taking these rules into account, we obtain paradigms close to the one for *marut*. We present *samrāj* m. ("ruler") and *vāc* f. ("voice, word").

For *samrāj*, we find

samrāj m.	case	sg.	dual	pl.
	nom.	*samrāṭ* (2)	*samrāj-âu* (1)	*samrāj-as* (1)
	voc.	*samrāṭ* (2)	*samrāj-âu* (1)	*samrāj-as* (1)
	acc.	*samrāj-am* (1)	*samrāj-âu* (1)	*samrāj-as* (1)
	instr.	*samrāj-ā* (1)	*samrāḍ-bhyām* (3)	*samrāḍ-bhis* (3)
	dat.	*samrāj-ê* (1)	*samrāḍ-bhyām* (3)	*samrāḍ-bhyas* (3)
	abl.	*samrāj-as* (1)	*samrāḍ-bhyām* (3)	*samrāḍ-bhyas* (3)
	gen.	*samrāj-as* (1)	*samrāj-ôs* (1)	*samrāj-ām* (1)
	loc.	*samrāj-i* (1)	*samrāj-ôs* (1)	*samrāṭ-su* (3)

1. The stem *samrāj* occurs before the vowel endings.

2. Unvoiced *samrāṭ* is seen in word-final position (nom. and voc. sg.).

3. *Samrāḍ-bhyām* and *samrāt-su* seem instances of backward assimilation, but not from the stem *samrāj*, but rather from nom. *samrāṭ*. In particular, we should not expect *samrāṭ-su* from *samrāj-su* which would turn into n.at. *samrāk-ṣu* by **SIB**.

Similar to *samrāj*, we obtain

vāc f.	case	sg.	dual	pl.
	nom.	*vāk* (2)	*vāc-âu* (1)	*vāc-as* (1)
	voc.	*vāk* (2)	*vāc-âu* (1)	*vāc-as* (1)
	acc.	*vāc-am* (1)	*vāc-âu* (1)	*vāc-as* (1)
	instr.	*vāc-ā* (1)	*vāg-bhyām* (3)	*vāg-bhis* (3)
	dat.	*vāc-ê* (1)	*vāg-bhyām* (3)	*vāg-bhyas* (3)
	abl.	*vāc-as* (1)	*vāg-bhyām* (3)	*vāg-bhyas* (3)
	gen.	*vāc-as* (1)	*vāc-ôs* (1)	*vāc-ām* (1)
	loc.	*vāc-i* (1)	*vāc-ôs* (1)	*vāk-ṣu* (4)

1. The stem *vāc* is l.gr. from *vac* ← ie. *vek*^{w}. By **SPal** or levelling, one finds *vāc* before vowel endings (some of which have to be front vowel endings).

2. Regularly, **AFP** leads to *vāk* in absolute final position.

3. Backwardly assimilated *g* before voiced endings.

4. **BA** and **RUKI**

Along similar lines, **AFP** implies

	stem	nom. sg.	instr. pl.	translation
with *c* → *k*	*ṛc*	*ṛk*	*ṛg-bhis*	hymn, verse
	tvac	*tvak*	*tvag-bhis*	skin
	śuc	*śuk*	*śug-bhis*	grief
with *j* → *k*	*vaṇij*	*vaṇik*	*vaṇig-bhis*	merchant
	bhiṣaj	*bhiṣak*	*bhiṣag-bhis*	doctor
with *ś* → *k*	*diś*	*dik*	*dig-bhis*	direction

and

	stem	nom. sg.	instr. pl.	translation
with *d* → *t*	*dṛṣad*	*dṛṣat*	*dṛṣad-bhis*	stone
	vêda-vid	*vêda-vit*	*vêda-vid-bhis*	Veda knower
with *ś/ṣ/h* → *ṭ*	*dviṣ*	*dviṭ*	*dviḍ-bhis*	enemy
	pari-vrāj	*pari-vrāṭ*	*pari-vrāg-bhis*	mendicant
	prā-vṛṣ	*prā-vṛt*	*prā-vṛḍ-bhis*	rain period
	madhu-lih	*madhu-liṭ*	*madhu-liḍ-bhis*	honey sucker
	viś	*viṭ*	*viḍ-bhis*	merchant-caste person

Interesting declensions arise from Grassmann's law and from instances where it is **not** applied, as we have also seen in future forms on pp. 104. Examples are provided by *kāma-duh* f. ("wish-granting cow") or *a-budh* m. ("fool"). The first one yields

kāma-duh f.	case	sg.	dual	pl.
	nom.	*kāma-dhuk* (2, 3)	*kāma-duh-âu* (1)	*kāma-duh-as* (1)
	voc.	*kāma-dhuk* (2, 3)	*kāma-duh-âu* (1)	*kāma-duh-as* (1)
	acc.	*kāma-duh-am* (1)	*kāma-duh-âu* (1)	*kāma-duh-as* (1)
	instr.	*kāma-duh-ā* (1)	*k.-dhug-bhyām* (2, 4)	*k.-dhug-bhis* (2, 4)
	dat.	*kāma-duh-ê* (1)	*k.-dhug-bhyām* (2, 4)	*k.-dhug-bhyas* (2, 4)
	abl.	*kāma-duh-as* (1)	*k.-dhug-bhyām* (2, 4)	*k.-dhug-bhyas* (2, 4)
	gen.	*kāma-duh-as* (1)	*kāma-duh-ôs* (1)	*kāma-duh-ām* (1)
	loc.	*kāma-duh-i* (1)	*kāma-duh-ôs* (1)	*kāma-dhuk-ṣu* (2, 5)

1. By **DA**, we obtain the stem *kāma-duh* where the second part originates from ie. **dheugh* (*h* due to **SPal** before front vowels or levelling).

2. Ie. **dh* is retained in forms where *gh* was replaced by unaspirated (!) velar before a consonant. Hence, **DA** does not apply.

3. *k* in word-final position (**AFP**)

4. *g* before voiced endings (**BA**)

5. *k* before loc. pl. ending voiceless (**BA**) *su* or, indeed, *ṣu* by **RUKI**

Turning to the second example where Grassmann's law and its undoing play a role, we obtain

a-budh	case	sg.	dual	pl.
	nom.	*a-bhut* (2, 3)	*a-budh-âu* (1)	*a-budh-as* (1)
	voc.	*a-bhut* (2, 3)	*a-budh-âu* (1)	*a-budh-as* (1)
	acc.	*a-budh-am* (1)	*a-budh-âu* (1)	*a-budh-as* (1)
	instr.	*a-budh-ā* (1)	*a-bhud-bhyām* (2, 4)	*a-bhud-bhis* (2, 4)
	dat.	*a-budh-ê* (1)	*a-bhud-bhyām* (2, 4)	*a-bhud-bhyas* (2, 4)
	abl.	*a-budh-as* (1)	*a-bhud-bhyām* (2,)	*a-bhud-bhyas* (2, 4)
	gen.	*a-budh-as* (1)	*a-budh-ôs* (1)	*a-budh-ām* (1)
	loc.	*a-budh-i* (1)	*a-budh-ôs* (1)	*a-bhut-su* (2, 5)

1. By **DA**, we obtain the stem *a-budh* where the second part originates from ie. **bheudh*.

2. Ie. **bh* is retained in forms where *dh* was replaced by unaspirated (!) dental before a consonant. Hence, **DA** does not apply.

3. *t* in word-final position (**AFP**)

4. *d* before voiced endings (**BA**)

5. *t* before loc. pl. ending voiceless (**BA**) *su*

D.3.3. Stems on *mant, vant, ant, ans*

bala-vant etc.

Stems on *mant, vant*, or *ant* are very common. Consider the paradigm for *bala-vant* m. ("he who has strength") below. The strong-weak alternation concerns the suffix. Compare

◇ the strong suffix *vant* with

◇ the weak suffix $v\underset{\circ}{n}t \rightarrow vat$.

bala-vantm.	case	sg.	dual	pl.
	nom.	***bala-vān*** (1)	***bala-vant-âu***	***bala-vant-as*** (2)
	voc.	***bala-van*** (3)	***bala-vant-âu***	***bala-vant-as***
	acc.	***bala-vant-am***	***bala-vant-âu***	*bala-vat-as*
	instr.	*bala-vat-ā*	*bala-vad-bhyām* (4)	*bala-vad-bhis* (4)
	dat.	*bala-vat-ê*	*bala-vad-bhyām* (4)	*bala-vad-bhyas* (4)
	abl.	*bala-vat-as*	*bala-vad-bhyām* (4)	*bala-vad-bhyas* (4)
	gen.	*bala-vat-as*	*bala-vat-ôs*	*bala-vat-ām*
	loc.	*bala-vat-i*	*bala-vat-ôs*	*bala-vat-su*

1. *bala-vā-n* is an instance of compensatory lengthening:

   CpL*s* oi. *VCs* → oi. $\bar{V} + C$

   i.e., we have

   **bala-vant-s* → oi. **bala-vānt* (**CpL*s***) → oi. *bala-vān* (**AFP**)

2. Forms like *bala-vant-as* are regular strong forms.

3. The sg. voc. *bala-van* is the stem, simplified by **CCl**.

4. *bala-vad-bhis* exhibits backward assimilation.

The n. forms typically show strong froms in pl. NVA:

bala-vant n.	case	sg.	dual	pl.
	nom.	*bala-vat*	*bala-vat-ī*	***bala-vant-i***
	voc.	*bala-vat*	*bala-vat-ī*	***bala-vant-i***
	acc.	*bala-vat*	*bala-vat-ī*	***bala-vant-i***
	instr.	*bala-vat-ā*	*bala-vad-bhyām*	*bala-vad-bhis*
	dat.	*bala-vat-ê*	*bala-vad-bhyām*	*bala-vad-bhyas*
	abl.	*bala-vat-as*	*bala-vad-bhyām*	*bala-vad-bhyas*
	gen.	*bala-vat-as*	*bala-vat-ôs*	*bala-vat-ām*
	loc.	*bala-vat-i*	*bala-vat-ôs*	*bala-vat-su*

From instrumental onwards, the neuter forms equal the masculine ones. Remember also:

n. dual NVA = f. sg. nom.

i.e., we have f. sg. nom. (and stem) *bala-vat-ī*.

Past active participles (PAP) like *ga-ta-vant* and pronomial adjectives like *tā-vant* ("so much") are formed like *bala-vant*.

mahant

The adjective *mahant* ("great") also belongs to this group. We plot the paradigm for masculine:

mah-ant m.	case	sg.	dual	pl.
	nom.	***mah-ān*** (1)	***mah-ānt-âu*** (3)	***mah-ānt-as*** (3)
	voc.	***mah-an*** (2)	***mah-ānt-âu*** (3)	***mah-ānt-as*** (3)
	acc.	***mah-ānt-am*** (3)	***mah-ānt-âu*** (3)	*mah-at-as*
	instr.	*mah-at-ā*	*mah-ad-bhyām*	*mah-ad-bhis*
	dat.	*mah-at-ê*	*mah-ad-bhyām*	*mah-ad-bhyas*
	abl.	*mah-at-as*	*mah-ad-bhyām*	*mah-ad-bhyas*
	gen.	*mah-at-as*	*mah-at-ôs*	*mah-at-ām*
	loc.	*mah-at-i*	*mah-at-ôs*	*mah-at-su*

1. The nom. sg. m. *mah-ān* ← *mah-ant-s* shows compensatory lengthening (regular as in *bala-vān* by pp. 50).

2. Voc. sg. m. *mah-an* is regular: stem minus **CCl**.

3. Forms like *mah-ānt-as* are irregular. It seems that *ā* in the second syllable of nom. sg. m. migrated to all strong froms (leveling) except voc. sg. m..

Indeed, the migration of *ā* just mentioned also holds for the neuter paradigm:

bala-vant n.	case	sg.	dual	pl.
	nom.	*mah-at*	*mah-at-ī*	***mah-ānt-i***
	voc.	*mah-at*	*mah-at-ī*	***mah-ānt-i***
	acc.	*mah-at*	*mah-at-ī*	***mah-ānt-i***
	instr.	from here like masculine		

Finally, I like to mention f. sg. nom. *mahat-ī* (like n. dual NVA).

Present participles, general remarks

The strong form of any present participle (pres. part.) can be found by looking at the 3. person pl. present tense:

			pres. part., m. nom.	
class	√	3. pers. pl. pres. tense	singular	plural
1	*bhṛ*	*bhar-ant-i*	*bhar-an*	*bhar-ant-as*
6	*tud*	*tud-ant-i*	*tud-an*	*tud-ant-as*
3	*dā*	*dad-at-i*	*dad-at*	*dad-at-as*
5	*śru*	*śṛṇv-ant-i*	*śṛṇv-an*	*śṛṇv-ant-as*

Present participle like *bharant*

The weak-strong distribution is clearly seen in the masculine paradigm. All these forms build on the full grade of the verb. The strong-weak alternation concerns the suffix:

◇ The strong forms use the suffix *ant* while

◇ the weak forms have the same suffix without the vowel, i.e., $\underset{\circ}{nt} \rightarrow at$.

bhar-ant m.	case	sg.	dual	pl.
	nom.	***bhar-an*** (1)	***bhar-ant-âu***	***bhar-ant-as*** (2)
	voc.	***bhar-an*** (3)	***bhar-ant-âu***	***bhar-ant-as***
	acc.	***bhar-ant-am***	***bhar-ant-âu***	*bhar-at-as*
	instr.	*bhar-at-ā*	*bhar-ad-bhyām* (4)	*bhar-ad-bhis* (4)
	dat.	*bhar-at-ê*	*bhar-ad-bhyām* (4)	*bhar-ad-bhyas* (4)
	abl.	*bhar-at-as*	*bhar-ad-bhyām* (4)	*bhar-ad-bhyas* (4)
	gen.	*bhar-at-as*	*bhar-at-ôs*	*bhar-at-ām*
	loc.	*bhar-at-i*	*bhar-at-ôs*	*bhar-at-su*

1. *bhar-a-n* goes back to *bhar-a-nt-s* in line with **CCl**. However, one might have expected compensatory lengthening due to **CpL*s*** (compare *bala-vā-n*) above.

2. Forms like *bhar-ant-as* are regular strong forms.

3. The sg. voc. *bhar-an* is the stem, simplified by **CCl**.

4. **BA**

I now turn to the neuter paradigm. It does not fully conform to the distribution indicated in fig. D.1, p. 204. Below, you see strong forms in dual NVA although they should be weak:

bhar-ant n.	case	sg.	dual	pl.
	nom.	*bhar-at*	***bhar-ant-ī*** (!)	***bhar-ant-i***
	voc.	*bhar-at*	***bhar-ant-ī*** (!)	***bhar-ant-i***
	acc.	*bhar-at*	***bhar-ant-ī*** (!)	*bhar-at-as*
	instr.	from here like masculine		

Again, we have

f. sg. nom. = n. dual NVA = *bhar-ant-ī*

Present participles with *bala-vant* formation

Two interesting pres. part. show the pattern of *bala-vant* rather than that of *bhar-ant*. Firstly, the regular distribution (weak dual n.) is shown by *jagat* n. ("world") which is the present participle of the 3. class verb *gā, ji-gā-ti* ("to go"):

ja-g-ant n.	case	sg.	dual	pl.
	nom.	*ja-g-at*	*ja-g-at-ī*	***ja-g-ant-i***
	voc.	*ja-g-at*	*ja-g-at-ī*	***ja-g-ant-i***
	acc.	*ja-g-at*	*ja-g-at-ī*	***ja-g-ant-i***
	instr.	*ja-g-at-ā*	*ja-g-ad-bhyām*	*ja-g-ad-bhis*
	dat.	et cetera		

Secondly, the honorific pronoun *bhav-ant* ("your honor") which, orginally, is the pres. part. of *bhu* ("to be") follows *bala-vant*:

bhav-ant m.	case	sg.	dual	pl.
	nom.	***bhav-ān***	***bhav-ant-âu***	***bhav-ant-as***
	voc.	***bhav-an***	***bhav-ant-âu***	***bhav-ant-as***
	acc.	***bhav-ant-am***	***bhav-ant-âu***	*bhav-at-as*
	instr.	*bhav-at-ā*	*bhav-ad-bhyām*	*bhav-ad-bhis*
	dat.	et cetera		

One may speculate that *bhav-ant* was misread as *bha-vant* so that the analogy with forms like *bala-vant* was tempting.

Remember:

1. The nom. sg. m. (like *gacch-an* ← *gacch-ants*) is without compensatory lengthening (in line with **CCl** but contradicting **CpL*s***). An exception is the honorific pronoun *bhav-ān* which follows *bala-vant*.

2. The n. tends to exhibit strong forms in dual NVA in the classes 1, 4, and 10, against fig. D.1, p. 204. However, the regular weak dual NVA
   - ◇ is always seen in *ja-g-at-ī* from *jagat* n. ("world") and
   - ◇ typically seen in the athematic classes 2, 3, 5, 7, 8, and 9
   - ◇ sometimes in pres. part. of the 6. class where we have
     - weak *tudatī bālâu* ("the two hitting boys") beside
     - strong *tudantī bālâu*.

3. The fem. sg. can be seen from the nom. dual n.:

   f. sg. nom. = n. dual NVA

   as in

stem	category	nom. sg. m.	nom. dual n.	nom. sg. f.
bala-vant	*vant*-adjective	***bala-vān***	*bala-vat-ī*	*bala-vat-ī*
mah-ant	adjective	***mah-ān***	*mah-at-ī*	*mah-at-ī*
bhar-ant	pres. part.	***bhar-an***	***bhar-ant-ī***	***bhar-ant-ī***
bhav-ant	pres. part.	***bhav-an***	***bhav-ant-ī***	***bhav-ant-ī***
bhav-ant	honorific pronoun	***bhav-ān***	*bhav-at-ī*	*bhav-at-ī*

All the f. declensions *bala-vat-ī* through *bhav-at-ī* exactly follow *nad-ī* (pp. 235).

Analogical "nasal infix" in neuter plural NVA

We have seen the n. pl. forms for NVA such as these

stem	category	nom. sg. m.	nom. pl. n. NVA
bala-vant	*vant*-adjective	***bala-vān***	***bala-vant-i***
mati-mant	*mant*-adjective	***mati-mān***	***mati-mant-i***
bhar-ant	pres. part.	***bhar-an***	***bhar-ant-as***

In the last column, *n* appears because of the full grade. However, to the speakers of Sanskrit this *n* seemed the sign for nom. pl. n. NVA in general. Using the analogy

bala-vat	= nom sg. with nom. pl. n. NVA:	*bala-vant-i*
just as		
manas	= nom sg. with nom. pl. n. NVA:	*manā**ṃ**s-i*

we obtain n. pl. forms for NVA like

stem	nom. sg. m.	nom. pl. n. NVA
asṛj	*asṛk* (**AFP**)	*asṛ**ñ**j-i*
āyus	*āyus*	*āyū**ṃ**s-i* (**RUKI**)
havis	*havis*	*havī**ṃ**s-i* (**RUKI**)

However, why most of these vowels (not in *asṛ**ñ**j-i*) are long, remains unclear.

kṣôd-īyans etc.

It may be best to cover comparative adjectives here. Consider the paradigm for *kṣôd-īyans* m. ("smaller"):

kṣôd-īyans m.	case	sg.	dual	pl.
	nom.	***kṣôd-īyān*** (1)	***kṣôd-īyāṃs-âu*** (2)	***kṣôd-īyāṃs-as*** (2)
	voc.	***kṣôd-īyan*** (2)	***kṣôd-īyāṃs-âu*** (2)	***kṣôd-īyāṃs-as*** (2)
	acc.	***kṣôd-īyāṃs-am*** (2)	***kṣôd-īyāṃs-âu*** (2)	*kṣôd-īyas-as* (3)
	instr.	*kṣôd-īyas-ā* (3)	*kṣôd-īyô-bhyām* (4)	*kṣôd-īyô-bhis* (4)
	dat.	*kṣôd-īyas-ê* (3)	*kṣôd-īyô-bhyām* (4)	*kṣôd-īyô-bhyas* (4)
	abl.	*kṣôd-īyas-as* (3)	*kṣôd-īyô-bhyām* (4)	*kṣôd-īyô-bhyas* (4)
	gen.	*kṣôd-īyas-as* (3)	*kṣôd-īyas-ôs* (3)	*kṣôd-īyas-ām* (3)
	loc.	*kṣôd-īyas-i* (3)	*kṣôd-īyas-ôs* (3)	*kṣôd-īyas-su* (3)

1. *kṣôd-īyān* is another example of **CpL*s***, here from **kṣôd-īyans-s*. with nom. sg. marker *s*.

2. Like in *mah-ant*, we observe migration of long *ā* from nom. sg. to all the other strong forms except for voc. sg. which is explained by the formula "stem minus **CCl**".

3. Weak forms like *kṣôd-īyas-ā* exhibit loss of vowel and expected **SY_*N***.

4. In weak forms like *kṣôd-īyô-bhis*, we see expected **CpL*z*** from *yas* before voiced consonant *bh*.

The n. forms regularly show strong froms in pl. NVA:

kṣôd-īyans n.	case	sg.	dual	pl.
	nom.	*kṣôd-īyas*	*kṣôd-īyas-ī*	***kṣôd-īyāṃs-i***
	voc.	*kṣôd-īyas*	*kṣôd-īyas-ī*	***kṣôd-īyāṃs-i***
	acc.	*kṣôd-īyas*	*kṣôd-īyas-ī*	***kṣôd-īyāṃs-i***
	instr.	from here like masculine		

cakṛva(n)s etc.

We now turn to the reduplicated perfect active participle (pf.P), for example *cakṛva(n)s* ("one who did"). It is best to assume two stems, one with *n*, the other without:

ca-kṛ-va(n)s m.	case	sg.	dual	pl.
	nom.	***ca-kṛ-vān*** (1)	***ca-kṛ-vāṃs-âu*** (2)	***ca-kṛ-vāṃs-as*** (2)
	voc.	***ca-kṛ-van*** (2)	***ca-kṛ-vāṃs-âu*** (2)	***ca-kṛ-vāṃs-as*** (2)
	acc.	***ca-kṛ-vāṃs-am*** (2)	***ca-kṛ-vāṃs-âu*** (2)	*ca-kr-uṣ-as* (3)
	instr.	*ca-kr-uṣ-ā* (3)	*ca-kṛ-vad-bhyām* (4)	*ca-kṛ-vad-bhis* (4)
	dat.	*ca-kr-uṣ-ê* (3)	*ca-kṛ-vad-bhyām* (4)	*ca-kṛ-vad-bhyas* (4)
	abl.	*ca-kr-uṣ-as* (3)	*ca-kṛ-vad-bhyām* (4)	*ca-kṛ-vad-bhyas* (4)
	gen.	*ca-kr-uṣ-as* (3)	*ca-kr-uṣ-ôs* (3)	*ca-kr-uṣ-ām* (3)
	loc.	*ca-kr-uṣ-i* (3)	*ca-kr-uṣ-ôs* (3)	*ca-kṛ-vat-su* (4)

1. *ca-kṛ-vān* builds on *ca-kṛ-vans-s* (with *n*) and **CpL*s***.

2. As in *mah-ant* and *kṣôd-īyans*, we observe migration of long *ā* from nom. sg. to all the other strong forms except for voc. sg. which is explained by the formula "stem *ca-kṛ-vans* minus **CCl**".

3. Weak forms like *ca-kr-uṣ-ā* build on *cakṛvas* (without *n*) where the loss of vowel *a* forces *v* to become vocalic (***hV***).

4. Perhaps, forms like *ca-kṛ-vad-bhis* are best explained by analogy with forms like *bhar-ad-bhis* or *mah-ad-bhis*. And similarly *ca-kṛ-vat-su*.

The n. forms regularly show strong froms in pl. NVA:

ca-kṛ-va(n)s n.	case	sg.	dual	pl.
	nom.	*ca-kṛ-vat* (4)	*ca-kr-uṣ-ī* (3)	***ca-kṛ-vāṃs-i*** (2)
	voc.	*ca-kṛ-vat* (4)	*ca-kr-uṣ-ī* (3)	***ca-kṛ-vāṃs-i*** (2)
	acc.	*ca-kṛ-vat* (4)	*ca-kr-uṣ-ī* (3)	***ca-kṛ-vāṃs-i*** (2)
	instr.	from here like masculine		

where the numbers are explained above.

A difficult pf.P is *dāśva* corrupted from *dāśva(n)s* ("liberal, giving, a donor") which is a reduplicated (!) form going back to ie. **de-dḱ-v* by **CpL*dḱ***. See p. 309.

Often, *vidva(n)s* ("learned person") is considered reduplicated perfect active, too, although there is no reduplication. This is in line with the 3. sg. perf. *veda* (see p. 367).

vid-va(n)s m.	case	sg.	dual	pl.
	nom.	***vid-vān*** (1)	***vid-vāṃs-âu*** (2)	***vid-vāṃs-as*** (2)
	voc.	***vid-van*** (2)	***vid-vāṃs-âu*** (2)	***vid-vāṃs-as*** (2)
	acc.	***vid-vāṃs-am*** (2)	***vid-vāṃs-âu*** (2)	*vid-uṣ-as* (3)
	instr.	*vid-uṣ-ā* (3)	*vid-vad-bhyām* (4)	*vid-vad-bhis* (4)
	dat.	*vid-uṣ-ê* (3)	*vid-vad-bhyām* (4)	*vid-vad-bhyas* (4)
	abl.	*vid-uṣ-as* (3)	*vid-vad-bhyām* (4)	*vid-vad-bhyas* (4)
	gen.	*vid-uṣ-as* (3)	*vid-uṣ-ôs* (3)	*vid-uṣ-ām* (3)
	loc.	*vid-uṣ-i* (3)	*vid-uṣ-ôs* (3)	*vid-vat-su* (4)

1. *vid-vān* ← **vid-vans-s* (with *n*) by **CpL*s***.

2. As in *mah-ant*, *kṣôd-īyans*, and *ca-kṛ-va(n)s*, we observe migration of long *ā* from nom. sg. to all the other strong forms except for voc. sg. which is explained by the formula "stem *vid-vans* minus **CCl**".

3. Weak forms like *vid-uṣ-ā* build on *vid-vas* (without *n*) where the loss of vowel *a* forces *v* to become vocalic (***hV***).

4. Similar to forms like *ca-kṛ-vad-bhis*, let us explain forms like *vid-vad-bhis* and *vid-vat-su* by analogy (see *bhar-ad-bhis* or *mah-at-su*).

The n. forms regularly show strong froms in pl. NVA:

vid-va(n)s n.	case	sg.	dual	pl.
	nom.	*vid-vat* (4)	*vid-uṣ-ī* (3)	***vid-vāṃs-i*** (2)
	voc.	*vid-vat* (4)	*vid-uṣ-ī* (3)	***vid-vāṃs-i*** (2)
	acc.	*vid-vat* (4)	*vid-uṣ-ī* (3)	***vid-vāṃs-i*** (2)
	instr.	from here like masculine		

where the numbers are explained above.

D.3.4. *an*- and *in*- stems like *rāj-an* and *yôg-in*

an-stems (*rāj-an*, *karm-an*)

The stem for "king" is *rāj-an*. The strong-weak alternation concerns the suffix *an*:

rāj-an m.	case	sg.	dual	pl.
	nom.	***rāj-ā*** (2)	***rāj-ān-âu*** (1)	***rāj-ān-as*** (1)
	voc.	***rāj-an*** (3)	***rāj-ān-âu*** (1)	***rāj-ān-as*** (1)
	acc.	***rāj-ān-am*** (1)	***rāj-ān-âu*** (1)	*rāj-ñ-as* (4)
	instr.	*rāj-ñ-ā* (4)	*rāj-a-bhyām* (5)	*rāj-a-bhis* (5)
	dat.	*rāj-ñ-ê* (4)	*rāj-a-bhyām* (5)	*rāj-a-bhyas* (5)
	abl.	*rāj-ñ-as* (4)	*rāj-a-bhyām* (5)	*rāj-a-bhyas* (5)
	gen.	*rāj-ñ-as* (4)	*rāj-ñ-ôs* (4)	*rāj-ñ-ām* (4)
	loc.	*rāj-ñ-i*/*rāj-an-i* (4, 6)	*rāj-ñ-ôs* (4)	*rāj-a-su* (5)

1. The strong forms with oi.

   $$\bar{a} \quad + \quad n \quad + \quad \text{vowel ending}$$

   go back to ie.

   $$o \quad + \quad n \quad + \quad \text{vowel ending}$$

   according to Brugmann's law **L*o***.

2. Nom. sg. *rāj-ā* is difficult because ie. **reǵ-on-s* should result in *rāj-ān* by **CpL*s***.

3. The strong form voc. sg. *rāj-an* regularly equals the stem.

4. The weak forms before vowel-initial ending like instr. sg. *rāj-ñ-ā* are zero-grade forms (just nasal without vowel) and with obvious forward (!) assimilation $n \rightarrow \tilde{n}$ after palatal *j*.

5. By **SY_*N*** one obtains the weak forms like *rāj-a-bhis*.

6. Loc. sg. has the alternative reading *rāj-an-i*. It is not a strong form because strong forms exhibit Brugmann's law (see 1). It is taken from forms like *ātm-an-i* (see below).

The paradigm of *śv-an* ("dog") follows the one of *rāj-an* closely:

śv-an m.	case	sg.	dual	pl.
	nom.	***śv-ā*** (2)	***śv-ān-âu*** (1)	***śv-ān-as*** (1)
	voc.	***śv-an*** (3)	***śv-ān-âu*** (1)	***śv-ān-as*** (1)
	acc.	***śv-ān-am*** (1)	***śv-ān-âu*** (1)	*śu-n-as* (4)
	instr.	*śu-n-ā* (4)	*śv-a-bhyām* (5)	*śv-a-bhis* (5)
	dat.	*śu-n-ê* (4)	*śv-a-bhyām* (5)	*śv-a-bhyas* (5)
	abl.	*śu-n-as* (4)	*śv-a-bhyām* (5)	*śv-a-bhyas* (5)
	gen.	*śu-n-as* (4)	*śu-n-ôs* (4)	*śu-n-ām* (4)
	loc.	*śu-n-i* (4)	*śu-n-ôs* (4)	*śv-a-su* (5)

1. **L*o***

2. Nom. sg. *śv-ā* corresponds to *rāj-ā*. Both are difficult (see above).

3. The strong form voc. sg. *śv-an* regularly equals the stem.

4. The weak forms before vowel-initial ending like instr. sg. *śu-n-ā* are zero-grade forms (just nasal without vowel) and with expected vowel for halfvowel before consonant *n* (***hV***).

5. By **SY_*N*** and **SY_Conf** one obtains the weak forms like *śv-a-bhis*, but not n.at. *śu-n-bhis*.

Turn now to *yuv-an* m. ("youngster"):

yuv-an m.	case	sg.	dual	pl.
	nom.	***yuv-ā*** (2)	***yuv-ān-âu*** (1)	***yuv-ān-as*** (1)
	voc.	***yuv-an*** (3)	***yuv-ān-âu*** (1)	***yuv-ān-as*** (1)
	acc.	***yuv-ān-am*** (1)	***yuv-ān-âu*** (1)	*yū-n-as* (4)
	instr.	*yū-n-ā* (4)	*yuv-a-bhyām* (5)	*yuv-a-bhis* (5)
	dat.	*yū-n-ê* (4)	*yuv-a-bhyām* (5)	*yuv-a-bhyas* (5)
	abl.	*yū-n-as* (4)	*yuv-a-bhyām* (5)	*yuv-a-bhyas* (5)
	gen.	*yū-n-as* (4)	*yū-n-ôs* (4)	*yū-n-ām* (4)
	loc.	*yū-n-i* (4)	*yū-n-ôs* (4)	*yuv-a-su* (5)

1. **L*o***

2. Nom. sg. *yuv-ā* corresponds to *rāj-ā* and *śv-ā*.

3. The strong form voc. sg. *yuv-an* regularly equals the stem.

4. The weak forms before vowel-initial ending like instr. sg. *yū-n-ā* are zero-grade forms (just nasal without vowel) and with expected long vowel for vowel plus (half)vowel before consonant *n* (**MVS**).

5. By **SY_*N*** and **SY_Conf** (see 27) one obtains the weak forms like *yuv-a-bhis* (rather than u.at. *ivunbhis*).

The n. (!) noun *nām-an* ("name") finds a similar explanation. We obtain

nām-an n.	case	sg.	dual	pl.
	nom.	*nām-a* (1)	*nām-n-ī/nām-an-ī* (2, 4)	***nām-ān-i*** (3)
	voc.	*nām-a, nām-an* (2)	*nām-n-ī/nām-an-ī* (2, 4)	***nām-ān-i*** (3)
	acc.	*nām-a* (1)	*nām-n-ī/nām-an-ī* (2, 4)	***nām-ān-i*** (3)
	instr.	*nām-n-ā* (4)	*nām-a-bhyām* (5)	*nām-a-bhis* (5)
	dat.	*nām-n-ê* (4)	*nām-a-bhyām* (5)	*nām-a-bhyas* (5)
	abl.	*nām-n-as* (4)	*nām-a-bhyām* (5)	*nām-a-bhyas* (5)
	gen.	*nām-n-as* (4)	*nām-n-ôs* (4)	*nām-n-ām* (4)
	loc.	*nām-n-i/ nām-an-i* (2, 4)	*nām-n-ôs* (4)	*nām-a-su* (5)

1. *nām-a* is regular weak stem without ending from **nom-n̊*.

2. *nām-a* is regular by the rule that NVA neuter are the same, within sg., dual, and pl.. In contrast, the alternative *nām-an* builds on the stem *nām-an*. Similarly, loc. sg. and NVA dual also show irregular alternative forms. They are not strong forms because strong forms exhibit Brugmann's law (see 3). Instead, they have spilled over from words like the *karm-an* ("action") to which we turn next.

3. **L*o***

4. Before vowel endings, we just have *n* as the weak suffix. The dual forms NVA are formed with the usual marker *ī* in the athematic paradigms.

5. Similar to nom. sg., we find forms like *nām-a-bhis* by **SY_*N***.

We now turn to *an*-nouns with two consonants before the suffix, *ātm-an* m. ("soul, self") and the *karm-an* n. ("action"):

ātm-an m.	case	sg.	dual	pl.
	nom.	***ātm-ā*** (2)	***ātm-ān-âu*** (1)	***ātm-ān-as*** (1)
	voc.	***ātm-an*** (3)	***ātm-ān-âu*** (1)	***ātm-ān-as*** (1)
	acc.	***ātm-ān-am*** (1)	***ātm-ān-âu*** (1)	*ātm-an-as* (4)
	instr.	*ātm-an-ā* (4)	*ātm-a-bhyām* (5)	*ātm-a-bhis* (5)
	dat.	*ātm-an-ê* (4)	*ātm-a-bhyām* (5)	*ātm-a-bhyas* (5)
	abl.	*ātm-an-as* (4)	*ātm-a-bhyām* (5)	*ātm-a-bhyas* (5)
	gen.	*ātm-an-as* (4)	*ātm-an-ôs* (4)	*rāj-ñ-ām* (4)
	loc.	*ātm-an-i* (4)	*ātm-an-ôs* (4)	*ātm-an-su* (5)

c

1. **L*o***

2. Nom. sg. *ātm-ā* is difficult, as is *rāj-ā*.

3. Again, the strong form voc. sg. *ātm-an* equals the stem.

4. We might expect instr. sg. n.at. *ātm-n-ā*. However, *m* would become syllabic and we would obtain n.at. *āta-n-ā*. This is, of course, not what we observe.

5. By **SY_*N*** one obtains weak forms like *ātm-a-bhis*.

karm-an n.	case	sg.	dual	pl.
	nom.	*karm-a* (1)	*karm-aṇ-ī* (4)	***karm-āṇ-i*** (3)
	voc.	*karm-a, karm-an* (2)	*karm-aṇ-ī* (4)	***karm-āṇ-i*** (3)
	acc.	*karm-a* (1)	*karm-aṇ-ī* (4)	***karm-āṇ-i*** (3)
	instr.	*karm-aṇ-ā* (4)	*karm-a-bhyām* (5)	*karm-a-bhis* (5)
	dat.	*karm-aṇ-ê* (4)	*karm-a-bhyām* (5)	*karm-a-bhyas* (5)
	abl.	*karm-aṇ-as* (4)	*karm-a-bhyām* (5)	*karm-a-bhyas* (5)
	gen.	*karm-aṇ-as* (4)	*karm-aṇ-ôs* (4)	*karm-aṇ-ām* (4)
	loc.	*karm-aṇ-i* (4)	*karm-aṇ-ôs* (4)	*karm-a-su* (5)

1. Nom. sg. *karm-a* is regular weak stem without ending due to **SY_*N*** and **SY_Conf.**

2. Again, we have alternative forms for voc. sg.. The second one *karm-an* equals the stem.

3. **L*o***

4. Before vowel endings, we would expect *n* as the weak suffix, for example instr. sg. n.at. *karm-n-ā*. However, *kara-ṇ-ā* could not have survived for long (compare *ātm-an-ā*).

5. Similar to nom. sg., we find forms like *karm-a-bhis* by **SY_*N*** and **SY_Conf.**

Note:

1. The only strong forms are those in pl. nom., voc., and acc. which show *ā* (from Brugmann's law).

2. The weak forms have *aṇ* (after *r*) in line with the usual sandhi rule.

3. The "very weak" forms have *a* as in *karm-a-bhis* (similar to *nām-a-bhis*).

in-stems (*yôg-in, tapas-vin*)

After one has mastered *rāj-an*, it is not too difficult to understand *yôg-in* m. ("yogi") and other *in*-stems. They do not show any strong-weak alternation:

yôg-in m.	case	sg.	dual	pl.
	nom.	*yôg-ī* (2)	*yôg-in-âu* (1)	*yôg-in-as* (1)
	voc.	*yôg-in* (1)	*yôg-in-âu* (1)	*yôg-in-as* (1)
	acc.	*yôg-in-am* (1)	*yôg-in-âu* (1)	*yôg-in-as* (1)
	instr.	*yôg-in-ā* (1)	*yôg-i-bhyām* (3)	*yôg-i-bhis* (3)
	dat.	*yôg-in-ê* (1)	*yôg-i-bhyām* (3)	*yôg-i-bhyas* (3)
	abl.	*yôg-in-as* (1)	*yôg-i-bhyām* (3)	*yôg-i-bhyas* (3)
	gen.	*yôg-in-as* (1)	*yôg-in-ôs* (1)	*yôg-in-ām* (1)
	loc.	*yôg-in-i* (1)	*yôg-in-ôs* (1)	*yôg-i-ṣu* (3, 4)

1. The stem *yôg-in* is seen in many forms. Since there is no weak-strong alternation, nom. and acc. pl. are not differentiated.

2. Similar to the nom. sg. *rāj-ā*, *yôg-ī* also exhibits compensatory lengthening for original *s* (**CpL *s***, pp. 50) with unexpected loss of final *n*.

3. In the weak forms before consonants (*bh* or *s*) the *n* of *rāj-an* becomes syllabic and turns into *a*. By analogy, *n* is also missing in the corresponding forms of *yôg-in*:

rāj-an	with instr. pl.:	*rāj-a-bhis*
just as		
yôg-in	with instr. pl.:	*yôg-i-bhis*

4. **RUKI**

There exist also n. *in*-stems. Some are build on n. *as*-stems (p. 100), such as *tapas* n. ("heat"). However, we have *tapas-vin* rather than**tapas-in*. Indeed, n.at. *tapas-in* would lead to confusing forms such as

nom. sg. **tapas-i* ← n.at. *tapas-in*
loc. sg. *tapas-i* ← n. *tap-as*

It seems that the declension of *tapas-vin* ("ascetic") is a rather late development where analogy was probably more important than sound laws.

tapas-vin n.	case	sg.	dual	pl.
	nom.	*tapas-vi* (1)	*tapas-vin-ī* (4)	*tapas-vīn-i* (3)
	voc.	*tapas-vi*/*tapas-vin* (2)	*tapas-vin-ī* (4)	*tapas-vīn-i* (3)
	acc.	*tapas-vi* (1)	*tapas-vin-ī* (4)	*tapas-vīn-i* (3)
	instr.	*tapas-vin-ā* (4)	*tapas-vi-bhyām* (5)	*tapas-vi-bhis* (5)
	dat.	*tapas-vin-ê* (4)	*tapas-vi-bhyām* (5)	*tapas-vi-bhyas* (5)
	abl.	*tapas-vin-as* (4)	*tapas-vi-bhyām* (5)	*tapas-vi-bhyas* (5)
	gen.	*tapas-vin-as* (4)	*tapas-vin-ôs* (4)	*tapas-vin-ām* (4)
	loc.	*tapas-vin-i* (4)	*tapas-vin-ôs* (4)	*tapas-vi-ṣu* (6)

1. One may speculate that n. *tapas-vi* expresses a weak form in contrast to m. *tapas-vī*.

2. Again, we have alternative forms for voc. sg.. The second one *tapas-vin* equals the stem.

3. *tapas-vīn-i* may be formed by analogy with forms like *karm-āṇ-i* or *phalāni*.

4. Built regularly from the stem.

5. *tapas-vi-bhis* perhaps by analogy with forms like *rāj-a-bhis* or *yôg-i-bhis*.

6. **RUKI**

D.3.5. Agent and kinship nouns like *nê-tar* and *pitar*

tor-stems (*nê-tar*, *kartar*)

We now turn to in-between nouns (p. 205), the *ṛ*-stems that we will also call *tor* stems. All the forms show full grade of the verbal component, like the stems *nê-tar* ("leader"), *bhar-tar* ("husband"), or *kar-tar* ("doer, maker"). The weak-strong alternation concerns the suffix. From an ie. point of view, the suffix is *tor*. You kow this suffix from the Latin B *men-tor*.

◇ In the strong forms, we have this suffix *tor*. The strong forms with oi.

$$\bar{a} \quad + \quad r \quad + \quad \text{vowel ending}$$

originate from ie.

$$o \quad + \quad r \quad + \quad \text{vowel ending}$$

according to Brugmann's law **L*o***.

◇ In the weak forms, we see *tr* before vowels or *tṛ* before consonants.

We begin with the declension pattern of *nê-tar* ("leader"):

nê-tar m.	case	sg.	dual	pl.
	nom.	***nê-tā*** (2)	***nê-tār-âu*** (1)	***nê-tār-as*** (1)
	voc.	***nê-tar*** (3)	***nê-tār-âu*** (1)	***nê-tār-as*** (1)
	acc.	***nê-tār-am*** (1)	***nê-tār-âu*** (1)	*nê-tṝ-n* (6)
	instr.	*nê-tr-ā* (4)	*nê-tṛ-bhyām* (5)	*nê-tṛ-bhis* (5)
	dat.	*nê-tr-ê* (4)	*nê-tṛ-bhyām* (5)	*nê-tṛ-bhyas* (5)
	abl.	*nê-tr-as* (4)	*nê-tṛ-bhyām* (5)	*nê-tṛ-bhyas* (5)
	gen.	*nê-tr-as* (4)	*nê-tr-ôs* (4)	*nê-tṝ-ṇām* (7)
	loc.	*nê-tar-i* (9)	*nê-tr-ôs* (4)	*nê-tṛ-ṣu* (5, 8)

1. **L*o***

2. Nom. sg. *nê-tā* may be due to **CpL*s***: **tor-s* → **tōr* → **tār*. Finally the *r* is dropped after the long *ā* (similarly, we have *rāj-ā* where the *n* is lost).

3. As usual, voc. sg. *nê-tar* equals the stem. Since the syllable is not open (*r* is not followed by a vowel), Brugmann's law does not apply.

4. The weak forms before vowel-initial endings build on the zero-grade suffix like instr. sg. *nê-tr-ā*.

5. Before a consonant-initial ending, we obtain forms like *nê-tṛ-bhis* (pp. 18).

6. The thematic ie. acc. pl. marker *ns* is cerebralized after *r*-sounds, but not in a word-final position (see **Cer*n***). Syllabic *ṝ* is long by **CpL*s***.

7. *nê-tṝ-ṇām* has long *ṝ* because the thematic ie. gen. pl. marker is *Hnōm* (**Lar_*V***).

8. **RUKI**

9. The loc. *nê-tar-i* is irregular for expected weak form *nê-tr-i*. Note that *nê-tar-i* is not a strong form which would be *nê-tār-i* by **L*o***. Maybe, analogy is to blame, for example,

marut	with voc. sg.:	*marut-i*
just as		
nê-tar	with voc. sg.:	*nê-tar-i*

Be careful: *bhar-tar* ("husband") and *nap-tar* ("grandson") are best understood as agent nouns, and not as kinship nouns (see next subsection). Finally, we comment on the other two genders:

◇ Feminine agent nouns are formed with long *ī*, for example *nê-trī* ("woman leader"). They are formed like *nad-ī* ("river"), see pp. 235.

◇ Neuter agent nouns are often used as n. adjectives. They are treated on pp. 243.

Kinship nouns (*pitar*, *mātar*)

Kinship nouns (such as *pitar*, "father") are very similar to agent nouns:

pit-ar m.	case	sg.	dual	pl.
	nom.	***pit-ā*** (2)	***pit-ar-âu*** (1)	***pit-ar-as*** (1)
	voc.	***pit-ar*** (3)	***pit-ar-âu*** (1)	***pit-ar-as*** (1)
	acc.	***pit-ar-am*** (1)	***pit-ar-âu*** (1)	*pit-ṝ-n* (6)
	instr.	*pit-r-ā* (4)	*pit-ṛ-bhyām* (5)	*pit-ṛ-bhis* (5)
	dat.	*pit-r-ê* (4)	*pit-ṛ-bhyām* (5)	*pit-ṛ-bhyas* (5)
	abl.	*pit-us* (10)	*pit-ṛ-bhyām* (5)	*pit-ṛ-bhyas* (5)
	gen.	*pit-us* (10)	*pit-r-ôs* (4)	*pit-ṝ-ṇām* (7)
	loc.	*pit-ar-i* (9)	*pit-r-ôs* (4)	*pit-ṛ-ṣu* (5, 8)

1. In contrast to agent nouns, the suffix does not contain ie. *o* so that Brugmann's law **Lo** is not applied.

2. Nom. sg. *pit-ā* may be due to **CpLs**: $^*er\text{-}s \rightarrow {}^*\bar{e}r \rightarrow {}^*\bar{a}r$. Finally the *r* is dropped after the long *ā* (similarly, we have *rāj-ā* where the *n* is lost).

3. As usual, voc. sg. *pit-ar* equals the stem.

4. The weak forms before vowel-initial endings build on the zero-grade suffix like instr. sg. *pit-r-ā*.

5. Before a consonant-initial ending, we obtain forms like *pit-ṛ-bhis* (pp. 18).

6. The thematic ie. acc. pl. marker *ns* is cerebralized after *r*-sounds, but not in a word-final position (see **Cern**). Syllabic *ṝ* is long by **CpLs**. See pp. 203.

7. *pit-ṝ-ṇām* has long *ṝ* because the thematic ie. gen. pl. marker is *Hnōm* (**Lar_V**).

8. **RUKI**

9. The loc. *pit-ar-i* is irregular for expected weak form *pit-r-i*.

10. The ending *us* in abl. and gen. sg. *pit-us* seem to go back to *r̥̊s*, perhaps as in 3. pers. pl. perf. *bi-bhid-us*, but might just be remembered as "irregular".

An example for a f. kinship term is *mātar* ("mother"):

māt-ar f.	case	sg.	dual	pl.
	nom.	***māt-ā***	***māt-ar-âu***	***māt-ar-as***
	voc.	***māt-ar***	***māt-ar-âu***	***māt-ar-as***
	acc.	***māt-ar-am***	***māt-ar-âu***	*māt-ṝ-s* (1)
	instr.	*māt-r-ā*	*māt-ṛ-bhyām*	*māt-ṛ-bhis*
	dat.	*māt-r-ê*	*māt-ṛ-bhyām*	*māt-ṛ-bhyas*
	abl.	*māt-us*	*māt-ṛ-bhyām*	*māt-ṛ-bhyas*
	gen.	*māt-us*	*māt-r-ôs*	*māt-ṝ-ṇām*
	loc.	*māt-ar-i*	*māt-r-ôs*	*māt-ṛ-ṣu*

On the basis of *pitar* ("father"), the only innovation concerning feminine *mātar* ("mother") concerns the acc. pl. *māt-ṝ-s*. Compare

	thematic *a* declension	inbetween declension
masculine	*dêv-ā-n*	*pit-ṝ-n*
feminine	*dêv-ā-s*	*māt-ṝ-s*

D.3.6. Stems in long diphthongs

In this secion, we consider stems like *rāy* m./f. ("wealth") and *glāv* m. ("moon"). They do not show any weak-strong alternation, but are athematic. Beginning with the *āv*-nouns, we find

glāv m.	case	sg.	dual	pl.
	nom.	*glâu-s* (2, 3)	*glāv-âu* (1)	*glāv-as* (1)
	voc.	*glâu-s* (2, 4)	*glāv-âu* (1)	*glāv-as* (1)
	acc.	*glāv-am* (1)	*glāv-âu* (1)	*glāv-as* (1)
	instr.	*glāv-ā* (1)	*glâu-bhyām* (2)	*glâu-bhis* (2)
	dat.	*glāv-ê* (1)	*glâu-bhyām* (2)	*glâu-bhyas* (2)
	abl.	*glāv-as* (1)	*glâu-bhyām* (2)	*glâu-bhyas* (2)
	gen.	*glāv-as* (1)	*glāv-ôs* (1)	*glāv-ām* (1)
	loc.	*glāv-i* (1)	*glāv-ôs* (1)	*glâu-ṣu* (2)

1. *glāv* before vowels by **DIPH**
2. *glâu* before consonants by **DIPH**
3. Nom. sg. marker *s* is clearly observable
4. Voc. sg. irregularly differs from the stem.

The *glāv* pattern is also followed by *nāv* f. ("boat").

Turning to the *āy*-stem, consider the paradigm

rāy m./f.	case	sg.	dual	pl.
	nom.	*rā-s* (2, 3)	*rāy-âu* (1)	*rāy-as* (1)
	voc.	*rā-s* (2, 4)	*rāy-âu* (1)	*rāy-as* (1)
	acc.	*rāy-am* (1)	*rāy-âu* (1)	*rāy-as* (1)
	instr.	*rāy-ā* (1)	*rā-bhyām* (2)	*rā-bhis* (2)
	dat.	*rāy-ê* (1)	*rā-bhyām* (2)	*rā-bhyas* (2)
	abl.	*rāy-as* (1)	*rā-bhyām* (2)	*rā-bhyas* (2)
	gen.	*rāy-as* (1)	*rāy-ôs* (1)	*rāy-ām* (1)
	loc.	*rāy-i* (1)	*rāy-ôs* (1)	*rā-su* (2)

1. *rāy* before vowels by **DIPH**
2. By **DIPH** before consonants, one should expect un.at. *râi-bhis* rather than *rā-bhis*.
3. Nom. sg. marker *s* is clearly observable
4. Voc. sg. irregularly differs from the stem.

D.3.7. Feminine ī- and ū- stems

nadī and *vadhū*

There exist two f. declensions with long *ī* and long *ū*, respectively. They strongly resemble each other. The *ī*-stem is exemplified by *nadī* ("river"):

nadī f.	case	sg.	dual	pl.
	nom.	*nad-ī* (1, 2)	*nad-y-âu* (4)	*nad-y-as* (4)
	voc.	*nad-i* (3)	*nad-y-âu* (4)	*nad-y-as* (4)
	acc.	*nad-ī-m* (1)	*nad-y-âu* (4)	*nad-ī-s* (1, 6)
	instr.	*nad-y-ā* (4, 5)	*nad-ī-bhyām* (1)	*nad-ī-bhis* (1)
	dat.	*nad-y-âi* (4, 6)	*nad-ī-bhyām* (1)	*nad-ī-bhyas* (1)
	abl.	*nad-y-ās* (4, 6)	*nad-ī-bhyām* (1)	*nad-ī-bhyas* (1)
	gen.	*nad-y-ās* (4, 6)	*nad-y-ôs* (4)	*nad-ī-nām* (1)
	loc.	*nad-y-ām* (4, 6)	*nad-y-ôs* (4)	*nad-ī-ṣu* (1, 7)

The *nadī* model has been used for many f. *ī*-nouns, such as *bala-vat-ī* or *bhar-a-nt-ī*. For m. nouns, consider *sêna-nīs* m. ("army general") at *nī* ("to lead") in the etymological dictionary. For the numbers, see below the paradigm for *vadhū* ("bride"):

vadhū f.	case	sg.	dual	pl.
	nom.	*vadh-ū-s* (1, 2)	*vadh-v-âu* (4)	*vadh-v-as* (4)
	voc.	*vadh-u* (3)	*vadh-v-âu* (4)	*vadh-v-as* (4)
	acc.	*vadh-ū-m* (1)	*vadh-v-âu* (4)	*vadh-ū-s* (1, 6)
	instr.	*vadh-v-ā* (4, 5)	*vadh-ū-bhyām* (1)	*vadh-ū-bhis* (1)
	dat.	*vadh-v-âi* (4, 6)	*vadh-ū-bhyām* (1)	*vadh-ū-bhyas* (1)
	abl.	*vadh-v-ās* (4, 6)	*vadh-ū-bhyām* (1)	*vadh-ū-bhyas* (1)
	gen.	*vadh-v-ās* (4, 6)	*vadh-v-ôs* (4)	*vadh-ū-nām* (1, 6)
	loc.	*vadh-v-ām* (4, 6)	*vadh-v-ôs* (4)	*vadh-ū-ṣu* (1, 7)

The *vadhū* pattern is much less prominent and comprises the f. nouns

◇ *cam-ū* ("army")

◇ *svaśr-ū* ("mother in law")

◇ *juh-ū* ("ladle"), see *hu* ("to sacrifice")

The two paradigms (*nad-ī* and *vadhū*) are quite parallel:

1. Before consonant-initial endings, the long vowel is present.

2. In contrast to the nom. sg. *nad-ī*, we find the usual nom. sg. marker *s* in *vadhūs*.

3. The voc. sg. *nad-i* and *vadh-u*, respectively, are formed from the stem but with the short vowel.

4. Before vowel-initial endings, ***hV*** leads to forms like *nad-y-ā* or *vadh-v-ā*.

5. Instr. sg. ending *ā* as usual for m. and f. athematic declensions.

6. These two paradigms consistently use thematic feminine endings in line with this table:

	singular			plural	
	dative	abl./gen.	locative	acc.	gen.
them. fem. nouns	*âi*	*ās*	*ām*	*V̄s*	*V̄nām* ← *VHnōm*

7. **RUKI**

dhī and *bhū*

Apart from *nadī* and *vadhū*, we find monosyllabic stems in long *ī* and long *ū*, respectively, that look peculiar at first sight. Consider *dhī* ("intellect"):

dhī f.	case	sg.	dual	pl.
	nom.	*dh-ī-s* (1, 2)	*dh-iy-âu* (4)	*dh-iy-as* (4)
	voc.	*dh-ī-s* (3)	*dh-iy-âu* (4)	*dh-iy-as* (4)
	acc.	*dh-iy-am* (4)	*dh-iy-âu* (4)	*dh-iy-as* (4, 6)
	instr.	*dh-iy-ā* (4)	*dh-ī-bhyām* (1)	*dh-ī-bhis* (1, 8)
	dat.	*dh-iy-ê/dh-iy-âi* (4, 5)	*dh-ī-bhyām* (1)	*dh-ī-bhyas* (1)
	abl.	*dh-iy-as/dh-iy-ās* (4, 5)	*dh-ī-bhyām* (1)	*dh-ī-bhyas* (1)
	gen.	*dh-iy-as/dh-iy-ās* (4, 5)	*dh-iy-ôs* (4)	*dh-iy-ām/dh-ī-nām* (1, 4, 5)
	loc.	*dh-iy-i/dh-iy-ām* (4, 5)	*dh-iy-ôs* (4)	*dh-ī-ṣu* (1, 7)

The numbers are explained below the *bhū* paradigm. The same pattern is followed by the f. nouns

◇ *bh-ī* ("fear")

◇ *śr-ī* ("wealth")

◇ *hr-ī* ("shame")

In a parallel fashion (replace *ī/i/j* by *ū/u/v*), we have *bhū* ("earth"):

bhū f.	case	sg.	dual	pl.
	nom.	*bh-ū-s* (1, 2)	*bh-uv-âu* (4)	*bh-uv-as* (4)
	voc.	*bh-ū-s* (3)	*bh-uv-âu* (4)	*bh-uv-as* (4)
	acc.	*bh-uv-am* (4)	*bh-uv-âu* (4)	*bh-uv-as* (4, 5)
	instr.	*bh-uv-ā* (4)	*bh-ū-bhyām* (1)	*bh-ū-bhis* (1, 7)
	dat.	*bh-uv-ê/bh-uv-âi* (4, 5)	*bh-ū-bhyām* (1)	*bh-ū-bhyas* (1)
	abl.	*bh-uv-as/bh-uv-ās* (4, 5)	*bh-ū-bhyām* (1)	*bh-ū-bhyas* (1)
	gen.	*bh-uv-as/bh-uv-ās* (4, 5)	*bh-uv-ôs* (4)	*bh-uv-ām/bh-ū-nām* (1, 4, 5)
	loc.	*bh-uv-i/bh-uv-ām* (4, 5)	*bh-uv-ôs* (4)	*bh-ū-ṣu* (1, 6)

The pattern of *bhū* ("earth") is also adhered to by *bhrū* ("brow").

The two paradigms (*dhī* and *bhū*) are strictly parallel:

1. Before consonant-initial endings, the long vowel is present.

2. Nom. sg. with the usual nom. sg. marker *s*.

3. The voc. sg. are not formed from the stem but equal the nom. sg.

4. Before vowel-initial endings, ***V*** **+** ***hV*** (pp. 21) leads to forms like *dh-iy-ā* or *bh-uv-ā*.

5. Consider this table for feminine endings of both athematic and thematic nouns:

	singular			plural	
	dative	abl./gen.	locative	acc.	gen.
athem. nouns	*ê*	*as*	*i*	*as*	*ām*
them. nouns	*âi*	*ās*	*ām*	*V̄s*	*V̄nām* ← *VHnōm* (**Lar_V**)

Both *dhī* and *bhū* show the thematic (*nadī*) endings except for acc. pl. where the athematic ending prevails.

6. **RUKI**

7. *dh-ī-bhis* and *bh-ū-bhis* are peculiar in not reflecting **DA**. It seems that Grassmann's law was not operative any more when these forms were built.

strī and *punar-bhū*

Another f. noun is *str-ī* ("woman") that exhibits forms similar to those of *dh-ī* and *nadī*:

str-ī f.	case	sg.	dual	pl.
	nom.	*str-ī*	*str-iy-âu*	*str-iy-as*
	voc.	*str-i*	*str-iy-âu*	*str-iy-as*
	acc.	*str-iy-am*/*str-ī-m* (!)	*str-iy-âu*	*str-iy-as*/*str-ī-s* (!)
	instr.	*str-iy-ā*	*str-ī-bhyām*	*str-ī-bhis*
	dat.	*str-iy-âi*	*str-ī-bhyām*	*str-ī-bhyas*
	abl.	*str-iy-ās*	*str-ī-bhyām*	*str-ī-bhyas*
	gen.	*str-iy-ās*	*str-iy-ôs*	*str-ī-nām*
	loc.	*str-iy-ām*	*str-iy-ôs*	*nad-ī-ṣu*

After taking ***V*+*hV*** into account, the only difference to the *nadī* pardigm concerns the accusatives, with the (first) thematic one and the (second) athematic one.

Finally, we turn to *punar-bh-ū* f. ("remarried widow") which belongs to *bhū* ("to be"). This noun does not apply ***V*+*hV*** by replacing *ū* by *uv* before vowel endings. Instead we find forms like instr. sg. *punar-bh-v-ā*, very much like *vadh-v-ā*. The only differences in comparison with *vadh-ū* are seen in the acc. sg. and pl. where we have the athematic forms *punar-bh-v-a-m* and *punar-bh-v-as* like in *marut*.

Related masculine compounds

There exist two compounds related with *dhī* ("intellect") and *bhū* ("earth"). Both are m.:

◇ *su-dhī* ("intelligent") and

◇ *prati-bhū* ("guarantor")

Being masculine, they employ the left-hand alternative of the *dhī* and *bhū* paradigm, respectively:

su-dhī m.	case	sg.	dual	pl.
	nom.	*su-dh-ī-s*	*su-dh-iy-âu*	*su-dh-iy-as*
	voc.	*su-dh-ī-s*	*su-dh-iy-âu*	*su-dh-iy-as*
	acc.	*su-dh-iy-am*	*su-dh-iy-âu*	*su-dh-iy-as*
	instr.	*su-dh-iy-ā*	*su-dh-ī-bhyām*	*su-dh-ī-bhis*
	dat.	*su-dh-iy-ê*	*su-dh-ī-bhyām*	*su-dh-ī-bhyas*
	abl.	*su-dh-iy-as*	*su-dh-ī-bhyām*	*su-dh-ī-bhyas*
	gen.	*su-dh-iy-as*	*su-dh-iy-ôs*	*su-dh-iy-ām*
	loc.	*su-dh-iy-i*	*su-dh-iy-ôs*	*su-dh-ī-ṣu*

and

prati-bhū m.	case	sg.	dual	pl.
	nom.	*prati-bh-ū-s*	*prati-bh-uv-âu*	*prati-bh-uv-as*
	voc.	*prati-bh-ū-s*	*prati-bh-uv-âu*	*prati-bh-uv-as*
	acc.	*prati-bh-uv-am*	*prati-bh-uv-âu*	*prati-bh-uv-as*
	instr.	*prati-bh-uv-ā*	*prati-bh-ū-bhyām*	*prati-bh-ū-bhis*
	dat.	*prati-bh-uv-ê*	*prati-bh-ū-bhyām*	*prati-bh-ū-bhyas*
	abl.	*prati-bh-uv-as*	*prati-bh-ū-bhyām*	*prati-bh-ū-bhyas*
	gen.	*prati-bh-uv-as*	*prati-bh-uv-ôs*	*prati-bh-uv-ām*
	loc.	*prati-bh-uv-i*	*prati-bh-uv-ôs*	*prati-bh-ū-ṣu*

D.3.8. *i*- and *u*-stems

i-stems (*mun-i*, *mat-i*)

We have *i*-stems, for example

◇ m. *muni*

◇ f. *mati*

and *u*-stems, for example

◇ m. *guru*

◇ f. *dhênu*

◇ n. *madhu*

While the *i*- and *u*-stems are parallel, they show some unusual features not encountered before. Turning to the *i*-stems first, compare

mun-i m.	case	sg.	dual	pl.
	nom.	*mun-i-s* (1)	*mun-ī* (5)	*mun-ay-as* (2, 3)
	voc.	*mun-ê* (2)	*mun-ī* (5)	*mun-ay-as* (2, 3)
	acc.	*mun-i-m* (1)	*mun-ī* (5)	*mun-ī-n* (7)
	instr.	*mun-i-n-ā* (3, 6)	*mun-i-bhyām* (3)	*mun-i-bhis* (3)
	dat.	*mun-ay-ê* (2, 3)	*mun-i-bhyām* (3)	*mun-i-bhyas* (3)
	abl.	*mun-ê-s* (2)	*mun-i-bhyām* (3)	*mun-i-bhyas* (3)
	gen.	*mun-ê-s* (2)	*mun-y-ôs* (1)	*mun-ī-nām* (8)
	loc.	*mun-âu* (4)	*mun-y-ôs* (1)	*mun-i-ṣu* (3, 9)

with

mat-i m.	case	sg.	dual	pl.
	nom.	*mat-i-s* (1)	*mat-ī* (5)	*mat-ay-as* (2, 3)
	voc.	*mat-ê* (2)	*mat-ī* (5)	*mat-ay-as* (2, 3)
	acc.	*mat-i-m* (1)	*mat-ī* (5)	*mat-ī-s* (7)
	instr.	*mat-y-ā* (3)	*mat-i-bhyām* (3)	*mat-i-bhis* (3)
	dat.	*mat-ay-ê* (2, 3)/*mat-y-âi* (10)	*mat-i-bhyām* (3)	*mat-i-bhyas* (3)
	abl.	*mat-ê*-s (2)/*mat-y-ās* (10)	*mat-i-bhyām* (3)	*mat-i-bhyas* (3)
	gen.	*mat-ê*-s (2)/*mat-y-ās* (10)	*mat-y-ôs* (1)	*mat-ī-nām* (8)
	loc.	*mat-âu* (4)/*mat-y-ām* (10)	*mat-y-ôs* (1)	*mat-i-ṣu* (3, 9)

1. We often find *i* before consonant versus *y* before vowel.

2. Some forms are "strong" in the sense of having the strong declension signs:

   a) *ê* before consonants or word-initial and

   b) *ay* before vowels.

   The distribution of these "strong" forms has nothing to do with the strong forms in the sense of fig. D.1, p. 204. In this sense, the vocative equals the stem with "strong" declension sign.

3. Some endings are very familiar (for example from *marut*): instr. sg. *ā*, dat. sg. *ê*, or instr. pl. *bhis*.

4. Loc. sg. *mat-âu* is strange in doing away with the stem-final *i*. Loc. sg. ending *âu* differs from the usual ending *i* encountered in *marut-i* or *dêv-ê* ← **dêv-a-i*. *âu* may have travelled from the *u*-stems like *guru* below.

5. "Since" *âu* occurs as the or as a loc. sg., *âu* cannot be used in the dual forms NVA. There, we find the long thematic vowel instead, as in *mun-ī* or *mat-ī*.

6. Instr. sg. m. *mun-i-n-ā* exhibits additional *n*, presumably modeled on *in* stems, for example *yôg-in-ā*. Indeed, these two words can be used together quite often.

7. Compare acc. pl.

   ◇ *mun-ī-n*, m., versus *mat-ī-s*, f., with

   ◇ *dêv-ā-n*, m., versus *dêv-ā-s*, f.

   Revisit subsection D.1.2, p. 203.

8. Gen. pl. are thematic as might be expected. The long vowels are explained by the laryngeal in the ie. ending *Hnōm*.

9. **RUKI**

10. The f. paradigm allows the thematic *nadī* endings in dative through locative singular, in line with this table:

	singular		
	dative	abl./gen.	locative
athem. nouns	*ê*	*as*	*i*
them. nouns	*âi*	*ās*	*ām*

Special case: *pati*

In compounds like

◇ *nara-pati* m. ("lord of the people, king")

◇ *vanas-pati* m. ("lord of the forest, tree")

the paradigm of *pati* ("husband") follows *muni* above. However, in isolation, *pati* shows some peculiarities but is "more regular" than *muni* or *pi-tar*:

pat-i m.	case	sg.	dual	pl.
	nom.	*pat-i-s*	*pat-ī*	*pat-ay-as*
	voc.	*pat-ê*	*pat-ī*	*pat-ay-as*
	acc.	*pat-i-m*	*pat-ī*	*pat-ī-n*
	instr.	*pat-y-ā* (1)	*pat-i-bhyām*	*pat-i-bhis*
	dat.	*pat-y-ê* (2)	*pat-i-bhyām*	*pat-i-bhyas*
	abl.	*pat-y-us* (3)	*pat-i-bhyām*	*pat-i-bhyas*
	gen.	*pat-y-us* (3)	*pat-y-ôs*	*pat-ī-nām*
	loc.	*pat-y-âu* (4)	*pat-y-ôs*	*pat-i-ṣu*

1. Instr. sg. *pat-y-ā* does not show unexpected *n* like *mun-i-n-ā*.

2. Dat. sg. *pat-y-ê* does not exhibit the unusual "strong" declension sign as does *mun-ay-ê*.

3. *pat-y-us* exhibits the *us*-ending otherwise known from

   ◇ kinship terms like *pit-us* (pp. 232)

   ◇ *tor*-nouns like *nê-t-us* (pp. 231)

   where, in a strange fashion, the *r* is dropped.

4. Loc. sg.

   ◇ *pat-y-âu* still exhibits the thematic vowel *i* in the form of the halfvowel while

   ◇ *mun-âu* can strangely do without.

u-stems (*gur-u*, *dhên-u*)

The *u*-stems, m. and f., are just as the *i*-stems. One only needs to copy and paste according to subsections B.2.2 and B.2.3 (pp. 20) and replace

◇ *i* by *u* and *y* by *v*

◇ *ê* by *ô* (and *ay* by *av*)

◇ *ī* by *ū*

Compare, again, a masculine paradigm

gur-u m.	case	sg.	dual	pl.
	nom.	*gur-u-s* (1)	*gur-ū* (5)	*gur-av-as* (2, 3)
	voc.	*gur-ô* (2)	*gur-ū* (5)	*gur-av-as* (2, 3)
	acc.	*gur-u-m* (1)	*gur-ū* (5)	*gur-ū-n* (7)
	instr.	*gur-u-ṇ-ā* (3, 6, 11)	*gur-u-bhyām* (3)	*gur-u-bhis* (3)
	dat.	*gur-av-ê* (2, 3)	*gur-u-bhyām* (3)	*gur-u-bhyas* (3)
	abl.	*gur-ô*-s (2)	*gur-u-bhyām* (3)	*gur-u-bhyas* (3)
	gen.	*gur-ô*-s (2)	*gur-v-ôs* (1)	*gur-ū-ṇām* (8, 11)
	loc.	*gur-âu* (4)	*gur-v-ôs* (1)	*gur-u-ṣu* (3, 9)

with a feminine one:

dhên-u m.	case	sg.	dual	pl.
	nom.	*dhên-u-s* (1)	*dhên-ū* (5)	*dhên-av-as* (2, 3)
	voc.	*dhên-ô* (2)	*dhên-ū* (5)	*dhên-av-as* (2, 3)
	acc.	*dhên-u-m* (1)	*dhên-ū* (5)	*dhên-ū-s* (7)
	instr.	*dhên-v-ā* (3)	*dhên-u-bhyām* (3)	*dhên-u-bhis* (3)
	dat.	*dhên-av-ê* (2, 3)/*dhên-v-âi* (10)	*dhên-u-bhyām* (3)	*dhên-u-bhyas* (3)
	abl.	*dhên-ô*-s (2)/*dhên-v-ās* (10)	*dhên-u-bhyām* (3)	*dhên-u-bhyas* (3)
	gen.	*dhên-ô*-s (2)/*dhên-v-ās* (10)	*dhên-v-ôs* (1)	*dhên-ū-nām* (8)
	loc.	*dhên-âu* (4)/*dhên-v-ām* (10)	*dhên-v-ôs* (1)	*dhên-u-ṣu* (3, 9)

1. ***hV***

2. **DIPH** in the sense of strong declension signs unrelated to fig. D.1. p. 204. In this sense, the vocative equals the stem with strong declension sign.

3. Familiar endings: instr. sg. *ā*, dat. sg. *ê*, or instr. pl. *bhis*.

4. Loc. sg. ending *âu* differs from the usual ending *i* encountered in *marut-i* or *dêv-ê* ← **dêv-a-i*.

5. "Since" *âu* occurs as the or as a loc. sg., *âu* cannot be used in the dual forms NVA. There, we find the long thematic vowel instead: *gur-ū* or *dhên-ū*.

6. Instr. sg. m. *gur-u-ṇ-ā* exhibits additional *n*, presumably modeled on *in* stems, for example *yôg-in-ā*. Indeed, these two words can be used together quite often.

7. Compare acc. pl.
   - ◇ *gur-ū-n*, m., versus *dhên-ū-s*, f., with
   - ◇ *mun-ī-n*, m., versus *mat-ī-s* and with
   - ◇ *dêv-ā-n*, m., versus *dêv-ā-s*, f.

8. Gen. pl. are thematic as might be expected. The long vowels are explained by the laryngeal in the ie. ending *Hnōm*.

9. **RUKI**

10. Thematic *nadī* endings in dative through locative singular

11. **Cer*n***

Neuter *u*- or *un*-stems and *ṛ* or *ṛṇ*-stems

The n. *u*-stems like *madh-u* ("honey") have been strongly influenced by n. *(v)in*-stems like *tapas-vin* (p. 230). Indeed, the speakers may have assumed a stem **madh-un*, rather than *madh-u*: It is instructive to compare the *madh-u*/*madh-un* paradigm with the *karm-an* paradigm (pp. 229).

madh-u/*madh-un* n.	case	sg.	dual	pl.
	nom.	*madh-u* (1)	*madh-un-ī* (2, 4)	*madh-ūn-i* (4)
	voc.	*madh-u*/*ô* (1, 3)	*madh-un-ī* (2, 4)	*madh-ūn-i* (4)
	acc.	*madh-u* (1)	*madh-un-ī* (2, 4)	*madh-ūn-i* (4)
	instr.	*madh-un-ā* (2)	*madh-u-bhyām* (5)	*madh-u-bhis* (5)
	dat.	*madh-un-ê* (2)	*madh-u-bhyām* (5)	*madh-u-bhyas* (5)
	abl.	*madh-un-as* (2)	*madh-u-bhyām* (5)	*madh-u-bhyas* (5)
	gen.	*madh-un-as* (2)	*madh-un-ôs* (2)	*madh-ū-nām* (6)
	loc.	*madh-un-i* (2)	*madh-un-ôs* (2)	*madh-u-ṣu* (7)

1. The stem *madh-u* is clearly present in sg. NVA.

2. The stem *madh-un* prevails in many other forms.

3. Besides *madh-u*, the second voc. sg. *madh-ô* also exists, similar to voc. sg. *gur-ô*.

4. Compare

◇ nom. dual *tapas-vin-ī* with *madh-un-ī* and

◇ nom. pl. *tapas-vīn-i* with *madh-ūn-i*.

Pl. NVA *madh-ūn-i* are probably due to analogy with forms like *phal-ā-ni* or *karm-ā-ṇi*.

5. *madh-u-bhis* and similar forms is explainable by the stem *madh-u* but also by the stem *madh-un* together with analogy with forms like *rāj-a-bhis* or *yôg-i-bhis* (p. 230).

6. The long vowel *ū* is easily explained by the laryngeal in the ie. ending *Hnōm*.

7. **RUKI**

At this point, we may introduce n. agent nouns because there declension resembles n. *madhu* very closely. We look at the paradigm for *gan-tṛ*. In order to focus on the similarities with *madh-u*/*madh-un* we assume two stems *gant-ṛ*/*gant-ṛṇ*:

gant-ṛ/*gant-ṛṇ* n.	case	sg.	dual	pl.
	nom.	*gant-ṛ*	*gant-ṛṇ-ī*	***gant-ṝṇ-i***
	voc.	*gant-ar*/*gantṛ* (!)	*gant-ṛṇ-ī*	***gant-ṝṇ-i***
	acc.	*gant-ṛ*	*gant-ṛṇ-ī*	***gant-ṝṇ-i***
	instr.	*gant-ṛṇ-ā*	*gant-ṛ-bhyām*	*gant-ṛ-bhis*
	dat.	*gant-ṛṇ-ê*	*gant-ṛ-bhyām*	*gant-ṛ-bhyas*
	abl.	*gant-ṛṇ-as*	*gant-ṛ-bhyām*	*gant-ṛ-bhyas*
	gen.	*gant-ṛṇ-as*	*gant-ṛṇ-ôs*	*gant-ṝ-ṇām*
	loc.	*gant-ṛṇ-i*	*gant-ṛṇ-ôs*	*gant-ṛ-ṣu*

The copy-paste operations involve replacing *madh* by *gant* and then

1. *u* by *ṛ*,

2. *un* by *ṛṇ* and,

3. *ūn* by *ṝṇ*

In particular, the voc. singulars also fit. We have

	f.g. of declension sign	z.g. of declension sign
madh-u	*madh-ô*	*madh-u*
gant-ṛ	*gant-ar*	*gant-ṛ*

D.4. Adverbs from fossilized case endings

Many adverbs stem from fossilized case endings.

D.4.1. Accusative

◇ *a-vaśyam* ("not to be wished → necessarily, indeed") ← *a* + *ya*-gerundive of *vaś* ("to wish")

◇ *ī-ṣat* ("being in that manner → a bit, somewhat") ← *ī* + n. pres. part. of *as* ("to be")

◇ *ciram* ("for a long time, long ago") from *cira* ("long")

◇ *taras* ("fast") from *taras* n. cons. ("ferry, advancement, energy")

◇ *nāma* ("by name"), see the declension on p. 228

◇ *nir-bharam* ("completely") ← *nis* + *bhara*

◇ *prati-dinam* ("every day") ← *prati* + *dinam*

◇ *praty-aham* ("every day") ← *prati* + *ahar* (but here as if acc. from *aham*, n., which does not exist)

◇ *yathākāman* ("according to desire, at will") ← *yathā* + *kāma* ("desire")

◇ *sādhu* ("well"), see *sādh* ("to be successful, to lead to one's goal")

◇ *sukham* ("happily")

D.4.2. Instrumental

◇ *a-khilēna* ("in its entirety, all in all") ← *a* + *khila* ("wasteland, rest")

◇ *a-cirêṇa* ("for a short time") ← *a* + *cira* ("long")

◇ *uccaiḥ* ("loud") ← *ucca* ("high")

◇ *tarêṇa* ("fast, by force") ← *taras* n. ("ferry, advancement, energy")

◇ *cirêṇa* ("after a long time") from *cira* ("long")

◇ *prāyêṇa* ("usually, probably") ← *pra-aya* ("quantity, a state or condition of life like youth, death")

◇ *vi-starêṇa* ("at length") ← *vi-stara* ("extension, detail", see *stṝ* in the dictionary)

◇ *sahas-ā* ("with might → forcibly, suddenly") from *sahas* n. ("might, power")

D.4.3. Ablative

◇ *a-cirāt* ("for a short time") ← *a* + *cira* ("long")

◇ *dūrāt* ("from afar") ← *dūra* ("far")

D.4.4. Locative

◇ *cirê* ("in a long time → finally") ← *cira* ("long")

◇ *dūrê* ("far away") ← *dūra* ("far")

◇ *sa-padi* ("immediately") ← *sa* ("together") + *pad* m. ("foot")

D.4.5. *tas*-suffix

The *tas*-suffix is used in the abl. sense.

◇ *agra-tas* ("first, in front") ← *agram* ("top, summit, beginning")

◇ *grāma-tas* ("from the village") ← *grāma* ("village")

◇ *pṛṣṭha-tas* ("behind") ← *pṛṣṭham* ("back")

◇ *śāstra-tas* ("according to the *śāstra*s") ← *śāstram* ("text, manual")

◇ *sva-tas* ("with one's own power") ← *sva* ("own")

D.4.6. *śas*-suffix

śas is added to numbers or quantifiers.

◇ *êkâika-śas* ("one by one") ← *êka* ("one") + *êka* + *śas*

◇ *prāya-śas* ("usually, probably") ← *pra-aya* ("quantity, a state or condition of life like youth, death")

◇ *śata-śas* ("by the hundred") ← *śatam* ("hundred")

D.4.7. *vat*-suffix

◇ *kapi-vat* ("like a monkey") ← *kapi* ("monkey")

D.4.8. *dhā*-suffix

dhā can often be translated as "-fold"

◇ *dvi-dhā* ("twofold") ← *dvi* ("two" in compounds)

◇ *bahu-dhā* ("manifold") ← *bahu* ("many")

D.5. Miscellanea

D.5.1. Derivatives

A number of derivatives seem to use something like the lengthened grade. However, it is not the verbal root that is lengthened (see pp. 137) but the first syllable. Consider these examples:

length. form	translation	origin
jānakī	daughter of *Janaka*	*Janaka* (name of a king)
dāśa-rath-i	son of *Daśa-rath-a*	*daśa* ("ten") + *rath-a* ("chariot")
pārvat-ī	daughter of the mountain	*parvat-a* (mountain)
pâutr-a	grandson	*putr-a* ("son")
prā-kṛt-a	elementary, natural	*pra-kṛt-a* ("accomplished")
lâuk-ik-a	worldly	*lôk-a* ("world")

Rarely, alpha privativum is lengthened in similar instances:

length. form	translation	origin
ā-kasmika	unforeseen	*a-kasmāt* ("without a why or a wherefore")
ā-jasr-ik-a	perpetual	*a-jasra* ("perpetual")

Lengthened grade, of alpha privativum or else, also occurs in neuter nouns with suffix *ya* indicating "-ness" or "-ity".

length. form	translation	origin
ā-tith-ya-m	hospitality	*a-tith-i* ("guest")
ā-rôg-ya-m	health	*a-rôg-a* ("health") ← *ruj*
ā-las-ya-m	idleness	*a-las-a* ("idle") ← *las*
âiśvar-ya-m	lordship	*īśvar-a* ("lord")
jāḍ-ya-m	stupidity	*jaḍa* ("stupid")
trâiguṇ-ya-m	pertaining to the three g.	*triguṇās* ("three *guṇa*s")
dāridr-ya-m	poverty	*daridr-a* ("poor")
dhâir-ya-m	resolution	*dhīr-a* ("steady, persistent")
pāṇḍit-ya-m	scholarliness	*paṇḍit-a* ("scholar")
mādur-ya-m	sweetness	*madur-a* ("sweet")
mâitr-ya-m	friendship	*mitr-am* ("friend")
vāṇij-ya-m	trade	*vaṇij* ("merchant")
śaur-ya-m	valor	*śur-a* ("brave")
svā-sth-ya-m	health	*sva-stha* ("well at ease") ← *sthā*

D.5.2. Ātmanêpada present-tense participles

The ātmanêpada present-tense participles vary according to whether we are dealing with thematic or with athematic verbs.

◇ For athematic verbs, the ending *ā́na* is attached to the weak present stem. For example, the present participle from *duh, duh-mas* ("we milk") is *duh-ā́na*.

◇ For thematic verbs, the ending *a-mā́na* is attached to the present stem. For example, the present participle from *man, man-ya-tê* ("to think") is *man-y-a-mā́na*.

It is argued that

$$\text{ie. } {}^{*}mh_1no$$

is the underlying form. It is also present in the lat. B *alu-mnu-s*. Depending on whether the verb is athematic or thematic, one obtains:

◇ Athematic verbs attach mh_1no directly to their weak present stem causing m to become syllabic. Then **Lar_SY** (ie. $\mathrm{C}\underset{\circ}{m}\mathrm{HC} \rightarrow C\bar{a}C$) regularly produces *ā́na*.

◇ By **Lar_*V***, thematic verbs should have produced *a-mina* (a Prakrit form *mina* does indeed exist). Leveling was then responsible for producing oi. and even ved. *a-mā́na*:

	a-mina	
influenced by	*ā́na*	with long $\bar{a}$ before n
turns into	*a-mā́na*	with long $\bar{a}$ before n

E. Etymological dictionary

E.1. Introductory remarks

If you are looking for a specific oi. word, you may try to check in the dictionary. Alternatively, you may check the index to see whether any Old Indian, German, English or other word is to be found. While we adhere to the usual Indian rank order in the dictionary, the index pretty much uses the order of the Latin alphabet.

For nouns and their gender, consult section A.6 (pp. 7) on the conventions used in this book. For verbs, we often record important forms, usually in the following pattern:

oi. root (meaning)		
present tense	3. pers. sg.	3. pers. pl.
infinitive		
PPP		
future	3. pers. sg.	3. pers. pl.
imperfect	3. pers. sg.	3. pers. pl.
perfect	3. pers. sg.	3. pers. pl.
aorist	3. pers. sg.	3. pers. pl.
desiderative	3. pers. sg.	adjective

If several forms exist, only one or seldomly two are cited.

E.2. Vowels

E.2.1. *a*

a- negating prefix (p. 66)
before *C*

◇ ***a-ga*** ("not going → tree") with second part *ga* from *gam* (pp. 135)

◇ ***a-vaśyam*** adv. ("not to be wished → necessarily, indeed"), see vaś ("to wish")

before *V*

◇ ***an-ā-gata*** ("not having come → future") with last part PPP *gata* of *gam*

◇ ***an-anta*** ("without end → infinite")

◇ ***an-êka*** ("not one → manyfold, several") with second part *êka* ("one, single")

◇ ***an-ṛta*** ("not true") with second part PPP *ṛta*

- "fitting → true" from *ar* ("to fit, to connect") or
- "reached → true" from *ṛ* ("to rise, to reach")

an-iṭ ("without *i*") with second part *iṭ* (traditional expression for oi. *i*)

← ie. $*\underset{\circ}{n}$ (**SY_*N***), see ie. **ne* s.v. *na*

→ gr. B *a*-theist, *an*-archy (just like Sanskrit before consonant or vowel, respectively)

∼ lat. B *in*-effective, *im*-possible

∼ e. *un*-true, *un*-believable

∼ nhg. *un*-gläubig

aṃhas n. ("fear, distress")
aṃhu n. ("straight, narrow")

← ie. root $*h_2emǵh$

→ lat. *ang-ere* ("to stangle, to choke") with B *anxious*

∼ nhg. *eng* ("narrow") ∼ nhg. *Ang*-st ("fear")

ak-ṣa m. ("axis, pole of a car"), see *aj*

← ie. $*h_2eǵ$-*s*

→ lat. B *axis*

∼ e. *axle* ∼ nhg. *Achse*

akṣi n. ("eye"), ***akṣan*** n. ("eye")
an-akṣa ("blind"), see p. 66
an-īka ("face") ← ie. $*h_1eni$-h_3k^w-*o* (**Lar_*V***, for first part, see e. *in* ∼ nhg. *in*)
īkṣ 1. class: ***īkṣate*** ("to see"), originally a desiderative (p. 131)

← ie. root $*h_3ek^w$-*s*/ $*h_3ok^w$-*s*

→ gr. B *op-tics*

∼ lat. *oc-ulus* ("eye") with B *oc-ular* ("lense") etc.

∼ e. *eye* ∼ nhg. *Auge* (difficult, perhaps a version of **VER**)

agni m. (“fire”)
aṅgāra (“coal”)

← ie. $^*h_1\underset{\circ}{n}g^w$*-ni* (“fire”)

→ lat. *ignis*, e. B to *ignite*

agram (“top, summit, beginning”)
agrê loc. sg. of above, prep. with gen. (“in front, ahead of”)
êkāgra (“one-pointed, focussed”) with first part *êka* (“one, single”)

a-ghn-ya (“bull”)
a-ghn-yā gerundive (p. 141, “not to be killed → cow”)
see alpha privativum (p. 66), **SY_*N*** and *han*

aṅka (“hook, curve”)

← ie. **Honk-o* (“curvature”)

→ gr. B *oncology*

aj 1. class: ***ajati*** (“to drive”)
aja (difficult: “the animal that is led → goat”)
ajijiṣati desiderative (“he wishes to drive”), produced by levelling and analogy
aj-ma or ***ajman*** n. (“path, move”)
āji m./f. (“race course, contest”)
samāja m. (“meeting, gathering”)

← ie. root $^*h_2e\acute{g}$ (“to drive, to do”)

→ gr. B *dem-ag-ogue* and *ped-ag-ogue*

∼ lat. B

- ◇ before vowel *ag-ile*, *ag-ent*, *ag-enda*, *ag-itate* and the less obvious *cogitation* (also in: *cogito ergo sum*), *litigation*, *nav-igation* (for first part, see *nâu*)
- ◇ before voiceless *t* (turning *ag* into ak) *act*, *action*, *active*, *actual*, *re-act*

See *akṣa, ajra, êj.*

ajira (“fast”) (**SY_*N***, **Lar_*V***, ***rl***)

← ie. $^*h_2\underset{\circ}{n}gh_1lo$

→ gr. *aggelos* (“messenger”) ← ie. *$^*h_2en\underset{\circ}{g}h_1lo$* with B in English *angel* and German *Engel*

ajra (“cattle ground”), see *aj*

← ie. *$^*h_2eǵ$-ro* (“where something is driven to → cattle ground”)

→ lat. adj. *agrarius* whence e. *agrarian* (economy, for example)

∼ e. *acre* (“cattle ground → field → surface measure of about 4000 square meters”)

∼ nhg. *Acker* (“field”) (the *r* has prevented the shift to *ch*, see p. 73)

añc 1. class: ***añcati*** or
ac 1. class: ***acati*** (“to bend, to go”)
aṅka (“hook, curve”), see s.v. *aṅka*

← ie. root *$^*Henk$*

Many *ac/añc* words like

preposition	*ac* adjective	*ac* adverb
anu (“along”)	*anv-añc* (“dir. upward, northern”)	*anv-ak* (“behind”)
apa (“away, off, back”)	*apāñc* (“dir. backward, western”)	*apāk* (“in or from the west”)
ava (“off, away”)	*av-añc* (“dir. downward, southern”)	*avāk* (“downward”)
ud (“out”)	*ud-ac* (“dir. upward, northern”)	*ud-ak* (“in or from the north”)
		prāg-ud-ac (“north-eastern”)
tiras (“across, over”)	*tiry-ac* (“sideward”)	
ni (“into”)	*ny-ac* (“downward”)	
pra (“before”)	*prāc* (“dir. forward, eastern”)	*prāk* (“in front, in the east”)

(where “dir.” stands for directed)

añj 7. class: ***a-na-k-ti*** (“to anoint, to reveal”) (preferably: *aj, a-na-k-ti* where infix is formed as in *yuj, yu-nak-ti*, see pp. 87)
abhi-vy-ak-ta (“clear, manifest”)

← ie. root *$^*h_3eng^w$* (“to anoint”)

→ lat. B *unction* and *ointment* (via old French)

at 1. class: ***atati*** ("to go, to roam")
atya ("steed, runner")
later with cerebralization:

◇ ***aṭ*** 1. class: ***aṭati*** ("to go, to roam")

◇ ***aṭavī*** ("forest")

← ie. root $^*h_2et$ ("to drive, to do")

→ lat. *annus* ("year") ← ie. $^*h_2et$-*nos* (similarly in *penna*, see *pat*) with B *annual*

ati ("beyond, a lot")
atīva ("exceedingly, very") ← *ati* + *iva*

← ie. $^*h_1eti$, loc. sg. of root noun ie. $^*h_1et$ (see s.v. *at*)

→ lat. *et* ("and") known from *et cetera* ("and the remaining") and the sign & where you can, with some effort, recognize *e* (the upper part) and *t*

a-tithi m. ("guest") ← *a* + *tithi* m. ("lunar day, period of 15 days"), i.e., a guest is somebody who does not stay as long as 15 days
ātithya ("hospitable, hospitality") with *ya*-suffix and vṛddhi

ad 2. class: ***atti*** ("to eat")
annam ("food") ← *ad-nam*

ad ("to eat")		
present tense	*at-ti* (1)	*ad-an-ti*
infinitive	*at-tum* (1)	
future	*at-sy-a-ti* (1)	*at-sy-a-n-ti*
imperfect	*ād-a-t* (2)	*ād-an* (3)
perfect	*ād-a* (4)	*ād-us* (5)

1. **BA**
2. *ād* regularly from *a-ad* with imperfect marker *a* ← ie. *e*, but irregularly with thematic vowel.
3. Perhaps regular from weak form ie. $^*e$-h_1d-.
4. *ād* regularly from *a-ad* by reduplication.
5. Compare *ca-kr-us*. Perhaps *ād-us* is regular from weak form ie. $^*h_1e$-h_1d-.

← ie. root $^*h_1ed$

→ Full-grade representatives

◇ e. *eat* (**GER**)

◇ nhg. *ess-en* (**NHG_C**)

~ Zero-grade representatives: The following present participles derive from ie. $^*h_1d$-*ent*/ $^*h_1d$-*ont* ("eating, eater"):

◇ oi. *danta* ("an elephant's tusk")

◇ gr. B *dont*-ology

◇ lat. B *dent*-al

◇ e. *tooth* (**NHG_E**) ~ nhg. *Zahn* (**NHG_C**)

a-diti f. ("liberation")
also: name of a goddess, mother of the *āditya*s, like *mitra*, *varuṇa*
See p. 66 and *dā* ("to bind").

adhara ("low, inferior")
adhas ("under")

← ie. $^*H\underset{\circ}{n}dhero/^*H\underset{\circ}{n}dhes$

→ lat. B *infra*structure

~ e. *under* ~ nhg. *unter* (But compare e. *hound* ~ nhg. *Hund* on p. 73 where germ. *d* is not changed to nhg. *t* after *n*)

an-ala ("insatiable, fire") where the second part is related to
alam ("enough")

anas n. ("vehicle for heavy burdens, cart")
anaḍvah n. ("ox, draught animal ← pulling a cart") with second part *vah* (difficult cerebralization)

← ie. $^*h_3enos$ (ie. *o* ← h_3e and hence non-application of **Lo**)

→ lat. *onus* (gen. *oneris*) as in "*onus* of proof", lat. B *onerous*, to *ex-oner-ate*

an 2. class: ***aniti*** ("to breathe") and, perhaps, ***ánila*** ("wind")
ana ("breath")

◇ ***ānа*** ← *ā* + *ana* ("inhalation, mouth")

◇ ***apāna*** ← *apa* + *ana* (“downward breath, elimination”)

◇ ***udāna*** ← *ud* + *ana* (“upward breath”)

◇ ***prāṇa*** ← *pra* + *ana* (“vital breath”)

◇ ***vyāna*** ← *vi* + *ā* + *ana* (“moving breath, circulation”) (or by analogy with *prāṇa*)

◇ ***samāna*** ← *sama* + *ana* (“even breath, digestion”)

aninișati desiderative (difficult, see p. 131)

← ie. root $^*h_2enh_1$

→ lat. B *animated*, *animal*, *ex-animate* from lat. *anima* (“wind”)/ *animus* (“soul”)

anu (“along, corresponding”)
anu-ja (“being born later → younger (brother)”), see s.v. *jan*
anv-añc (“folloing”) ← *anu-añc*, see *añc* above
anv-ak (“behind”)

anta (“border, ending”)
vêdānta (“end of Vedic literature”), see *vid*
See antara (“another”).

antar (“within”)
antara (“interior, intimate”)
antarā (“in between, inside”)
antarikṣam/ ***antarīkṣam*** (“transparent space → airspace”) with second part from *īkṣ*
antar-uṣya (“station, dwelling place”) with second part from *vas* (“to dwell”)
antas-tyam (“intestines”) ← *antar* (wrong sandhi *r* → *s* before *t*) + suffix *-tya* (compare *apa-tyam*)

← ie. $^*h_1enter$/ $h_2\underset{\circ}{n}t\overset{\angle}{e}r$

→ lat. *inter* as in B *inter*-national

∼ lat. B *intestines* ← ie. $^*h_1enter$-sth_2-*o* (for second part, see s.v. *sthā*)

∼ nhg. *unter* (“among”) as in “Wolf *unter* Wölfen”, a 1937 novel by Hans Fallada

The ie. stress was on the second syllable, at least in ie. $h_2\underset{\circ}{n}t\overset{\angle}{e}r$. Then, we have expected *t* in *unter* as in *Vater* (see *pi-tar*). Compare nhg. *unter* s.v. s.v. *adhas*.

anta-ra (“another”)
anta-ma (“next, nearest”)

← ie. *h_1*entero*

→ e. *other* ∼ nhg. *anderer* (**NHG_E** for loss of e. *n*)

Perhaps related to *an-ta* (that on the other side). Ved. *an-tama* means "last".

anti ("opposite, in the face of")
anti-mitra ("surrounded by friends")

← ie. *h_2*ent* ("front, face"), a root noun with locative oi. *anti*

→ gr.

◇ B *anti-pode* ("who has his feet against ours"), see s.v. *pad*

◇ B *anti-biotics*, see *jīv*

∼ lat. *ante* known from *ante Christum natum*

antyêṣṭi f. ("offering for the dead") ← *antya* ("being at the end", see *anta* above) + *iṣṭi* f. ("offering", see *yaj*)

annam, see *ad*

anya ("other")

← ie. **an-yo/*al-yo*

∼ ogr. *allos* and gr. B *allergy*, *allegory*

∼ lat. *alius* and lat. B *alibi* (see *iha*)

anyônyas ("one another") is petrified from nom. sg. *anyas anyas* by **CpL*z*.** The acc. sg. is **not** *anyamanyam*, but *anyônyam*.

See also *ari*.

anv-añc ("following"), see *anu* and *añc*

ap f. ("water"), only pl.
with compound-final "zero-grades" (pp. 135):

◇ ***apsu-ja*** ("born in the waters") formed with loc. rather than the usual stem, see *jan*

◇ ***apsu-jit*** ("vanquishing among the waters or in the region of the clouds"), again with loc., see *ji*

◇ ***ab-da*** ("water giver → cloud", "when clouds reappear → year") with **BA**, see *dā*

◇ ***ab-dhi*** ("holding water → ocean") with **BA**, see *dhā*

with long vowel in first part by zero-grade h_2p (**Lar_V**):

◇ ***dvīpa*** ("having water on two sides → island") ← *dvi* as in *dvi-pad* ("with two feet") or *dvi-vacana* ("dual")

◇ ***anūpa*** ("near the water, watery → marshy") ← *anu*

◇ ***nīpa*** ("towards the water → lowly") ← *ni*

◇ ***pratīpa*** ("against the stream, going in opposite direction → adverse, displeasing") ← *prati*

◇ ***samīpa*** ("with the stream → near, adjacent, close at hand") ← *sam* + *ap* in analogy with *pratīpa*

ap	case	pl.
	nom.	*āp-as* (2)
	voc.	*āp-as* (2)
	acc.	*ap-as* (1)
	instr.	*ad-bhis* (3)
	dat.	*ad-bhyas* (3)
	abl.	*ad-bhyas* (3)
	gen.	*ap-ām* (1)
	loc.	*ap-su* (1)

1. The general pattern of *ap* is close to that of *marut* (see p. 211).
2. Long *ā* in nom. and voc. cases is mysterious.
3. Dissimilation *ap-bhis* → *ad-bhis*

← ie. $*h_2ep/*h_2ek^w$

→ lat. *aqua*

apa ("away")
apa-ra (comparative: "a later one, another one")
apa-ma (superlative: "the latest, the last")
apa-taram (superlative: "farther off")
apāñc ("backward, western"), see añc
apa-tyam ("child, offspring"), for suffix *tya* compare *anta-styam*

← ie. *h_2ep-*ó* (“off”)

→ ogr. *apo* and gr. B *apo*calypse (for sec. part see *kulam*)

∼ lat. *ab* and lat. B *ab-straction* or *ab-duction* (where voicing may be due lat. words like *ab-dūcere*)

∼ germ.

◇ e. *of* and e. *off* ∼ nhg. *ab* (**VER**)

◇ nhg. *aber* (**VER**) (“but”) ∼ oi. *apara*

◇ e. *after* (“but”) ∼ oi. *apataram*

ap-as (“action, deed, rite”)
ap-nas (“wealth, action”)

← ie. **opes/h*$_3$*epes* (with regular non-application of **L*o***)

→ lat. *opus* with B *opera* and *opulent* and German *opfern* (“to sacrifice”) with unclear **NHG_*C*** (we should expect n.at. *offern*)

∼ lat. *officium* ← **opi-fak-io* with B *official*

∼ nhg. *üben* (“to exercise”), *üblich* (**VER**)

Both Sanskrit (with *apnas* from *apas*) and Latin (see *opulent*) convey the idea that you get rich from working.

apāñc (“backward, western”), see *apa* and *añc*

api (“also, even”, question particle)

← ie. *h_1epi, loc. sg. of a root noun

api (“at, by around”)

← ie. *h_1opi

→ ogr. *epi* in gr. B *epi-dermis*

∼ lat. *op-timus* (compare *intimus* s.v. *-tama*)

abda

◇ ***ab-da*** (“water giver → cloud”, “when clouds reappear → year”) with **BA**, see *ap* und *dā*

◇ ***a-bd-a*** ← **a-pd-a* ("without feet, inaccessable") with **BA**, see *pad*

abhi ("around, on both sides, toward")

← ie. **h*$_2$*m̥bhi*

→ gr. B *amphi*-theater

∼ lat. B *ambi*-ence, *ambi*-valent, *ambi*-guous

See also *ubha* ("both").

abhi-ṣ-ṭi m. ("protector")/ ***abhi-ṣ-ṭi*** f. ("protection"), see *as* for second part

abhīṣṭa ("desired") ← *abhi* and *iṣṭa* (PPP of *iṣ*)

abhīśu ("rein") ← *abhi* and *īś*

abhram ("cloud, airy space")

← ie. **nebh* ("sky, mist") and zero-grade ie. **n̥bh-ro*

Compare *ambhas* and *nabhas*.

a-bhva ("not being (good) → monstrous, powerful"), see p. 137

← ie. **n̥bhv-o*

am 2. class: ***amīti*** ("to grab, to harm, to swear")
ama-tram ("the pot that is grabbed → drinking vessel")

← ie. root **h*$_3$*emh*$_3$

→ lat. *am-āre* ("to love" ← "to regard as a friend"← "to take the hand of") with B *am-ateur* and PN Wolfgang *Ama*deus (for second part, see *deva*) Mozart

∼ lat. *amīcus* ("friend") and B *amicable*

a-mati ("poor") f. ("not knowing, poverty")
See *man*. Someone is considered poor because he is not thought of, or not borne in mind by, human or divine benefactors.

amā ("home, at home")

amāt ("from home")
amā-tya ("house companion, minister"), compare *apa-tya*
See *svāmin*.

a-mnas adv. ("without thinking → immediately, unawares")
See *man*.

ambā/ ambī ("mother"), babble word like unrelated German *Amme* or English *nana*

ambu n. ("water"), probably not related to *ambhas*

a-mbhas ("not mist → water")

← **n̥-nbh* with **BA**. Difficult because **SY_Conf** would yield *nabha*. See *abhram* and *nábhas*.

ambhas also means power because a flood can be very powerful.

ayas n. cons. ("ore, iron")

← ie. *$^{*}h_2eyes$/ *ayes* n. ("bronze")

→ lat. *aes*, *aeris* n. ("copper, bronze")

∼ e. *ore*

∼ nhg. *ehern* ("brazen, iron")

a-yogū ("girl without brothers (and sisters)")
See alpha privativum on p. 66, *yuj*, and other feminine family nouns like *vadhū* (s.v. vadh) and *śvaśrū*.

ar ("to fit, to connect")
ara ("spoke of a wheel")
ṛta ("fitting, true") PPP, but see *ṛ*
an-ṛta ("not well fitted → not true") with alpha privativum, but see *ṛ*
ṛ-tu m. ("time of year, right time") and see *ṛtv-ij*
ara-mati f. ("right mind → piety")
aram/alam adv. ("sufficient, properly") (***rl***)
alakam adv. ("in vain") (***rl***)

← ie. root *$^{*}h_2er$

→ lat. B *art* ("the fitting → skill"), with *m*-extension lat. B *arma-ture*, *arma-ment* ("what is fitted together → tool → weapon")

araṇi/araṇī f. ("wood for producing fire")
araṇa ("far away, foreign")
araṇya ("foreign land, forest")
araṇyavāsin = ***araṇyavāukas*** = ***vanāukas*** (see *vas* and *ôkas*)

aratni n. ("ellbow") (***rl***)

← ie. **Heh*$_3$*l-*

→ e. *el*bow ∼ nhg. *Elle* (unit of length, often from the tip of the middle finger to the bottom of the elbow), *Ellbogen/ Ellenbogen*

Compare s.v. *bhuj*.

ari m. ("enemy")
arya/ārya ("lord")
aryaman m. (name of a Vedic god, "associated with guests") with *mant* suffix as in *mati-mant* ("with intellect → clever")
Semantics:

◇ *ari* originally means "stragner" whence "enemy" in classicical Sanskrit, but "guest" in the Ṛgveda"

◇ *ārya* (English B *aryan*) used by the Old Indians to describe themselves as people who are being hospitable to strangers

◇ *ari* might be a person who presents himself in a fitting manner (see ar above) as a guest or as an enemy

◇ *ari* is the other, see *anya*

aritṛ ("rower")

← ie. root **h*$_1$*reh*$_1$ ("to oar")

→ e. to *row* ∼ nhg. *Ruder* ("rudder")

arc 1. clcass: ***arcati*** ("to shine, to praise")

← ie. **h*$_1$*erk*^{w} (**SPal**)

arjuna ("white, silvery")
arjata ("white, silvery")

← ie. $^*h_2erǵ$-*u* ("white")/ $^*h_2\underset{\circ}{r}ǵ$-*nt-o* ("silver")

→ lat.

◇ *argentum* ("silver") → fr. *argent*

◇ B *argument* ("what makes clear")

artha ("wealth, meaning")
sārtha ("caravan") ← *sa* ("together with") + *artha*
bhūtārtha ("fact, issue") ← *bhūta* (PPP of *bhū*) + *artha*

ardha ("half, part")

← ie. $^*h_2ordhh_1$-*i* ("wheel rim")

← lat. *orbis* (with *b* after *r*) as in the pope's blessing *urbi et orbi* and B *orbit*

arbha ("small, weak")

← ie. $^*h_2orbho$

→ gr. B *orphan* (**OGR**)

∼ nhg. *Erbe* ("what the orphan obtains, bequest"), *Arbeit* ("done by the orphan → labour"), *arm* ("being without parents → poor")

arśas n. ("hemorrhoids")

← ie. $^*h_1elḱes$

→ gr. *helkos* ("abcess, ulcer")

∼ lat. *ulcus* and B *ulcer*

arh 1. class: ***arhati*** ("to deserve, to have to, to be worthy")

← ie. root $^*h_2elg^wh$

→ gr. *alphagein* ("to deserve")

a-lasa (“inert, languid”) ← *a* + *rasa* (“plant juice, essence”) (***rl***), see *ṛṣ*

av 1. class: ***avati*** (“to help”)
ūta ← ie. **h*$_2$*uH-to* PPP (**Lar_*V***), also in *indrôta* ← *indra* + *ūta* (“helped by Indra”)
ūti f./m. (“help”)
avitum ← **h*$_1$*euH-tum* infinitive (**Lar_*V*** between consonants)
ô-man m. (“protection, grace”) ← **h*$_1$*euH-m*

← ie. root **h*$_1$*euH*

→ lat. *iuvāre*

av 1. class: ***avati*** (“to enjoy”)
avasa (“refreshment, protecting”)
aviṣyu (“desirous”)
avitum ← **h*$_2$*euH-tum* infinitive (**Lar_*V*** between consonants)

← ie. root **h*$_2$*euH*

→ lat. B *av-id*, *av-arice*, *au-dacity* (“wanting very much → daring”)

ava (“down, away”)
ava-ra (comparative: “a lower one, a later one”)
ava-ma (superlative: “the lowest, the last”)
avāñc (“directed downward”) ← *ava-añc*, see *añc*
avāk (“downward”), see *añc*

← ie. **h*$_2$*eu* (“away”)

→ lat. *aut ... aut* (exclusive *or*: “either ... or”)

ava-sāna (“dismounting from a horse”)
ava-sātṛ (“deliverer, liberator”)

← ie. **seh*$_2$*-no*

→ lat. *sānus* (“healty”) with B *sane*

avi m. (“sheep”)

← ie. **ovi/h*$_3$*evi* (ie. *o* ← *h*$_3$*e* and hence regular non-application of **L*o***)

→ lat. *ovis* with B *ovine* (“with respect to sheep”)

∼ e. *ewe*

aś 9. class: ***aśnāti*** ("to eat"), perhaps the same origin as *aś* ("to get")
prātar-āśa ("breakfast") ← *prātar* ("in the morning") + *āśa* ("meal")
phalāśin ("vegetarian") ← *phala* ("fruit") + *āśa* ("meal") + *in* suffix
aśitum infinitive

aś 5. class: ***aśnôti*** ("to reach, to get"), perhaps the same origin as *aś* ("to eat"), see p. 191

← ie. root $^*h_2ne(n)k\acute{}$

aś-ri f. ("angle, edge")
aś-man m. ("stone")

← ie. $^*h_2ok\acute{}$

→ gr. *akro-polis* ("pointed town, castle")

∼ lat. B *medi-ocre* (for first part, see *madhya*)

aśru n. ("tear")

∼ probably somehow related to e. *tear* ∼ nhg. *Zähre* ("tear", but not in use) ∼ nhg. *Träne*

aśva ("horse")
aśv-in ("having horses", a pair of gods who use horses to pull the sun across the sky)
āśu ("fast") ← reduplicated ie. $^*h_1o\text{-}h_1k\acute{}\text{-}u$ (unclear)
āśv-aśva← *āśu* + *aśva* ("having fast horses")

← ie. $^*h_1ek\acute{}vo$

→ gr. B *hippo*, *hippodrome*

∼ lat. B *equestrian*

aśvattha ("banyan tree ← horse food") ← *aśva* ("horse") + *d* (zero grade of *ad*, "to eat") + *tha* (suffix)

aṣṭā / ***aṣṭâu*** ("acht")

← ie. $^*h_3ek\acute{}to$ / $^*ok\acute{}to$

→ gr. B *octo-pus*/*octo-po* (“with eight feet”), see *pad* for second part

∼ lat. B *October* (“the eighth month, with March being the first one in the Roman calendar”), *octave*

∼ e. *eight* ∼ nhg. *acht*

as 4. class: ***asyati*** (“to throw, to shoot”)
as-ra (“throwing, painful”)
as-i m. (“sword”)
abhy-as-ta (“repetition, learning”) ← *abhi* (“around, on both sides, toward”) + *asta* (PPP of *as*)
abhy-ās-a (“repetition, reduplication”) ← *abhi* (“around, on both sides, toward”) + *ās-a* (lengthened grade of *as* with a suffix)

as 2. class: ***asti*** (“to exist, to be”), paradigm on p. 154
as-u m. (“living, existence”), in particular in
gatāsu (“with life gone away, dead”) ← *gata* (PPP of gam) + *asu*
s-at (“being, good”), adj. from pres.P of *as* (“to be”) with

◇ ***sat-kavi*** m. (“good poet”), see *kavi*

◇ ***ī-ṣat*** (“being in that manner → a bit, somewhat”) ← *ī* + *sat* (n. pres.P)

◇ ***sat-tvam*** (“being, nature, living being”) ← *sat* + *tva* (suffix)

◇ ***bodhisattva*** (“a Buddha saint”) has often been written as *bodhisatva* in Buddhist Hybrid Sanskrit. See *saj*.

◇ ***sat-ya*** (“true, real”) ← *sat* + *ya* (suffix)

astam (“where someone is → home, home country”) may be related, used in ***astam gacchati*** (“he dies”, “it (the sun) sets”), but see also *nas*.
asura (“lord of life, god, demon”) ← *asu* + *ra* (suffix) may also belong here. In any case, misunderstanding this as *a* + *sura*,
sura (“not demon, god”) has been created by back-formation.
upa-s-ti m. (“servant”) with first part preposition *upa*
abhi-ṣ-ṭi m. (“protector”)/ ***abhi-ṣ-ṭi*** f. (“protection”) with first part preposition *abhi*

← ie. root $^*h_1es$

→ lat.

◇ *est* → fr. *il est*

◇ B *ab-s-ent*, *pre-s-ent* (both zero-grade pres.P, similar to oi. *s-at* and lat. B *client* (s.v. *śri*)), *inter-es-t*

$\sim$ e. *is* $\sim$ nhg. *ist*

See *su*.

asūyati ("he grumbles, he resents") $\leftarrow$ *a* ("not") + *su* ("good"), unclear

asṛj n. ("blood")

$\leftarrow$ ie. $^*h_1esh_2$- (difficult)

$\rightarrow$ lat. B *sanguine* ("in relation to blood $\rightarrow$ optimistic")

asthi n. ("bone")

$\leftarrow$ ie. $^*h_3ost\text{-}h_2$

$\rightarrow$ gr. B *osteoporosis*

$\sim$ lat. B *osseous* ("concerning bones"), to *ossify*

aham

$\leftarrow$ ie. $^*h_1e\acute{g}oh_2m$

$\rightarrow$ lat. $ego\bar{}$ with B *egotism*

$\sim$ Berlinish *icke* (**GER**)

$\sim$ e. *I* $\sim$ nhg. *ich*

Courageous laryngalists defend this development:

lat./ogr. $ego\bar{}$
$\leftarrow$ ie. $^*h_1e\acute{g}oh_2/h_1e\acute{g}oh_2m$
$\rightarrow$ $h_1e\acute{g}h_2om$ (metathesis of *o* and h_2, similar to **Lar_MTh**)
$\rightarrow$ $e\acute{g}hom$ (**Lar_*V***, **Lar_*CH***)
$\rightarrow$ *ehom* (**PPal**)
$\rightarrow$ *aham* (***aā***)

ahar/ ahan n. ("day")
aho-rātra, n. ("day and night"), see remark 4 below
praty-aham ("daily, every day"), see section D.4, pp. 244

ahar/ahan/ahas n.	case	sg.	dual	pl.
	nom.	*ahar* (1)	*ahn-ī/ahan-ī* (2, 3)	***ahān-i*** (6)
	voc.	*ahar* (1)	*ahn-ī/ahan-ī* (2, 3)	***ahān-i*** (6)
	acc.	*ahar* (1)	*ahn-ī/ahan-ī* (2, 3)	***ahān-i*** (6)
	instr.	*ahn-ā* (2)	*aho-bhyām* (4)	*aho-bhis* (4)
	dat.	*ahn-ê* (2)	*aho-bhyām* (4)	*aho-bhyas* (4)
	abl.	*ahn-as* (2)	*aho-bhyām* (4)	*aho-bhyas* (4)
	gen.	*ahn-as* (2)	*ahn-ôs* (2)	*ahn-ām* (2)
	loc.	*ahn-i/ahan-i* (2, 3)	*ahn-ôs* (2)	*ahas-su/ahaḥ-su* (5)

1. The first stem *ahar* serves as NVA singular.
2. Building on the second stem *ahan*, many forms follow the *nāman* pattern (p. 228).
3. Compare loc. sg. *nām-n-i/nām-an-i* with *ahn-i/ahan-i*. The second forms are not strong forms because strong forms exhibit Brugmann's law (see 5). Instead, they have spilled over from words like the *karm-an* (p. 229).
4. Taking *ahas* as a third stem, one obtain *aho-bhis* and similar forms (p. 213). The sandhi rule applied is similar to **CpL*z***, but note that the change is not a word-final one.
5. The third stem is also in use in loc. pl., compare *manas-su/manaḥ-su* (p. 213).
6. **L*o***

E.2.2. *ā*

ātman m. ("self")

← ie. **éh₁t-mo(n)* with dat. sg. **h₁t-mé(n)-ei*

→ Luther's bible *Odem* ∼ nhg. *Atem* (probably built on a weak form, see **VER**, p. 75)

ādhra ("needy, weak, poor"), see **Lar_SY**, see pp. 121
nādh 1. class: ***nādhatê*** ("to be needy, to beg")

← ie. **neHdh*

Unrelated *nāth* 1. class: *nāthatê* has the same meaning as *nādh*.

āp 5. class: ***āp-nôti*** ("to obtain") ← ie. **h₁e-h₁p-neu* (a reduplicated present form)

← ie. root *h_1ep

→ lat.

◇ B *op-t-ion*, to *ad-op-t*

◇ B *ad-ep-t*, *in-ep-t* (p. 66)

∼ e. to *gi-ve* ∼ nhg. *ge-ben* ← ie. *$k\acute{o}(m)$-h_1ep* (doubtful derivation, see s.v. *gabha*)

ā-yus n. (“life”), paradigm on p. 214
ā-yur-veda (“medical science”) (**Vis**, see *vid*)
yuvanm. (“youngster”) ← ie. zero-grade *h_2yu* (paradigm on p. 214)

← ie. *h_2oy-u-*

→ gr. B *eon* (“age, lifetime”)

∼ lat.

◇ B *eternal* ← olat. *aeviternus*

◇ *iustus* (“just”) with B *just*, B *jurisdiction*, *ad-judicate*

∼ nhg. *ewig* (“forever”)

āvis (“openly, manifestly”)

← ie. *h_2ev-is* (“clearly”)

→ lat.

◇ B *audition* ← lat. *audīre* (“to hear”) ← ie. *h_2evis-dhh_1-*, similar to lat. *dīvidere* (s.v. *dhā*)

◇ B *obedient* (by a complicated development)

∼ e. *ear* ∼ nhg. *Ohr* ← ie. *h_2eu-s*

ās 2. class: ***āstê*** (“to sit”), not related to *sad*
āsanam (“sitting, throne”)
āsandī (“throne”)

ās (“mouth, face”)

← ie. root *h_3eh_1-os*

→ lat. B *os-culation* (“kiss”)

āsa (“ashes”)

← ie. $*h_2eh_1sh_2$

→ lat. B *ar-id, ar-dour, ar-dent* (**LAT_*sr***)

∼ e. *ash* ∼ nhg. *Asche* and e. *Ash* Wednesday ∼ nhg. *Aschermittwoch*

∼ nhg. *Esse* (“hearth”)

E.2.3. *i*

i 2. class: ***êti*** (“to go”), pp. 154
ita PPP, also with prepositions:

$\surd$ *i* in z.g.	PPP	translation	*ti* noun	translation
adhi-i	*adhī-ta*	to study	*adhī-ti-s*	study
anu-i	*anv-i-ta*	to follow	*anv-i-ti-s*	following after
abhi-i	*abhī-ta*	to arrive	*abhī-ti-s*	attack
ud-i	*ud-i-ta*	to go up	*ud-i-ti-s*	sunrise
upa-i	*upê-ta*	to go towards	*upê-ti-s*	approach
pra-i	*prê-ta*	to set off	*prê-ti-s*	escape

palāy 10. class: ***palāyatê*** (“to go away → to flee”) (***rl***) ← $*parāyatê$ ← $*parā\text{-}ayatê$ (see *parā*)
sahāya (“companion, helper”) ← *saha* + *aya* and
sāhāyya (“fellowship, help”) (see pp. 247)
ayana/ayanam (“going, motion, hallway”) as in

◇ *vātāyanam* (“window”) ← *vāta* (“wind”)

◇ *rāmāyanam* (name of Indian epic) ← *rāma* (“name of Indian hero”)

◇ *samāvāya* (“inherence, cooccurrence”) ← *sama* (“same”) + ava (“down”)

i (“to go”)		
present tense	*ê-ti*	*y-an-ti*
infinitive	*ê-tum*	
PPP	*i-ta*	
future	*ê-ṣy-a-ti*	*ê-ṣy-a-n-ti*
imperfect	*âi-t* (1)	*āy-an* (2)
perfect	*iy-āy-a* (3)	*īy-us* (3)

1. *âi-t* ← *a-i-t* is regular by **MVS** (pp. 30).

2. Not clear.

3. See section C.7, pp. 188.

← ie. root $^*h_1ei$

→ lat. B *i*-teration, *ex-i-tus*, *in-i-tial*, *i-tinerary*, *trans-i-tion*

See *yā*

itara ("the other (of the two)")

← ie. $^*h_1i$-*tero*

∼ lat. *iterum* ("again, for a second time") and B *iteration*

iti ("in this way → thus", indicates quotes or thoughts), perhaps from *i* above
iti-hāsa ("thus, indeed, it was → history, legend") ← *iti* + *ha* ("indeed") + *āsa* (3. pers. sg. perfect of *as*, p. 190)

∼ lat. *ita* ("in this manner")

idh*/ *indh 1. class: ***indhatê*** ("to set fire to")
edha ("kindling, fire wood")
iddha ("inflamed") PPP (**ASh**)

← ie. root $^*h_2eidh$

→ gr. *aithō* ("I set on fire")

∼ lat. *aedificium* ("fireplace → room with a fireplace → building")

iva
atīva ("exceedingly, very") ← *ati* + *iva*

← ie. $^*h_2iva$

iṣ 1. class: ***icchati*** ("to wish"), may well be related to *iṣ* ("to press, to send") below
On the one hand: ***gav-iṣ*** m./f./n. ("wishing cows, greedy")

← ie. root $^*h_2eis$ ("to seek, to desire")

→ lat. B to *esteem*

On the other hand, with *sḱ*-suffix: ***icchā*** ("wish") (**CCl**, **SIB**)

← ie. $^*h_2is$-*sḱ*

→ e. *ask* ∼ ohg. *eiscōn* → nhg. *er-heisch-en*

Compare *gam, gacchati* ("to go"), *pracch, pṛcchati* ("to ask") and *yam, yacchati* ("to hold, to restrain").

iṣ 1. class: ***êṣati***/ 4. class: ***iṣyati***/ 9. class: ***iṣnāti*** ("to press, to send") may well be related to *iṣ* ("to wish") above
iṣu m. ("arrow")
īṣat adv. ("a bit, getting close to")

← ie. root $^*h_1eis$ ("to set in motion")

→ lat. *īra* ("anger") (**LAT_*V***) as in B *irate*

It seems probable that the two *iṣ* are one word, only. An arrow (*iṣu*)

◇ may be directed towards what is wished for (the first *iṣ*)

◇ may have been sent (the second *iṣ*)

iha ("here")
pa. ***idha*** ("here")

← ie. $^*i$-*dhi*, see pp. 53

→ lat. *ibī* ("there") (with **LAT_*V*** ← ie. variant $^*i$-*bhei*) with *alibī* ("there") and B suspect's *alibi* (see s.v. *anya*)

E.2.4. *ī*

īkṣ 1. class: ***īkṣatê*** ("to see"), see *ak-ṣi* n. ("eye")

← ie. root $^*h_3ek^w$

īkṣ is originally a desiderative (see pp. 126).

īrma ("arm, forequarter of an animal")

← ie. $^*h_2erH$-*mo*

→ lat. *armilla* ("arm-band, bracelet") with B *armillary* sphere ("sort of celestial globe")

∼ e. *arm* ∼ nhg. *Arm*

īś 2. class: ***īśte*** (“to own, to rule”)
īś-vara “god, lord”

← ie. root $^*h_2eiḱ$

→ e. own ∼ nhg. *eigen* (**VER**)

E.2.5. *u*

ukṣ 4. class: ***ukṣ-a-ti*** (“to sprinkle, to moisten, to emit”)

← ie. root $^*Heug$-/$^*Heuks$-

ukṣ 4. class: ***ukṣ-a-ti*** (“to grow, to get strong”)
ug-ra (“powerful, mightly”)
ôj-as n. (“power”)

← ie. root $^*h_2eug$-/ with *s*-extension $^*h_2euks$-

→ lat.

- ◇ *auctoritas* and B *authority*
- ◇ B *auction* (with backward assimilation), to *augment*
- ◇ B and name of emperor *Augustus* (literally “holy, majestic”)

∼ e. to *wax* (in *wax and wane*) ∼ nhg. *wachsen* ← $^*h_2vegs$ (with metathesis)

Perhaps related to *vaj*.

ukṣ-an m. (“ox, bull”)

← ie. $^*Huks$-*en*

→ e. ox ∼ nhg. *Ochse*

Derived from

◇ *ukṣ* (“to grow, to get strong”): the bull as the strong one, or

◇ *ukṣ* (“to sprinkle”): the bull as the inseminator

ud ("out of, up")
ut-tara (comparative: "a higher one, the later one")
ut-tama (superlative: "the extreme, the last, the best"), see *-tama*
an-ut-tama (bahuvrīhi compound: "that in relation to which there is no supreme → unsurpassed")
ud-ac ("directed upward, northern")
ud-ak ("in or from the north")
un-mārga ("a wrong or evil way") ← *ud* + *mārga*

← ie. **ud*

→ gr. B *hysteria* (compare Indo-Iranian **DzD**) ~ oi. *uttara* above

~ e. *out* ~ nhg. *aus*

ud/ und 7. class: ***u-na-t-ti/*** 6. class: ***undati*** ("to make wet")
un-na ("wet") ← *ud-na*
ud-an n. ("water")
ud-akam ("water")
ôd-man n. ("floods, rain")

← ie. **ved-n/***ved-r*

→ gr. B *hydrate*

~ lat. *unda* "wave"

~ e. *water* ~ nhg. *Wasser*

udara ("belly")
sodara ("belly") ← *sa* + *udara* ("brother")

← ie. **Hud-er*

→ lat. (B*) uterus*

upa ("to, near")
upa-niṣ-ad f. (according to one interpretation: "what is taught when sitting down and close to", indische Geheimlehre, see *sad*)
upa-dêśa ("teaching", see *diś*)

← ie. **(s)upo*

→ gr. B *hypo*-thesis (sec. part see *dhā*), *hypo*-crite

~ lat. *sub* (with lat. *s* as in *super*, see *upari*) with B *sub*-mit, *sub*-ject, *sub*-set

∼ **but not** e. *of* or *off* or nhg. *auf*

upari ("over")

← ie. **(s)upér(i)*

→ gr. B hyperbola, hyper-active (sec. part lat, see aj), *hyper-tension* (sec. part lat)

∼ lat. super (with lat. s as in sub, see upa) with B superman, supervision, superficial

∼ e. over ∼ nhg. *über* (note the ie. stress and consult **VER**)

upastha ("womb, genitals, sheltered place")

◇ *upa* ("to, near") + *stha* (← *sthā*, compare p. 136) or

◇ *upas* ("womb") +

- *stha* (← *sthā*) or
- *tha* (suffix)

upa-s-ti m. ("servant") ← *upa* ("to, near") + zero grade of *as*

ubha ("both"), probably related to *abhi* ("around, on both sides, toward")
∼ e. *both*∼ nhg. *beide*

uru ("wide")
var-īyans (comparative, "wider")
var-iṣṭha (superlative, "widest"), see e. *st* as in wide*st* (p. 72)
f. ***urvī*** also (very similar to *pṛthvī*, see *pṛthu*) in

◇ ***urvī-pati*** m. ("king")

◇ ***urvī-talam*** ("earth, ground")

varas ("width, extension")
urvasī (an *apsaras* f. ("heavenly nymph" with "extended wishes") ← **uruvasī* ← *uru* + *vaś* ("to wish") + *ī*-suffix
uras ("(wide) breast")
ulūka ("with a broad face → owl") ← *uru-Hka*, unclear, see *ulūka*
possibly also *ūru* m. ("thigh") with strange analogy

bahu ("much, many") adj.	giving rise to body part:	*bāhu* m. ("arm")
just as		
uru ("wide") adj.	giving rise to body part:	*ūru* m. ("thigh")

urvarā m. (“fertile soil”)

← ie. *$*h_2erh_3$-vo*

→ lat. B *ar-able*

ulūka m. (“owl”)

← ie. **ul*/ **ulul*

→ lat. *ulul-āre* (“to howl”)

∼ e. owl ∼ nhg. Eule

See s.v. *uru*.

uṣ 1. class ***ôṣati*** (“to burn, to shine”), the same root as *vas*[2]
uṣ-ṇa (“hot”)
uṣ-as f. (“dawn, aurora”)
us-ras (“relating to or seen in the morning, shining”)

← ie. root **Heus*

→ lat.

- ◇ B *aurora*
- ◇ *amb-ūrere* (“to burn around”, see s.v. *abhi*) (**LAT_*sr***) → *am-būrere* and hence B com-b*u*stion

∼ the southern direction: lat. *auster* (“south wind, south”) with

- ◇ lat B *Aus-tralia* (“southern land”)
- ◇ lat. B *Aus-tria*

∼ the eastern direction:

- ◇ e. *eas-t* ∼ nhg. *Os-t*
- ◇ e. *Eas-ter* ∼ nhg. *Os-tern*

E.2.6. *ū*

ūti f./m. (“help”), see *av* (“to help, to promote”) ← ie. *$*h_2uH$-*ti* (**Lar_*V***)

ūdhar n. (“udder”)

← ie. **ūdh* (“abundant”)

→ lat. B *ex-ub-erant*

∼ e. *udder* ∼ nhg. *Euter*

ūrṇā (“wool”)

← ie. *$*wl̥Hn$*

→ e. *wool* ∼ nhg. *Wolle*

ūrdhva (“tending upwards, raised, elevated”)
ūrdhvam adv. (“upwards, beyond”)

← ie. *$*h_3r̥dh$-*vo* (difficult)

∼ ogr. *ortho-dox*, *ortho-pedist* (**OGR**)

∼ nir. placename *Aird Mhór* (British: *Ardmore*)

∼ e. *ard-ous*

ūh 1. class: ***ūhati*** (“to carry, to modify”)
ūḍha PPP
sam-ūh (“to heap together”) and ***sam-ūha*** (“heap, bulk, union”)
ūh goes back to *vah* (“to drive, to bring”). Long *ū* may result from PPP by levelling.

ūh 1. class: ***ôhatê*** (“to consider”)
ôh-as n. (“praise”) (**SPal**)

← ie. root *$*Heug^wh$*

→ lat. B *vo-tum*, *de-vou-t*

E.2.7. *ṛ*

ṛ 1. class: ***ṛ-cchati***/ 3. class: ***iyarti***/ 5. class: ***ṛ-ṇo-ti*** (“to rise, to reach”)
On the one hand:

◇ zero-grade ***ṛ-ta*** PPP (“proper, right, moved”), but see *ar*

◇ zero-grade ***an-ṛ-ta*** PPP (“false, undeserved”), but see *ar*

← ie. root *$*h_3er$*

→ lat. B *or-igin*, *ab-or-tion*, *orient* (“where the sun rises”)

On the other hand, ***ṛcchati*** with *sḱ*-suffix:

← ie. zero grade $^*h_3\underset{\circ}{r}$*-sḱ-e-ti* (**SIB**)

Compare *iṣ*, *icchati* (“to wish”), *gam, gacchati* (“to go”) and *pracch*, *pṛcchati* (“to ask”).

ṛkṣa (“bear”)

← ie. $^*h_2\underset{\circ}{r}$*tḱo* (**SIB**)

→ gr. B *arctic* (“belonging to the bear constellation → with respect to the north pole”), with metathesis of the consonants, similar to ogr. *chthōn* s.v. *kṣam*

∼ lat. *ursus* (with difficulties) and PNs *Urs* and *Ursula*

See p. 44.

ṛtê (“without”) is a loc. of some noun ***ṛta*** but is not clear whether it belongs to *ṛ* or to *ar*

ṛtvij m. (“offering at the right time → priest”)
← *ṛtu* (“time of year, right time”, see *ar*) + zero grade of *yaj* (“to sacrifice”)

ṛṣ 1. class: ***arṣ-a-ti*** (“to flow, to stream”)
rasa m. (“sap or juice of plants”))

← ie. root $^*h_1$*ers/* $^*h_1$*res* (“to flow”)

→ lat. *rōs*, *rōris* (“dew”)

See *a-lasa*.

E.2.8. *ê, âi*

êka (“one, single”)
êkākin (“single, alone”) ← *êka* + *ak* (suffix) + *in* (suffix)
êkāgra (“one-pointed, focussed”) with second *agram* (“top, summit, beginning”)

← ie. **Hoi*

→ lat. *ū-nus* (“one”) with B *unity*

$\sim$ e. *one* $\sim$ nhg. *ein*

êj 1. class: ***êjatê*** / ***ījatê*** /("to stir")

$\leftarrow$ ie. root $^*h_2eǵ$- (like *aj*)

Formation of ved. *ījatê* by reduplication, like *sīd-ati* (see p. 80):

*ie. h_2i-$h_2ǵ$-*e-toi* (reduplication with *i* and zero grade)
$\rightarrow$ *īǵ-e-toi* (**Lar_*V***)
$\rightarrow$ *īj-e-toi* (**PPal**)
$\rightarrow$ *īj-a-tê* (***aā*, DIPH**)

ījatê then lead to *êjate*, by assuming a root *êj*.
See *aj*.

E.2.9. *ô, âu*

ôj-as ("power"), see *ukṣ* ("to get strong")

ôj-man m. ("strength, power"), see **vaj* ("to get strong")

ôd-man n. ("floods, rain"), see *ud* ("to make wet")

ôm-an m. ("protection, grace"), see *av* ("to help, to promote")

E.3. Velar stops

E.3.1. *k*

kanyā ("girl, daughter")
kanā ("girl")
kanī ("girl")

$\leftarrow$ ie. **ken*-

$\rightarrow$ lat. B *re-cent*

kad ("what")

← ie. $^*k^wod$

→ lat. *quod*

∼ e. *what* ∼ nhg. *was*

See the related *kas*, *kiyat*, *kim* below.

kam ("to wish, to desire")
ca-kam-ê ("he wished") pf.
ci-kam-i-ṣatê ("he wishes to desire") desiderative
kānta ("beloved") (**BA**) ← n.at. *kāmto* (**Lar_SY**) ← ie. $^*kmh_2$*-to*
kāma ("wish, desire")

← ie. root $^*keh_2$/ $^*kemh_2$

→ lat. *cārus* ("dear, expensive") with *Karitas*, a German Catholic welfare organization

→ fr. *cher*

∼ e. *whore* ∼ nhg. *Hure*

Probably related to *kāṅkṣ*

kas ("who"), see also *kôvida*
kad ("what")
cid as in

◇ ***kaścid*** ("someone") by **BA**

◇ ***kadācid*** ("sometime")

◇ ***kū-cid*** ("somewhere, anywhere")

◇ ***kva-cid*** ("somewhere, anywhere")

kiyat ("how large, how long") and ***kiyan-mātra*** ("measuring how much → small")
ku ("whereever → unknown origin/source → bad, little") as in

◇ ***ku-sīda***("lazy") and ***ku-sīdam*** ("extortion, usury") without **RUKI**

◇ ***ku-śrutam*** ("unfounded rumor")

◇ ***ku-sakhī*** ("bad female friend")

◇ ***ku-tūhala*** ("strange, wonderful") and **ku-tūhalam** ("interesting thing, curiosity") may also belong here

kū ("where"), variant of *ku*
ku-tas ("from where") with common adverbial suffix *tas*
kū-cid ("somewhere, anywhere")
kva ("where(to)")
kim ("what") where

◇ *k* instead of expected *c* (**SPal**) stems from levelling with *kas* or *ku* and

◇ *kim* (with m as in many other neuter forms like *phalam*) is seen as a very ancient form for expected *cid*

kuv-id ("whether indeed, whether perhaps") ← *kū* + *id* (see *ced* under *ca*)

← ie. $*k^we/*k^wo$

→ lat. B (saying) *quid pro quo* ("reward, return service")

∼ e. *what*, *who* ∼ nhg. *was*, *wer*

kāṅkṣ 1. class: ***kāṅkṣati*** ("to wish, to desire"), unclear connection (if any) with *kam*

kāla ("time")
kālāntaka ("ender of time → god of death"), see *anta*
kālātmaka ("determined by time/fate")
Two explanations for *kāla*:

◇ from *kṛ* ("to make") because the decisive action has to be undertaken at the right point in time

◇ from *car* ("to turn") because "The Times They Are A-Changin" (Bob Dylan)

kāś 1. class: ***kāśatê*** ("to appear, to shine"), unclear

← ie. root $*k^wek\acute{}$

Perhaps related to *cakṣ*.

kās 1. class: ***kāsate*** ("to cough")
kās f./***kāsā*** ("cough")
kāsa ("cough")

← ie. root $*k^w\bar{a}s$

→ nhg. *husten* ("to cough")

kup 1. class: ***kupyati*** ("to be angry")
kôpa ("anger")

← ie. root **keup* ("to boil, to be agitated")

→ lat. *cupiō* ("I desire strongly"), lat. B *cupid* (name of god of love), *cupidity* ("lust, desire, greed")

kuṭi f. ("bending, curve")
kuṭila ("bent, curved, deceitful")
kâuṭilya ("deceit, falsity")
kâuṭilya (author of the Arthaśāstra)

kulam ("house, herd, family")
kulāla ("producer of objects with holes → potter")
kulāla-cakram ("potter's wheel")
If the original meaning of *kula* is "hole → house → family", then

← ie. **kol*

→ e. *hole*, *hollow* ∼ nhg. *hohl* ("hollow")

But see s.v. *śūnya*.

kulva ("bald, bare")

← ie. **klHv*

→ lat. B *calvary* (skull-shaped hill in Jerusalem, the site of Jesus' crucifixion)

kū 1. class ***kavatê***/ 2. class ***kauti***/ ***kavīti*** ("to cry, to sound")
ā-kū-ta ("meaning, intention") PPP (**Lar_V**)
kavi m. ("wise, poet") ← ie. **kovh*$_1$*i*- (the laryngeal makes the syllable closed so that Brugmann's law **Lo** does not apply)

← ie. root **keuh*$_1$

→ lat. B *caution* and the lat. warning "*cave* canem" ("beware of the dog")

∼ germ.

- ◇ e. to *show* ∼ nhg. *schauen*
- ◇ e. *shy* ∼ nhg. *scheu* where "careful" is the underlying meaning
- ◇ nhg. *scheuchen* ("to shoo"), *Scheusal* ("means for shooing/ what one shies away from → monster")

kūpa ("pit, hole")

← ie. **kupa/ kūpa*

→ lat. *cūpa* with B *cup*

∼ e. (bee) *hive*

kṛ 8. class: ***karôti*** ("to make")
kara ("maker → hand")
su-kara ("doable")
pra-kṛta ("made, accomplished") and
prakṛti f. ("nature, basis, cause")
saṃ-s-kṛta with unclear *s* before *k*

kṛt 7. class: ***kṛṇatti*** ("to spin")
mi. ***kaṭa*** ("mat") ← ***karta*** where *r* is dropped while cerebralizing *ṭ* (pp. 57)

kṛt 6. class: ***kṛntati*** ("to cut")

← ie. root **(s)ker(t)*

→ e. *shear* ∼ nhg. *scheren* ("to shear")

∼ maybe e. *hard* ∼ nhg. *hart*

See also *carman* ("leather").

kṛp f. ("look, beauty")
kṛt-s-na ("bodily → complete, whole") ← ***kṛp-s-na*** (by **BA** because *s* is a dental sound!)

← ie. root **kerp*

∼ lat. *corpus* with

- ◇ B in English *corps*, *corporation*,
- ◇ B in German *Körper* ("body")

kṛp 1. class: ***kṛpatê*** ("to lament, to moan, to beg")
kṛpā ("compassion")
kṛcchra ("difficult, dangerous") ← n.at. *kṛp-ra* (difficult)

← ie. root **krep*

→ lat. *crepāre* (“to make a sharp loud noice”) with B in *dis-crep-ancy* (“difference in sound or opinion”)

kṛśa (“thin”)
kraś-īyans (comparative, “thinner”)
kraś-iṣṭha (superlative, “thinnest”), see e. *st* as in thinn*est* (**Lar_*CH***)

kṛṣ 1. class: ***karṣati*** (“to draw (a furrow), to pull, to drag”)
kṛṣaka (“farmer”)
kṛṣīvala (“farmer”) where it would certainly be nice to relate val to nhg. wühlen (“to dig into”)
karṣū (“furrow”)
kṛṣṇa (“the colour of the earth after furrowing → black”)
kṛṣṇa (“the colour of the earth after furrowing → black”)
kārṣman n. (“furrow, the target designated by a furrow → race target”)
kaṣ 1. class: ***kaṣati*** (“to rub, to rasp”) ← *karṣ* where *r* is dropped, but *ṣ* already cerebralied (pp. 57) and also

◇ ***kaṣṭa*** PPP (“harsh, severe”)

◇ ***nikaṣa*** (“touchstone, criterion”)

See also *car* (“to go”)

kṝ 6. class: ***kirati*** (“to outpour, to sprinkle”)
kīr-ṇa PPP (pp. 118)
kīr-i (“who outpours fame or praise → poet”)
ci-kar-i-ṣ-u (pp. 133)

← ie. root **ker H*

kêtu m. (“brightness”), see *cit*

← ie. root **keit* (“to be bright”) ← ie. **kai* (“to shine, to burn”)

kôka/ ***kôkila*** (“cuckoo”)

← ie. **kouk*

∼ e. *cuckoo* ∼ nhg. *Kuckuck* (without application of **NHG_*C***) (doubtful, probably just independent onomatopoetic development)

kôvida (“experienced”) ← *kas vida* (“who knows”) by **CpL*z***

kratu m. (“power, energy”)

← ie. **kretu* (“to freeze, to form a crust”)

→ gr. B demo-*cracy*

∼ maybe e. *hard* ∼ nhg. *hart*

krand 1. class: ***krandati*** (“to lament, to cry”)

← ie. root **kel*

→ lat.

- ◇ *clārus* (“loud, clear, famous”), *calāre* (“to call out, to call together”), *clamare*, and con-*ciliāre* (“to join, to make friends with”)
- ◇ B *clear*, to *clarify*, *clarinet*, *declaration*, coun*cil*, to *claim*, and *calender* (i.e., the days to be called out, the first day of the month when taxes and other monthly payments are due)

∼ nhg. *hell*, *Hall* (“resonance”), *holen* (“to call → to fetch”)

kravis*/*kravyam (“raw meat, clotted blood”) (**Lar_V**)
krūra (“bloody, raw, cruel”) ← ie. zero grade **kruh*$_2$-*ro* (**Lar_V**)

← ie. **kreuh*$_2$- (“to freeze, to form a crust”)

→ ogr. *kreas* (“meat”) (**OGR**) with gr. B *crystal* (originally “fossilized ice”)

∼ lat. *cru-or* (“blood”) and

- ◇ *crūdus* (“raw, clotted”) with lat. B *crude*, *cruel*
- ◇ *crūsta* (“crust, bark”) with lat. B *crust* (in German: *Kruste*)

∼ e. *raw* ∼ nhg. *roh* ← ohg. *hrō*

krī 9. class: ***krīṇāti*/*krīṇītê*** (“to buy”), see p. 188
vi-krī (“to sell”)

← ie. root **k*^{w}*reih*$_2$

From *k*^{w}*ri-neh*$_2$*-ti*, one should expect **kriṇāti*, with short *i*, instead. See pp. 87.

krīḍ 1. class: ***krīḍati*** (“to play”)

← ie. **krisd* (compare *nīḍam* ← *ni-sd-am*)

kruś 1. class: ***krôśati*** ("to cry, to lament")
krôṣ-ṭar ("shrieker → jackal") p. 100
kra-kar-a/ ***kṛ-kar-a*** ("partridge")

← ie. root **kreuk*/ **kreuḱ*

∼ e. *croak* ∼ nhg. *krächzen* (doubtful, may just be independent onomatopoetic development)

klam 4. class: ***klāmyati*** ("to tire") where walking is tiring:
kram 4. class: ***krāmyati*** ("to walk"), perhaps confusion with otherwise unrelated *śram*
krānta PPP (**Lar_*CH***, **BA**)

← ie. root **kremH*

klid 4. class: ***klidyati*** ("to get wet")
klinna PPP (compare p. 110)
klêda ("wetness, humidity, decay")

klôman m./n. ("right lung"), possibly dissimilated from ***plôman***

← ie. **pleumon* ("swimmer → lung"), see *pṛ*

→ lat. B *pulmonary*, *pulmology* (with second Greek (!) part)

kṣatram ("government, leadership")
kṣatriya ("ruling, warrior, ruler")

kṣam f. ("earth")

← ie. **dhǵhom* (**SIB**, see p. 44)

→ ogr. *chthōn* with B *chthonic* ("coming from the earth"), with metathesis of the initial consonants

∼ lat.

- ◇ *humus* ("earth, ground") with B *hum-ble, humility*
- ◇ *homō*, *hominis* (the initial dental plosive of the cluster drops) with B *homunculus*, *human*

∼ nhg. Bräuti*gam* (the initial dental plosive of the cluster drops)

kṣi 2. class: ***kṣêti*** (“to dwell, to possess, to rule”)
kṣití f. (“earth, living place”)
kṣêma (“habitable, comfortable”)
kṣêtram (“field, place”)

kṣi 9. class: ***kṣiṇāti*** (“to destroy, to perish”)
kṣíti f. (“destruction, doom”)
Nomads dwell in a certain place for a while until that place has become destroyed. From that point of view, the first meaning may have lead to the second one.

kṣip 6. class: ***kṣipati*** (“to throw, to dash”)
kṣipta PPP
kṣipra (“fast, quick”)
kṣêp-īyans (comparative, “quicker”)
kṣêp-iṣṭha (superlative, “quickest”) (**Lar_*CH***)
kṣêpa (“shot”)
kṣêpṇā adv. (“fast”)

kṣud 1. class: ***kṣôdati*** (“to stamp, to crunch”)
kṣuṇṇa PPP (p. 110)
kṣudra (“small, miserable, mean”)
kṣôd-īyans (comparative, “small”)
kṣôd-iṣṭha (superlative, “smallest”)

kṣudh 4. class: ***kṣudhyati*** (“to be hungry”)
kṣudhita PPP
kṣudh f./ ***kṣudhā*** (“hunger”)

kṣubh 4. class: ***kṣubhyati***/ 1. class: ***kṣôbhatê*** (“to tremble, to be excited”)
kṣubdha PPP

← ie. root **kseubh*

→ e. to *shove*, *shovel* (**NHG_E**)

∼ nhg. *schieben*, *Schub* (**GER**) and also somehow *Schaufel*, *Schippe*

E.3.2. *kh*

khan 1. class: ***khanati*** ("to dig")
khāta PPP (see p. 118)
khanitram ("shovel") (compare p. 101)
khani f. ("pit, mine")

→ ie. root $*kh_2enh_1$

kham ("hole, hole containing the axis, air space")
su-kham ("smoothly moving axis in the kha → fortune, happiness")
kha-ga ("bird"), see pp. 78
kha-jalam ("air space water → dew, fog")

khād 6. class: ***khādati*** ("to eat")
Non-sensical suggestion: *kh-ad*, see *ad*

khila ("wasteland, rest")
khilī kṛ ("to empty")
a-khilam ("everything, universe")
a-khilēna ("in its entirety, all in all")

E.3.3. *g*

gad 1. class: ***gadati*** ("to say")
gada ("illness ← result of a curse or cause of a feverish babble")
a-gada ("not ill")
a-gada ("medicine")
A root with two voiced unaspirated unconsonants is very rare. It may be a mockword reflecting unnatural pronunciation.

gandha/gandham ("smell, odor")
su-gandhi ("fragrant")

gabha ("spreading of thighs → vulva") (**DA**)
gabhasti m. ("arm, hand") (**DA**)

← ie. root $*ghebh/ *gheb$ ("to grab, to hold")

→ lat.

◇ *habere* with B *habit*, *habilitation*, *in-hibition* (see p. 66), *ex-hib-ition*

◇ *habitāre* (frequentative of *habere*) with B *habitation*

∼ e. to *give* ∼ nhg. *geben* (but see s.v. *āp*)

and finally from ie. **ghebhol* ("crotch, especially at the top of a house = gable")

→ ogr. *kephalē* (**OGR**, a Greek version of **DA**) ("top, head") with B *cephalic*, *cephalogram* ←

∼ e. *gable* ∼ nhg. *Giebel*, *Gabel* ("fork")

But **not** e. to *have* ∼ nhg. *haben*, see *śap*

gam 1. class: ***gacchati*** ("to go")

gam ("to go")		
present tense	*gacch-a-ti*	*gacch-a-n-ti*
infinitive	*gan-tum* (1)	
PPP	*ga-ta* (2)	
future	*gam-i-ṣy-a-ti* (3)	*gam-i-ṣy-a-n-ti* (3)
imperfect	*a-gam-a-t*	*a-gam-a-n*
perfect	*ja-gām-a* (4)	*ja-gm-us* (4)
them. aorist	*a-gam-a-t* (5)	*a-gam-a-n* (5)
desiderative	*ji-gam-i-ṣ-a-ti* (3)	*ji-gam-i-ṣ-u* (3)

1. **BA**

2. **SY_*N***

3. *i* in future or desiderative forms is spilled over from laryngeal verbs.

4. The perfect forms are regular. The sg. is the *o*-grade plus **L*o***, the pl. the zero grade (see section C.7, pp. 188).

5. Thematic aorist, but in full grade

On the one hand: ***gam***

← ie. **g*^{w}*em* (see also *gā* below)

→ gr. B *basis* with zero grade (**IE_SY_*N***) and gr. B acro-*bat* ("someone who tiptoes") (for *akro-* ("top, summit, castle") see *aśman*)

∼ lat. (**LAT_*v***) *venīre* with B *inter-ven-tion*, *con-vent*, *con-ven-tion*, *advent* ("coming of Jesus Christ"), *e-vent*, *prevention*

∼ nhg. *kommen*, *bequem*

On the other hand, with *sḱ*-suffix: ***gacchati*** (**SIB**)

← ie. $*g^{w}m_{\circ}$-*sḱ*

→ ogr. *ba-sk-ō*

Compare *iṣ*, *icchati* ("to wish"), *pracch*, *pṛcchati* ("to ask"), and *yam, yacchati* ("to hold, to restrain").

gaya ("life, possession, dwelling place, family"), see *jīv*

garuḍa (name of a mythical bird)
garut m. ("wing")
garutmant ("winged one → bird" = *garuḍa*)
These three words are related, but in a difficult manner.

garj 1. class: ***garjati*** ("to roar, to thunder")
gaja ("elefant"), but unclear

garbha ("womb, embryo")

← ie. $*g^{w}olbh$ ("to grab, to hold")

→ ogr. a-*delph*os ("from the same womb → brother") with place name *Phil-a-delphia* where the *a* is related to oi. *sam*

gar ("to gulp, to swallow up")
gara ("swallowing")
garam ("potion")
aja-gara ("one who swallows a goat → serpent")
with ***rl***

◇ ***gal*** 1. class: ***galati*** ("to drop, to trickle")

◇ ***gala*** ("neck") with ***gala-dvāram*** n. ("throat door → mouth")

grīva ("neck")
sugrīva ("one with a beautiful neck", name of the monkey king who helps Rāma recover Sītā who was abducted by Rāvaṇa)
daśagrīva ("one with ten necks", i.e., Rāvaṇa)

gā 3. class: ***jigāti*** ("to go")
gā-tram ("instrument for going → body limb")
gā-tu m. ("place for going → course, lane")

← ie. root $^*g^weh_2$

Compare *gam*.

gā*/*gâi 1. class: ***gāyati***/ 2. class: ***gāti*** ("to sing")
gātha/ ***gāthā*** ("singing")
gāthaka ("singer")
gīta PPP by laryngeal metathesis (compare p. 335) from **giH-to* ← **gHi-to*

← ie. root **geH-i*

gup 10. class: ***gôpāyati*** ("to protect cows → to protect")
gô-pā ("herdsman, cow protector"), see *gô* ("bull, cow") and *pā* ("to protect")
gô-pā-yati is a denominative and is derived from *gôpā*. This explains long *ā* which we do not otherwise see in the 10. class. Originally, an oi. root *gup* did not exist. Splitting *gôp-āyati* rather than *gô-pā-yati* the root *gup* came into being. Stated differently, the oi. root *gup* is obtained by back-formation, for example

PPP *lup-ta*	with 10. class:	*lôpayati*
just as		
PPP *gup-ta*, falsely	with 10. class:	*gôpāyati*

gô m./f. ("bull, cow")
gô-pā m. ("herdsman, cow protector"), for second part, see *pā*
gô-pāla ("herdsman, cow protector"), for second part, see *par*
gô-pati m. ("lord of cows, ruler, bull"), for second part, see *pati*
gô-tama ("possessing many cows → rich")
gô-tram ("cowshed")
gô-ṣṭha ("where the cows stand → cowshed"), for second part, see *sthā*
gô-dhā ("sucking cows" → name for a kind of lizard), for second part, see *dhê*

← ie. $^*g^wou$

→ ogr. *bou-kolos* ("cowherd") ∼ oir. *bua-chail* (for second parts, see *car*)

∼ lat. dialectal *bōs*, *bovis* with *bovine spongiform encephalopathy* (short: BSE) and beef (English, but from Norman invasion)

∼ e. *cow* ∼ nhg. *Kuh*

guru ("heavy") with ***guru*** m. ("teacher")
gar-īyans (comparative, "heavier")
gar-iṣṭha (superlative, "heaviest")
gārvan m. ("heavy object → stone")

← ie. $^*g^w\underset{\circ}{r}h_2u$

→ gr. B *baro*meter

∼ lat. B *gravity*

guh 1. class: ***gūhati*** ("to hide")

guh ("to hide")		
present tense	*gūh-a-ti* (2)	*gūh-a-n-ti* (2)
PPP	*gūḍha* (1)	
imperfect	*a-gūh-a-t* (2)	*a-gūh-a-n* (2)
perfect	*ju-gūh-a* (2, 3)	*ju-guh-us* (3, 4)
sa-aorist	*a-ghuk-ṣ-a-t* (5)	
desiderative	*ju-ghuk-ṣ-a-ti* (6)	*ju-ghuk-ṣ-u* (6)

1. PPP *gūḍha* is perfectly regular:

   ie. $^*ghu\acute{g}h$-*to* (z.g. with *to* PPP marker)
   → *gu$\acute{g}$-dho* (**DA** and **ASh**)
   → *guz-dho* (***sz*** before voiced stop)
   → *guẓ-dho* (**RUKI**)
   → *guẓ-ḍha* (**Cer*D***, ***aā***)
   → *gū-ḍha* (**CpL*z***)

2. *gūh-a-ti* for expected full grade *gôh-a-ti*. Levelling may be responsible, see PPP *gūḍha*.

3. The perfect reduplication with *ju* is analogic secondary palatalization as in *cu-kṣôbh-a* (p. 192). However, one should expect the strong form 3. pers. sg. *ju-gôh-a*.

4. Expected weak form *ju-guh-us*.

5. *sa*-aorist with expected appearnace of aspiration from ie. root $^*ghu\acute{g}h$

6. Expected appearance of aspiration as in future form *bhôt-sy-a-ti* (pp. 38, 105). Palatalization of the reduplicated syllable may be due to analogy from desideratives with *i* in the stem, i.e., *ju-ghuk-ṣ-a-ti* similarly to *ji-gam-i-ṣ-a-ti*.

← ie. root $^*ghu\acute{g}h$

gṝ 9. class: ***gṛṇāti*** ("to mention with praise")
gūrta ("agreeable, welcome")
gūrti f. ("praise")

← ie. root *$g^{w}erH$ (“to welcome”)

→ lat. B *grate-ful*, *grat-uitous*, *con-grat-ulation*, *grac-ious*

gṛdh 4. class: ***gṛdhyati*** (“to be greedy”) (**DA** and section ***rl***)
gṛddha PPP
gardha (“greed”)
gṛdh-yā (“greed”)
gṛdhra (“greedy”)
gṛdhra (“vulture”)

← ie. root **gheldh*

→ nhg. ver-*gelten* (“compensate”), *Geld* (“money”)

garh (“to lament”) and *grabh* (“to take, to grab”) may somehow be related

gṛham (“house”) ie. *$ghr̥dho$ (**DA** and p. 53)

← ie. root **gherdh* (“to surround”)

→ Slavic placenames like *Bel-grade*

∼ lat. *hortus* (“garden”) ← ie. *t* (!)-extension **ghor-to* → lat. B *horti-culture* and possibly (but see s.v. *hṛ*) *cohort*

∼ germ.

◇ e. *garden* ∼ nhg. *Garten*

◇ e. to *gird, girdle* ∼ nhg. *Gurt* (“belt”)

granth 9. class: ***grathṇāti*** (“to bind, to wind”)
grantha (“knot, text, book”) (**Lar_*CH***)
granthin (“reading books”)
grathita PPP (**SY_*N***)

← ie. root *$grenth_2$ and more basically ie. **ger* (“turning, to bend, to braid”)

→ germ.

◇ nhg. *krenzen* (“to produce or attach something wound”) and hence nhg. *Kranz*

◇ nhg. *Kringel* (“small circle”)

◇ nhg. *krank* (“bent, buckled → ill”)

◇ nhg. *Krampf* ∼ e. *cramp*

Similar to *grabha* (“capture”, see *grabh* below), observe

ie. **grenth$_2$-o*
→ **grenth-o* (**Lar_*CH***)
→ *granth-a* (***aā***)

Revisit subsection C.2.5 (pp. 87) and compare *granth* with *pū*:

class	*gaṇa sign	√ (f.g.)	3. pers. sg.
7	**ne*	**yeuǵ*	**yu-ne-ǵ-ti*
9	**ne*	**peuH*	**pu-ne-H-ti*
9	**ne*	**grentH*	**gr̥nt-ne-H-ti*

The last line should yield **gratṇāti* by **SY_*N*** and **Lar_*CH*** instead of *grathṇāti* above. The latter is to be explained by levelling, for example by

	gratṇāti	
influenced by	*grantha*	with aspirated *t*
turns into	*grathṇāti*	with aspirated *t*

grabh (later ***grah***) 9. class: ***gṛbhṇāti*/*gṛhṇāti*** ("to seize, to take"), see subsection B.3.10
grabha ("capture")
grabhīta PPP with unexpected full grade and unusual long *ī*
grabhītar ("capturer") with expected full grade (pp. 100), but funny long *ī*

← ie. root **ghrebh*

→ germ.

- ◇ e. to *engrave*, *grave*
- ◇ nhg. *graben* ("to dig"), *Grab* ("grave"), *Grube* ("pit"), *grübeln* ("to brood")
- ◇ iterative variants e. to *grope* ∼ nhg. *greifen* and nhg. *Graft* (out of use) ∼ Dutch *gracht* with *ch* as in nlg. *Nichte* (see *naptar*)

The oi. root *grabh* (in full grade) and in particular forms like *grabha* ("capture") show this development:

ie. **ghrebh$_2$-o*
→ **ghrebh-o* (**Lar_*CH***)
→ *ghrabh-a* (***aā***)
→ *grabh-a* (**DA**)

Similar to *grathṇāti* (see *granth*), observe

class	*gaṇa sign	√ (f.g.)	3. pers. sg.
7	*ne	*yeuǵ	*yu-ne-ǵ-ti
9	*ne	*peuH	*pu-ne-H-ti
9	*ne	*grentH	*gr̥̊nt-ne-H-ti
9	*ne	*ghrebH	*gh̥̊rb-ne-H-ti

Again, by **SY_*N*** and **Lar_*CH***, we should expect *gr̥bn̥āti* rather than *gr̥bhn̥āti* above. And, again, levelling of the form

	gr̥bn̥āti	
influenced by	*grabha*	with aspirated *t*
turns into	*gr̥bhn̥āti*	with aspirated *t*

is responsible. It looks as if the laryngeal caused both the aspiration of *b* and the gaṇa sign *nā*. We had a somewhat similar phenomenon with *sthā*, *tiṣṭhati* ("to stand") where the laryngeal of ie. *steh$_2$ produced both the aspirated *th* or *ṭh* and also the PPP form *sthita* where i goes back to the laryngeal (see p. C.2.2).

grāma ("troop, village") (**Lo**)

← ie. *h$_2$ǵrom-o

→ lat. *gremium* ("lap, interior") and lat. B in German *Gremium* ("interior → committee")

E.3.4. *gh*

gharma ("heat")

← ie. *g^{w}herm/*g^{w}horm

→ gr. B *thermic*, *thermos* bottle (**OGR**)

∼ lat. *fur-nace*

∼ e. *warm*

ghas 1. class: ***ghasati***/ 2. class: ***ghas-ti*** ("to consume")
a-gdha ("not eaten"), see p. 47
ji-ghat-s-u desiderative

← ie. root *ghas

ghṛ 2. class: ***ji-ghar-ti*** ("to sprinkle")
ghrā 2. class: ***ghrāti*** ("to smell") ← ie. $^*g^whr\text{-}eh_2$, see pp. 79

← ie. root $^*g^wher$

E.4. Palatal stops

E.4.1. *c*

ca ("and")
ced ("if") ← ca + id (see *kuv-id* under *kas*)

← ie. $^*k^we$

→ gr. *te* (**OGR**)

∼ lat. *que* which is also enclitic: senātus populus*que* rōmānus (abbreviation: SPQR, "the Roman senate and people")

See *pañča* and *na*.

cakṣ 1. class: ***cakṣatê***/ 2. class: ***caṣtê*** ("to see, to appear")
cakṣa ("eye")
cakṣus ("eye")
cakṣas ("eye")
cakṣan n. ("eye")
Probably, ***cakṣ*** is the reduplicated form $^*k^we\text{-}k^w\acute{k}$ (**SPal**, **SIB**) ← ie. $^*k^we\acute{k}$, see *kāś* ("to appear, to shine")
One obtains

ie.$^*k^we\text{-}k^w\acute{k}\text{-}tai$ (3. pers. sg. pres. tense ātm.)
→ *ce-*$k^w\acute{k}$*-tai* (**SPal**)
→ *cakṣ-te* (**SIB**)
→ *caṣ-te* (**CCl**)

cakram ("wheel, circle")

← ie. $^*k^we\text{-}k^wlo$, a reduplicated form from ie. $^*k^wel$ (see *car*, *cal*)

→ gr. B *cycle*, en-*cycl*-ical, *(en)cyclo-pedia*, *bicycle*, *re-cycle*

catvāras (nom. pl. m.) "four"
catur "four times"

← ie. *$k^w etvor$ (**SPal**, **L*o***)

→ gr. B *tetrahedron*

∼ lat. *quattuor* with B *quadrat*

∼ e. *four* ∼ nhg. *vier*

See *turīya* (“fourth”)

cand 1. class (“to be white, to glow, to shine”)
candra (“shining”)
candra (“moon”)
candra-ka (“moon”)
candra-vant (“bright as the moon”)
candra-kānta (“lovely as the moon”), for second part see *kāma* (“wish, desire”)

← ie. root **(s)kend* (*s*-mobile)

→ lat.

- ◇ *incendere* (“set on fire”) with B *incense*
- ◇ B *candid* (“white → frank”), *candle*, *candidate* (men standing for elections in ancient Rome wore white *toga*s)

See *chand*.

cam 1. class: ***cāmati*** (“to slurp”)
camūs (“bowl, army”)

cal 1. class: ***calati*** (“to move”)
car 1. class: ***carati*** (“to go”) (***rl***), see *cakram*
ca-ṅi-cal-ya-tê frequentative (p. 140) (“to stir, to quiver”)
ca-ṅi-cal-a (“unsteady”).

← ie. root *$k^w elh_1$

→ ogr. *bou-kolos* (“cowherd”) ∼ oir. *bua-chail* (for first part, see *gô*)

∼ lat.

- ◇ *colere* (“be busy, to cultivate”) with B *colony*, *clown*, *cult*, *culture* and the German town *Köln* ← “*Colonia* Agrippina”
- ◇ *collāre* (“neck iron for slaves”) with B *collar*, *collarbone* and French *collier* (“necklace”)
- ◇ *an-cul-us* (“man-servant”) ← ie. *$h_2 m̥ bhi$-$k^w olh_1$-*os* (for first part, see *abhi*) with lat. *ancilla* (“woman-servant”) and the B *ancilla-ry* (services)

$\sim$ nhg. Hal-s (“the mover, the turner $\rightarrow$ neck”)

kṛṣ (“to pull, to drag”) may also be related, from ie. $^*k^wol$-*s*.

carman n. (“leather”) (**SPal**)

$\leftarrow$ ie. **(s)ker-men* (“torn skin”)

$\rightarrow$ nhg. *Schirm*, *Herbst*, *Schere*, *scharf*

kṛt (“to cut”) is a *t* extension.

ci 5. class: ***cinôti***/ 2. class: ***cêti***/ 1. class: ***cayati*** (“to stack, to arrange, to cover”)
caya (“layer, heap, pile, entity”)

ci 3. class: ***cikêti***/ 5. class: ***cinôti*** / 1. class: ***cayatê*** (“to notice, to sift through, explore”)
nis-ci (“to decide”)
niś-caya (“decision, certainty”)
niś-ci-tam (“surely”)
niś-ci-tam (“decision”)
related to ***cit*** (“to observe, to appear”) below

$\leftarrow$ ie. root $^*k^wei$

It seems likely that ***ci*** (“to stack”) is related to ***ci*** (“to sift through”):

$\diamond$ If one sifts through a pile, one cannot help noticing.

$\diamond$ If one takes out of a heap, one makes a decision.

cit 1. class: ***cêtati*** (“to observe, to appear”), see *kêtu*
cêkitê frequentitive verb

E.4.2. *ch*

chad 1. class: ***chad-a-ti*** (“to cover”)
a-ccha (“uncovered”) (see p. 66)
sv-a-ccha (“pure, transparent”), see *su*

chand 10. class: ***chand-aya-ti*** (“to seem good, to please”)
chandas (“desire, delight, hymn”)

← ie. root **(s)kend* ("to shine, to appear") (*s*-mobile and **SIB**/ ***sP(h)***)

→ lat.

- ◇ *cend-ere* ("to ignite, to set fire") with B *incense*
- ◇ *cand-ere* ("to shine") with B *cand-le*

See *cand*.

chāyā ("shade")

← ie. root **skeh*$_2$ (**SIB**)

→ e. to *shine* ∼ nhg. *scheinen*

chid 7. class: ***chi-na-t-ti*** ("to split, to cut")
chid-ra ("with holes, damaged"), see pp. 121

← ie. root **skeid* (***sP(h)***)

→ gr. B (church) *schism*

∼ germ.

- ◇ e. to *shit* ∼ nhg. *scheißen*
- ◇ with labial extension rather than the dental one above: nhg. *Scheibe* ("disc", cut from a tree), *Schiefer* ("slate")

cho 4. class: ***chyati*** ("to cut open, to skin")

← ie. root **skeh*$_2$ ("to split")

→ lat. B *con-scious*, *science* ("to know" ← "to distinguish, to make a decision")

E.4.3. *j*

jakṣ 2. class: ved. ***jakṣiti*** ("to laugh")
Probably, ***jakṣ*** is the reduplicated form **ghe-ghs* (**DA**, **SPal**, **SIB**) ← ie. **ghes*, see *has* ("to laugh")

jatu n. ("lac, gum")

← ie. **g^{w}et-u*

→ lat. (via other languages that show ie. $^*g^w \rightarrow b$) B *bitu-men*

jan 4. class: ***jāyatê*** ("to beget, to be born")
jātu ("from birth, by nature, possibly")
jana ("man")
janaka ("father")
janitar ("father")

jan ("to beget")		
present tense	*jā-y-a-tê* (1)	*jā-y-a-tê* (1)
infinitive	*jan-i-tum* (2)	
PPP	*jā-ta* (1)	
future	*jan-i-ṣy-a-tê* (2)	*jan-i-ṣy-a-tê* (2)
imperfect	*a-jā-y-a-ta* (1)	*a-jā-y-a-n-ta* (1)
perfect	*ja-jñ-ê* (3)	*ja-jñ-irê* (3)
iṣ-aorist	*a-jan-iṣ-ta* (2)	*a-jan-iṣ-a-ta* (2, 4)
desiderative	*ji-jan-i-ṣ-tê* (2)	*ji-jan-i-ṣ-u* (2)

1. The ie. full grade root is $^*ǵenH$. The 4. class builds on the zero grade. By **Lar_SY**, *jā-y-a-tê* is regular from ie. $^*ǵ\underset{\circ}{n}H$*-ye-tei*. Similarly, we have zero grades in imperfect and PPP.

2. By **Lar_*V***, the laryngeal shows up as *i* between consonants in *jan-i-tum* ← $^*ǵenH$*-tum* and in several other forms.

3. The (weak!) ātmanêpada perfect endings are *ê* and *irê* for sg. and pl., respectively. Before these vowel-endings, the laryngeal regularly drops.

4. **SY_*N*** explains *a-jan-iṣ-a-ta* for 3. pers. pl. ending *n-ta*.

← ie. root $^*ǵenh_1$

→ gr.

◇ B *genealogy*

◇ B *genesis* (in particular, the first book of the Old Testament that describes the creation of Earth and mankind)

∼ lat.

◇ B *general* ("pertaining to people of the same descent → shared by all")

◇ B *in-gen-eous*

◇ B *pre-gn-ant*

- ◇ (B) *genus* and pl. *genera* (**LAT_*sr***) ∼ oi. *jana* (“people, person”)
- ◇ B *germane* (“having the same father and mother → belonging, relevant”)
- ◇ *natus* in *ante Christum natum* (“before Christ was born”) and in the B *nation*, *nature*
- ◇ B *indi-gen-ous*
- ◇ B *primo-gen-iture*
- ◇ B *co-gnate* (“to be born with, related”), with ie. *ǵ* still present

∼ e. *kin*(ship)

∼ nhg. *Kind* (“begotten”, formally a PPP)

See also *jānu* and *jñā*.

jáni f./ ***jánī*** (“woman, wife”)

← ie. $^*g^wenh_2$ (**Lar_*V***)

→ gr. B *gyn*-ecology

∼ e. *queen* (compare *quick* under *jīv*)

∼ oir. *ben* (“woman”)

jānu n. (“knee”) (**L*o***)

← ie. **ǵenu/ǵonu*

→ lat. B *genu-flection*

∼ e. *knee* ∼ nhg. *Knie*

Related to *jñā* and *jan*? Alternatively, the basic meaning of ie. **ǵenu/ǵonu* is “curve” and this word is the same as *hanu* (“chin”)

jāmātar m. (“son-in-law”) (**L*o***)

← ie. **ǵomo/ *ǵem-ro*

→ ogr. *gambros* (“son-in-law”) (for the *b*, compare *ambrosia* s.v. *mṛ*)

ji 1. class: ***jayati*** (“to conquer”)
jāyā (“who has been captured → woman”) or from *jan*?
jyā 2. class: ***jyāti*** (“suppress”) ← ie. **ǵy-eh₂* (see pp. 79)

← ie. $^*ǵei$

jihva ("Zunge")

← ie. $^*dn̥ǵ\text{-}vh_2$

∼ lat. *lingua* franca with B *linguist* and in English *language* via French

∼ e. *tongue*∼ nhg. *Zunge*

∼ nir. *mo theanga féin* ("my own" tongue in the sense of "language")

jīv 1. class: ***jīvati*** ("to live") ← ie. z.g.$^*g^wih_3v\text{-}e\text{-}ti$ by **SPal** and **Lar_V**
jīva ("living")
gaya ("life, possession, dwelling place, family") ← ie. $^*g^woih_3o$ (no **SPal**)

← ie. root $^*g^weih_3(v)$

→ gr. B *bio*-logy (**OGR**)

∼ lat. B *vital*, *vitamin*, *Konvikt* (in Germany: a flat shared by catholic students of theology), *Vik*tualienmarkt (market place in Munich)

∼ germ.

- ◇ e. *quick*
- ◇ nlg. *erquicken*, *quicklebendig*
- ◇ nhg. *keck*

juṣ 6. class: ***juṣatê*** ("to like, to enjoy")
jôṣa ("satisfaction")

← ie. root $^*ǵeus$ ("to choose, to enjoy")

→ lat. *gūstus* in "with *gusto*" and French "chacun à son *goût*" where the circumflex is reminiscent of eliminated *s* (as in *hôpital*)

∼ e. *choose* ← Old English *ceosan* ∼ nhg. *kiesen* (old for "examine, choose") (**NHG_E**)

∼ nhg. *kosten* ("to taste, to enjoy") versus *erkoren*, *Kür* and *Kurfürst* by **VER**

jr̄ 1. class: ***jarati*** ("to waste away")
jīrṇa PPP ("wasted, aged")
jarā ("age")

← ie. root *ǵr̥H-no

→ lat. *grānum* (in "*cum grāno salis*") ← ie. *ǵr̥H-no* (**IE_SY_*L***) and B *pomegranate* or *Granatapfel*

∼ germ.

◇ z.g. e. *corn* ∼ nhg. *Korn* ← ie. *ǵr̥H-no* (**IE_SY_*L***)

◇ f.g. nhg. *Kern*

jñā 9. class: ***jānāti***("to know")
jijñāsā ("desire to find out → investigation")
jijñāsanam ("desire to find out → curiosity")

jñā ("to know")		
present tense	*jā-nā-ti* (1)	*jā-n-an-ti* (1, 2)
infinitive	*jñā-tum* (3)	
PPP	*jñā-ta* (4)	
future	*jñā-sy-a-ti* (3)	*jñā-sy-a-n-ti* (3)
imperfect	*a-jā-nā-t* (1)	*a-jā-n-an* (2)
perfect	*ja-jñ-âu* (5)	*ja-jñ-us* (5)
siṣ-aorist	*a-jñā-sī-t*	*a-jñā-siṣ-us*
desiderative	*ji-jñā-s-a-tê* (4)	*ji-jñā-su* (4)

1. The ie. root is **ǵenh₃*. Consider

class	*gaṇa sign	√ (f.g.)	3. pers. sg.
9	*ne*	*peuH*	*pu-ne-H-ti*
9	*ne*	*ǵenH*	*ǵn̥-ne-H-ti*

One should expect **ja-nā-ti* rather than *jā-nā-ti* above. Note that *jā* regularly occurs in infinitive and future forms, but also irregular in PPP.

2. For 9. class verbs, the class signs are

◇ *nā* for strong forms and

◇ *nī* for weak forms.

However, the 3. pers. pl. is always like here: *pu-na-nti*, *krī-ṇa-nti*, *jā-na-nti*

3. The infinitive and the future are formed regularly from the full grade *ǵneh₃* → *jñā*.

4. Very unusually, the PPP is formed with the full grade. The regular weak form would have been **ǵn̥H-to* → **jā-ta* which is the regularly formed PPP of *jan*. Similarly, the desiderative forms are also irregularly built on the full grade.

5. The perfect endings are *âu* for sg.. Here, as in *da-d-âu* from *dā* ("to give"), we seem to have weak forms also in the sg..

← ie. root **ǵneh*$_3$

→ gr. B *gnosis* ("knowledge of God"), *a-gno-stic* (for the first part, see p. 66)

∼ lat. B

- ◇ with *g*: *co-gn-ition* and *re-co-gn-ize* (compare *co-gnate* under *jan*)
- ◇ without g word-initial: to *note*, *notion*, *no-bility*

∼ e. *know* ← Old English *cnáwan*

∼ nhg. *kennen* (originally causative, see Gothic *kannjan*)

jñā seems a consequential verb (pp. 79) that is related to *jan* and perhaps also to *jānu*: The father recognizes his child by setting it on his *knee*.

E.5. Dental stops and nasal

E.5.1. *t*

takṣ 1. class: ***takṣati***/ 5. class: ***takṣṇôti*** ("to form by cutting")
takṣ-an m. ("carpenter")

← ie. root *teḱ-s* ("to produce")/ ie. reduplicated root **te-tḱ-en* (**SIB**)

→ gr. B *technical* from *technē* (← *teḱ-sneh*$_2$ where *s* is lost under aspiration of *k*)

∼ lat. B *tex-tile*

tad

← ie. **tod*

→ lat. *is-tud*

∼ e. *that*

∼ nhg. *das*

tan 8. class: ***tanôti*** ("to stretch")
tanu ("thin")
tanu f./ ***tanū*** ("body")
tan-tram ("loom, teaching, manual")

tan ("to stretch")		
present tense	*tan-ô-ti* (3)	*tan-v-an-ti* (4)
infinitive	*tan-tum* or *tan-i-tum* (1)	
PPP	*ta-ta* (2)	
future	*tan-i-ṣy-a-ti* (1)	*tan-i-ṣy-a-n-ti* (1)
imperfect	*a-tan-ô-t* (3)	*a-tan-v-an* (4)
perfect	*ta-tān-a* (5)	*tên-us* (6)
iṣ-aorist	*a-tan-ī-t*	*a-tan-iṣ-us*
desiderative	*ti-taṃ-s-a-ti* (7)	*ti-taṃ-s-u* (7)

1. The infinitive shows the full-grade form *tan*. The *i* in the second infinitive and also in the future forms (**RUKI**) does not go back to a laryngeal but has been produced by analogy.

2. **SY_*N***

3. See pp. C.2.5 for an analysis of the 8. class: Instead of interpreting *tan-ô-ti* (i.e., as *tan* + gaṇa sign *ô*), it is preferable to analyze *ta-ṇô-ti* as $^*t\underset{\circ}{n}$*-ne-u-ti* instead.

4. The pl. *tan-v-an-ti* should be analyzed as *ta-nv-an-ti*, i.e. with **SY_*N*** and gaṇa sign *nu* (***hV***). Although *tan* and all other verbs of the 8. class are athematic, the thematic *a* is to be expected in the PRII par. 3. pers. pl. forms as in practically all athematic classes except the third one (p. 147). The same holds for imperfect *a-ta-nv-an*.

5. The o-grade perfect sg. *ta-tān-a* ← ie. **te-ton-e* results from Brugmann's law **L*o*** as do, for example,

   ◇ *ba-bhār-a* ← *bhṛ* ("to bear") or

   ◇ *pa-pāt-a* ← pat ("to fall").

   See pp. 189.

6. *tên-us* or *pêt-us* (the latter from *pat*, "to fall") are analogical built on zero-grade forms like

   ◇ *sêd-* ← ie. **se-sd-* (root *sad*) or

   ◇ *yêt-* ← ie. **ye-it-* (root *yat*).

   See p. 195.

7. Similar to *mī-maṃ-s-a-tê* (p. 128) *ti-taṃ-s-a-ti*

   ◇ is build irregularly from the full grade (the regular zero-grade desiderative of *tan* would be **ti-ta-s-a-tê* by **SY_*N***

   ◇ shows anusvāra before *s*

← ie. root **ten*

→ gr. B *tone* (strings (of violins) are stretched to produce a tone)

∼ lat.

- ◇ B *ten-acious*
- ◇ B *ten-sion* and with prepositions: *de-ten-sion*, *pre-ten-sion*
- ◇ B with preposition *sub* (s.v. *upa*): to *sus-tain*, *sus-ten-ance*
- ◇ B with preposition *con*: to *con-tin-ue*, *con-tin-uous*

∼ e. *thin* ∼ nhg. *dünn*

∼ nhg. *dehnen* ("to stretch")

tap 1. class: ***tapati*** ("to be hot, to burn")
tapas ("heat, asceticism")
tapoja ("born from heat"), **CpL*z***

← ie. root **tep*

→ lat. B tepid

-tama superlative suffix (**Lar_SY**)
pra-tama (see ***pra***)
ut-tama (see ***ud***)

← ie. **tm̥H-o*

→ lat. *in-timus* ("inner")

tamas n. ("darkness")
tamisram ("darkness") (no **RUKI** because of *r* after *s*)

← ie. **temHs*

→ lat.

- ◇ *tenebrae* (pl., only), by dissimilation *temHs-r* → *temas-r* → *teneb-r*
- ◇ B *temerity* ("acting in the dark → audacity")

tark 10. class: ***tarkayati*** ("to consider, to ponder")
tarka ("science of reasoning, logic, consideration")
tarku ("spindle")

← ie. root *$terk^w$

→ lat. *torquere* with PPP *tortus* (by regular simplification) and B in English *torture*, *retort* and B in German *torkeln* (from lat. *torculum* („winepress“))

∼ nhg. *drechseln*

tij 1. class: ***têjati*** (“to become sharp”)
tig-ma (“sharp”)
tīkṣṇa (“sharp”) (difficult long *ī*)

← ie. root **(s)teig* (“to prick, to sting”)

→ gr. B *stigma*

∼ lat. B *in-stig-ation*

∼ e. *thistle* ∼ nhg. *Distel*

tiras (“sideward, horizontal”)
tirac (“sideward, horizontal”), see *añc*
tiryac (“horizontally going (animal)”)

tila (“sesame plant, sesame corn”)
tâilam (“oil”) → pa. *tēla* → pkt. *tĕlla* (**LawOfMorae**)

tud 6. class: ***tudati*** (“to strike, to hit”)

← ie. root **(s)teu(n)d*

→ lat. B *studēre* (“to be thrusting → to strive after”) with B *study*

∼ nhg. *stoßen* (“to bump, to thrust”)

tumra (“big, powerful”) ← n.at. oi. root *tum* (see pp. 121)

← ie. root **teum*

→ lat. B *tumid*, *tumour*, *tumult*

Perhaps related to *tū*.

turīya “fourth” (**CCl**, **Lar_V**) with zero grade of both vowels compared to ie. *k^wetvor* → *catvāras* (nom. pl. m.) “four”

← ie. $^*k^w tur\text{-}iHo$

tū 2. class: ***tâuti*** ("to be strong, to have authority")

← ie. $^*teuh_2$

→ lat. B *tutor*, *tutelage*

∼ e. *thumb*∼ nhg. *Daumen*

tṛṣ 4. class: ***tṛṣyati*** ("to thirst")
mi. ***tasati*/*tasyati*** with expected $ṛ \to a$ and $ṣ \to s$

← ie. root $^*ters$ ("be dry")

→ lat.

- ◇ lat. *terra* ("the dry one, the earth") with B *terrarium*, *territory*, French *souterrain*
- ◇ B *toast* ← lat. *tostus* ← $^*torstos$ ("dried")

∼ e. *thirst* ∼ nhg. *Durst*

tr̄ 1. class: ***tarati***/ 4. class: ***tirati*** ("to cross, to rescue")
tīrṇa PPP
titīrṣati desiderative
tīram ("bank, shore")
tīrtha*/*tīrtham ("ford, passage → ritual bath place")

← ie. root $^*terh_2$

→ og. *tor-nos* → lat. *tornus* → B in German *Turnus* ("cycle, rotation"), and, via French *tourner*, B in English *tour*, *tourist* and B in German *Turnier* ("having horses run in a cycle cycle → competition"), whence *Turner* ("young fighter" → "gymnast")

∼ lat. *trāns* ("across, through") ← pres.P ie. $^*trh_2nt\text{-}s$ ("crossing") with B in English *trans*national, *trans*gender, etc.

∼ e. *throw*, e. *thread* ∼ nhg. *Draht* („wire"), nhg. *drehen* ("to twist")

See *trā*.

tê, enclitic for pers. pron. 2. pers. sg. both gen. (for non-enclitic *tava*) and dat. (for non-enclitic *tubhyam*)

← ie. **toi*

→ ogr. *toi*

tê, 1. pers. pl. of *tad*

← ie. **toi*

→ lat. *is-tī*

∼ nhg. *die*

tyaj 1. class: ***tyajati*** ("to abandon")
ti-tik-ṣ-u ("enduring patiently" which is semantically difficult)

← ie. root **tyeg*^{w}

→ ogr. *sebomai* ("I worship, I am respectful") with PPP *sebastos* ("venerable") in PN *Sebastian*.

trayas ("three")

← ie. **treyes*

→ gr. B *triad*

∼ lat. B *triumvirate* (for second part see *vīra*)

∼ e. *three* ∼ nhg. *drei*

tras 1. class: ***trasati*** ("to tremble")
mi. ***tasati*** with expected *tr* → *t*

← ie. root **tres*/ **ters*

→ lat. B *terror*, *terrible*

trā 2. class: ***trāti*** ("to save")
Consequential of *tṝ*, see pp. 79.

tvam ("you")

← ie. **t-*

→ lat. *tū*

$\sim$ e. *thou* $\sim$ nhg. *du*

tvar 1. class: ***tvaratê*** ("to hurry")
tūr-ṇa, ***tūr-ta*** PPP
sa-tvaram adv. ("fast")
a-tvarā ("without hurry $\rightarrow$ leisure")

$\leftarrow$ ie. root **tverH*

E.5.2. *d*

daṃś 1. class: ***daṃśati***/ 10. class: ***daṃśayati*** ("to speak, to shine")
pf.P ***dāśva*** corrupted from ***dāśva(n)s*** ("liberal, giving, a donor"), reduplicated from ie. **de-dḱ-vo-* by (**CpL *dḱ***) (see p. 224)

$\leftarrow$ ie. root **de(n)ḱ*

dakṣa ("fit, able")
dakṣiṇa ("right" [right hand is the able one?], "southern" [facing eastward, the southern direction is on the right])

$\leftarrow$ ie. root **deḱs*

$\rightarrow$ lat. B *dex-terity*

daṇḍa ("stick, punishment"), mi. where *r* has cerabralized *ṇḍ*.

$\leftarrow$ ie. **dendr-o*

$\rightarrow$ ogr. *dendron* ("tree") with B *rhododendron*

danta, see *ad*

dabh 1. class: ***dabhati***/ 5. class: ***dabhnôti*** ("to hurt, to destroy")
dabh-ra ("little deficient")
dah-ra ("small, fine") (see subsection B.3.10)
dhip-s-a-ti (p. 132) desiderative

$\leftarrow$ ie. root **dhebh* ("to build, to fit")

dam 4. class: ***dāmyati*** ("to tame")
dānta PPP
dama ("house")

← ie. root **dem* ("to build, to fit")

→ gr. B *despot*← *dems potis ("lord of the house", for second part see *pati*)

∼ lat. B *dome*, *dominate*, *domesticate*, Italian *madonna* (← *mea domina*, "Maria, the mother of Jesus"), French *madame*

∼ germ.

- ◇ e. tame ∼ nhg. *zahm*
- ◇ e. *timber* ∼ nhg. *Zimmermann*
- ◇ nhg. *ziemlich* ("fairly, tolerably" and, unusually, "properly")

daśa ("ten")

← ie. **dék̑m̥*

→ ogr. *deka* with B *decade*

∼ lat. *decem* with B *dean* ("leader of 10 men, of a faculty"), *deciliter*, *decimate* ("to kill every 10. man")

∼ e. *ten* ∼ nhg. *zehn*

Note ie. **dék̑m̥t* ("a tenner") in *pañcāśat*. See *śatám*.

dah 1. class: ***dahati*** ("to burn")

dah ("to burn")		
present tense	*dah-a-ti* (1)	*dah-a-n-ti* (1)
infinitive	*dag-dhum* (2)	
PPP	*dag-dha* (2, 3)	
future	*dhak-ṣy-a-ti* (4)	*dhak-ṣy-a-n-ti* (4)
imperfect	*a-dah-a-t* (1)	*a-dah-a-n* (1)
perfect	*da-dāh-a* (5)	*da-dah-us* (3)
iṣ-aorist	*a-dhāk-ṣī-t* (4, 6)	*a-dhāk-ṣ-us* (4, 6)
desiderative	*di-dhak-ṣ-a-ti* (3, 4)	*di-dhak-ṣ-u* (3, 4)

1. From ie. **dheg*^{w}*h-e-ti*, *dah-a-ti* is obtained by **DA** and **SPal**.
2. The infinitive *dag-dhum* results from both aspiration laws **DA** and **ASh**.

3. **DA** and **ASh** also operate to produce the PPP *dag-dha* which, however, irregularly uses the full grade. Irregular full grade is also seen in the desiderative.

4. The future forms belong to a class of verbs with aspirated voiced stops in both root-initial and root-final positions. Since **ASh** relieves the root-final velar of its aspiration (which cannot be assumed by *s* or *sy*), **DA** cannot be applied. Compare *bhot-sy-a-ti* (p. 38). Here, as in the aorist and the desiderative, the ie. root-initial aspiration is revealed within Sanskrit!

5. For the perfect sg. *da-dāh-a*, consult pp. 188 to see the how Brugmann's law **L*o*** produces the long *ā*.

6. Irregularly, this *iṣ*-aorist (pp. 200) builds on the lengthened grade. Perhaps, since the PPP uses the full grade rather than the regular zero grade, the aorist employs the lengthened grade rather than the regular full grade.

← ie. root $^*dheg^wh$

→ lat. B *fever*

dā 3. class: ***da-dā-ti*** ("to give")

dā ("to give")		
present tense	*da-dā-ti* (1)	*da-d-a-ti* (2)
infinitive	*dā-tum* (3)	
PPP	*di-ta/dat-ta* (4)	
future	*dā-sy-a-ti* (3)	*dā-sy-a-n-ti* (3)
imperfect	*a-da-dā-t* (1)	*a-da-d-us* (5)
perfect	*da-d-âu* (6)	*da-d-us*
root aorist	*a-dā-t*	*a-d-us*
desiderative	*di-t-s-a-ti* (7)	*di-t-s-u* (7)

1. The sg. *da-dā-ti* is a strong form (in full grade) and goes back to $^*de\text{-}deh_3\text{-}ti$.

2. In contrast, the pl. *da-d-a-ti* is in zero grade. The 3. class does not exhibit the thematic *a* in par. 3. pers. pl. (which is present in the other athematic verbs) so that we find

   ◇ *bi-bhr-a-ti* ← $^*bi\text{-}bhr\text{-}\underset{\circ}{n}\text{-}ti$ or

   ◇ *da-d-a-ti* ← $^*de\text{-}dh_3\underset{\circ}{n}\text{-}ti$ (**Lar_*CH***: the laryngeal h_3 leaves no effect before the vowel $\underset{\circ}{n}$.

3. The infinitive and the future show expected full grade.

4. The PPP di-ta is regular where the laryngeal turns into *i* between consonants. The irregular *datta* may have this explanation: The present tense 1. pers. sg. *da-dā-mi* might be misunderstood as *dad-ā-mi* with root **dad* whence a PPP *datta* ← *dad-ta* (**BA**) would arise.

5. In the third class, the imperfect 3. pers. pl. has ending *us* so that we have zero grade *a-da-d-us*. By **Lar_*CH***, the laryngeal h_3 drops between consonant *d* and vowel *u*. Indeed, *dā* ("to give") and *dhā* ("to set, to put") are formed regularly with the zero grade. Irregularly, the full grade is present in most verbs of the third class, as in *a-bi-bhay-us* from *bhī* or *a-bi-bhar-us* from *bhṛ*).

6. The perfect *da-d-âu* exhibits
   - ◇ 3. pers. sg. ending *âu* and
   - ◇ weak form.

   For similar examples like *ta-sth-âu* from *sthā*, see p. 192.

7. The desiderative (see pp. 126) is formed by reduplication with *i*, zero grade and suffix *s* (or maybe *Hs*):

   **di-dh*$_3$*-s-*
   → *di-d-s-* (**Lar_*V***)
   → *di-t-s-* (**BA**)
   - → *di-t-s-a-ti* he wishes to give
   - → *di-t-s-u* wishing to give
   - → *di-t-s-ā* desire to give

   An irregular alternative desiderative *didāsati* exists where *ā* has been taken from *da-dā-ti* or other forms with long ā**.**

← ie. root **deh*$_3$

→ gr. B *dose* (in German, closer to the original: *Dosis*) also gr. B *an-ec-dote* (originally "not edited")

∼ lat. B *date* and *data* (PPP forms) with prefixes: lat. B *e-dit*, *man-date*, *tra-dit-ion*

dā 4. class: ***dya-ti*** ("to bind") ← ie. **dH-ye-ti*
a-di-ti f. ("freedom, liberation") ← ie. **n̥dH-ti* (**SY_*N***; pp. 119 plus **Lar_*V***)

← ie. **deH*

dāru n. ("wood") (**L*o***)

← ie. **doru*

→ e. *tree*, *true*

∼ nhg. *Treue*, *Trost*, *trauen* where $t \rightarrow ts$ is repressed–just try to pronounce *tsreu*.

dāś 1. class: ***dāśati***/ 2. class: ***dāṣṭi***/ 5. class: ***dāśnoti*** ("to venerate, to consecrate")??
kāś ??warum lang
dīkṣ 1. class: ***dīkṣ-a-tê*** ("to initiate, to consecrate"), desiderative ←**di-dḱ-s-* (**CpL*dḱ***)

← ie. root **deḱ* ("to receive, to embellish")

→ lat.

- ◇ B *decor*, *dig-nity*
- ◇ desiderative: lat. *discere* ("to want to perceive → to learn") or frequentative ("to take in repeatedly → to learn") with iterative suffix *sḱe* (see *gam*, *vāñch*)
- ◇ causative: lat. *docere* (← ie. causative **deḱ-eye-*) ("to make perceive → to teach") with B *docile*, *document*, *doctor*

dinam ("day"), see *dêva*.

div 4. class: ***dīv-y-a-ti*** ("to play")
dyū-ta PPP ("gambling, gaming")

← ie. root **deiHv* (**Lar_MTh**)

See *siv*.

diś 6. class: ***diśati***("to show")
diś f. ("hint, direction")
diṣṭi f. ("hint, fortune") with instrum. ***diṣṭyā*** ("Thank God!")
deśa ("region, land")

← ie. root **deiḱ*

→ ogr. *deik-nu-mi* ("I show") with B *apo-dic-tic*, *para-dig-m*, *syn-dic-ate*, all of them in zero grade

∼ lat. *dīcere* (**LAT_*V***) with zero-grade B *ver-dict*, *e-dict*, *dictator*, and, via Italian, in German

- ◇ *ver-male-deit* ("accursed") and,
- ◇ from the rosary prayer "*ge-bene-deit* ist die Frucht deines Leibes, Jesus".

∼ germ.

- ◇ nhg. *ver-zeihen* and also *zeigen*, *Zeigefinger*

◇ e. *toe* ∼ nhg. *Zehe* (i.e., finger (pointer) of the foot)

◇ e. *token* ∼ nhg. *Zeichen* ("sign")

dih 2. class: ***dêgdhi*** ("to smear")

dih ("to smear")		
present tense	*dêg-dhi* (1)	*dih-an-ti* (3)
infinitive	*dêg-dhum* (1)	
PPP	*dig-dha* (1, 2)	
future	*dhêk-ṣy-a-ti* (4)	*dhêk-ṣy-a-n-ti* (4)
imperfect	*a-dhêk* (4, 5)	*a-dih-an* (3)
perfect	*di-dih-ê* (6)	*di-dih-irê* (6)
aorist		*a-dhikṣ-us* (4, 7)
desiderative	*di-dhik-ṣ-a-ti* (4, 8)	

1. The origin is ie. **dheigh*. The full grade yields oi. *ê* and the two aspiration laws **DA** and **ASh** lead to *dêg-dhi* and the infinitive *dêg-dhum*.

2. The PPP is also explained by the two aspiration laws, of course in zero grade.

3. Although athematic, 3. pers. PRII exhibits *an*. This holds for all verbs in the 2. class (except *śās*, see 163), but the 3. class shows just *n* (which would then turn into *a*).

4. The future form *dhêk-ṣy-a-ti* needs three observations:
   ◇ Failed aspiration shift together with expected backward assimilation produces *k* from *gh*.
   ◇ Very much like in *dhôk-ṣy-a-ti* ← ie. **dheugh-s* from *duh* ("to milk"), the ie. initial *dh* is revealed. No need for **DA**.
   ◇ **RUKI**

5. *a-dhêk* is explained by **CCl** and **AFP** (pp. 44). **AFP** is then followed by non-application of **DA** (similar to 4.).

6. The perfect forms are ātmanêpada and hence weak (pp. 188).

7. It is not clear what type of aorist *a-dhikṣ-us* might be. For *dh* compare 4.

8. *di-dhik-ṣ-a-ti* is expected desiderative in zero grade and without **DA** in the second syllable, but **DA** in the reduplication syllable.

← ie. root **dheigh*

→ lat. *fingere* (“to build”) with present-stem nasal infix that is still present in
- ◇ Englisch to *feign*
- ◇ German *fingieren* (“to feign”), and
- ◇ German *Finte* (via Italian)

∼ lat. without the nasal infix, B *figure*, *fiction* (backward assimilation)

∼ nhg. *Teig* ∼ e. *dough* (also in *doughnut* = *donut*)

∼ e. *la-dy* ← Old English *hlæf-dīge* (“woman who kneads dough → woman whose bread one eats”) where the first part *hlæf* is e. *loaf* ∼ nhg. *Laib*.

dīrgha (“long”) (**rl**, **Lar_SY**)

← ie. **dleHgh*

→ lat. B *longus* with B *long-itude*

∼ e. *long* ∼ nhg. *lang*

dus (“bad, evil”), used in combinations such as

◇ ***dur-uktá*** (“bad word”)

◇ ***duḥ-kham*** (“misfortune”), see *su-kham*

◇ ***dur-ga*** (“place that is difficult to get at, danger”), see *gam*

◇ ***dur-gā*** (*devī*) (“inaccessible goddess, Shiva’s wife”)

◇ ***dur-bala*** (“without power”), see *balam*

◇ ***duṣ-kṛt*** (“acting in an evil manner”), see *kṛ*

duh 2. class: ***dôgdhi*** (“to milk”)

dih (“to milk”)		
present tense	*dôg-dhi* (1)	*duh-an-ti* (3)
infinitive	*dôg-dhum* (1)	
PPP	*dug-dha* (1, 2)	
future	*dhôk-ṣy-a-ti* (4)	*dhôk-ṣy-a-n-ti* (4)
imperfect	*a-dhôk* (4, 5)	*a-duh-an* (3)
perfect	*du-dôh-a* (6)	*du-duh-us* (6)
sa-aorist	*a-dhuk-ṣ-a-t* (4)	*a-dhuk-ṣ-a-n* (4)
desiderative	*du-dhuk-ṣ-a-ti* (4, 7)	*du-dhuk-ṣ-u* (4, 7)

1. The origin is ie. **dheugh* or even *dheugh*$_2$ if the connection with *duhitar* is correct. The full grade yields oi. *ô* and the two aspiration laws **DA** and **ASh** lead to *dôg-dhi* and the infinitive *dôg-dhum*.

2. The PPP is also explained by the two aspiration laws, of course in zero grade.

3. Although athematic, 3. pers. PRII exhibits *an*. This holds for all verbs in the 2. class (except *śās*, see 163), but the 3. class shows just *n* (which would then turn into *a*).

4. The future, the aorist and the desiderative reflect failed **DA** and then **BA**, and **RUKI** (which explain *k-ṣ*). **DA** cannot occur in the main syllable.

5. *a-dhôk* is explained by **CCl** and **AFP** (pp. 44). **AFP** is then followed by non-application of **DA** (similar to 4.).

6. The sg. perfect form is in parasmâipada and hence strong (pp. 188). The plural is regularly weak.

7. *du-dhukṣ-a-ti* is expected desiderative in zero grade and without **DA** in the second syllable, but **DA** in the reduplication syllable.

← ie. root **dheugh*

→ ogr. *tuchē* f. ("hazard, luck") (**OGR**, **OGR_DA**), compare Vedic *dugha* ("milk cow")

It has been surmised that oi. *duh* is back-formation from *duhitā* ("daughter")

duhitar f. "daughter"

← ie. **dhug-h*$_2$*ter* (see p. 52)

→ ogr. *thugatēr*

∼ e. *daughter*

∼ nhg. *Tochter*

dūra ("far, distant")
dav-īyans (comparative, "farther")
dav-iṣṭha (superlative, "farthest")

← ie. **duh*$_2$*-ro* ("far, long")

→ lat. B *duration*

dṛh 1. class: ***darh-a-ti*** ("to make firm")
di-darh-i-ṣa ("he wishes to make firm") desiderative, irregularly with full grade and "thematic" *i*
dṛḍha ("fixed, firm, tough") PPP (see p. 116)

← ie. root **delǵh*

→ lat. B *in-dulg-ent* (for *in* see p. 66)

dṛś 1. class: *paśyati* ("to see")
dṛṣ-ṭa PPP (**Cer*D***)
dṛś f. ("sight")
ī-dṛṣ, ***īdṛkṣa*** ("as seen → suchlike")
darśanam ("seeing, system, revelation")

← ie. root *derḱ*

→ ogr. *derkomai*

dṝ 9. class: ***dṛ-ṇā-ti*** ("to break, to tear")
didīrṣati ("he wishes to tear") desiderative (p. 133)

← ie. root **derH*

→ gr. B *der-mis*, *der-matology*

∼ e. to *tear* ∼ nhg. *zerren*

dêva ("god")
divya ("heavenly, divine")
dina ("day")
prati-dinam ("every day") ← *prati* + *dinam*
a-dya ("today")
dyâuṣ-pitar ("father of the the heaven")

← ie. **dei*

→ gr. god *Zeus* ("god of heaven and daylight")

∼ lat.

- ◇ B *divine*, *divinity*, Latin phrase "*deus* ex machina" (with v-extension like oi. *dêva* and *divya*)
- ◇ god *Iū-piter* ∼ oi. *dyâuṣ-pitar*

∼ nir. *Dia dhuit!* ("God be with you" → "hello")

See *hyas*.

dram 1. class: ***dramati*** ("to run, to move about")
dru 1. class: ***dravati*** ("to haste")
drā 2. class: ***drāti*** ("to run") ← ie. **dr-eh*$_2$ (consequential, see p. 79)

← ie. root **der*/ **drem*/ **drev*

dvā ("two"), see *dvi* below
dvādaśa ("twelve")

← ie. **du(v)ō* (***V*** + ***hV***)

→ gr. B *duo-poly*

∼ lat.

- ◇ *duo* with B *duett*, *dualism*, *doubt* ("which of *two* alternatives is correct?")
- ◇ *duo-decim* (see *dáśa*) with B English *dozen* and German *Dutzend*
- ◇ *du-plus* ("twofold, twice as much", for *plus* see *pṝ* ("to fill")) with B English *double* and German *doppelt*

∼ germ.

- ◇ e. *two* ∼ nhg. *zwei*
- ◇ e. *twig* ∼ nhg. *Zweig*

dvi (see *dvā* above) used in combinations such as

◇ ***dvi-pad*** ("with two feet") and similar in

- ogr. *dí-pous*
- lat. B *bi-ped* and
- Old English *twi-féte*

◇ ***dvi-dêvata*** ("for two goods")

◇ ***dvi-ja*** ("twice born → Brahmin, bird"), for second part see also *jan*

◇ ***dvi-bhuja*** ("with two arms")

◇ ***dvi-vacana*** ("dual"), for second part see *vac*

◇ ***dvi-jāni*** ("twice married"), for second part see jani

← ie. **dvis*/**dvi*

→ ogr. *di* and *dí-pous* (“with two feet”) and gr. B (via Latin) *di-ploma* (“a certificate that is folded (twice)”)

∼ lat.

◇ *bi* and lat. B *bi-sexual*, *bi-annual*, *bi-lateral*

◇ lat. *dīvidere* (“to separate, to divide”) s.v. *dhā*

◇ lat. *bellum* ← Old Latin *dvellum* (“war between two parties”), but unclear

∼ nhg. composition form *zwie* with *Zwieback* (“rusk”), *Zwirn* (“thread, yarn”), *Zwitter* (“hybrid, hermaphrodite”), *Zwiesprache* (“dialogue”), *Zwilling* (“twin”), *zwischen* (“between two parts”).

dvār f. (“door”) (with *d* instead of *dh* because of *dvā*?)

← ie. **dhwer / dhur*

→ lat. B *forum*

∼ e. *door* ∼ nhg. *Tür* and *Tor*

dviṣ 2. class: ***dvêṣṭi*** (“to hate”)

dviṣ (“to hate”)		
present tense	*dvêṣ-ṭi* (1)	*dviṣ-an-ti* (3)
infinitive	*dvêṣ-ṭum* (1)	
PPP	*dviṣ-ta* (1)	
future	*dvêk-ṣy-a-ti* (2)	*dvêk-ṣy-a-n-ti* (2)
imperfect	*a-dvêt* (3)	*a-dviṣ-an*
perfect	*di-dvêṣ-a* (4)	*di-dviṣ-us* (4)
sa-aorist	*a-dvik-ṣ-a-t* (2)	*a-dvik-ṣ-a-n* (2)
desiderative	*di-dvik-ṣ-a-ti* (2)	*di-dvik-ṣ-u* (2)

1. Assuming ie. **dveis*, we obtain the present tense, 3. pers. sg.

   **dveis-ti* (full grade)

   → *dvês-ti* (**DIPH**)

   → *dvêṣ-ti* (**RUKI**)

   → *dvêṣ-ṭi* (**Cer*D***)

   The infinitive *dvêṣ-ṭum* and the PPP *dviṣ-ta* (zero grade) can be explained in very much the same manner.

2. **SIB**

3. *a-dvê-ṭ* is regular:

   *e-*dveis-t* (full grade)
   → *e-dvês-t* (**DIPH**)
   → *e-dvêṣ-t* (**RUKI**)
   → *a-dvêṣ-ṭ* (**CerD**, ***aā***)
   → *a-dvê-ṭ* (**AFP**)

4. The perfect forms *di-dvêṣ-a* (strong form) and *dvi-dviṣ-us* (weak form) present no problems (see pp. 188).

← ie. root **dveis*

dviṣ may well be related to *dvis*/*dvi* ("twice").

dvis*/*dvi ("twice"), see *duvā*

E.5.3. *dh*

dhan 3. class: ***da-dhan-ti*** ("to run, to bear fruit")
dhanya ("rich")

← ie. root **dhenh*$_2$

→ gr. B *eu-thanasia* (see *su*), *thanatology* (with euphemism "to run away → to die")

∼ lat. *B foun-tain*

dhā 3. class: ***da-dhā-ti*** ("to set, to put")
dhātar m. ("founder, preserver, fate")
śraddhā ("belief, trust"), see s.v.
svadhā ("custom, home") ← *sva* + *dhā*, see s.v.
dvi-dhā ("twofold")
tri-dhā ("threefold")
vi-dhā ("to distribute, to determine") with

◇ *vi-dhi* m. ("regulation, method, rite")

◇ *vi-dhêya* gerundive ("which is to be determined")

◇ *vi-dhêya* ("duty, obligation")

dhā ("to set, to put")		
present tense	*da-dhā-ti* (1)	*da-dh-a-ti* (2)
infinitive	*dhā-tum* (3)	
PPP	*hi-ta* (4)	
future	*dhā-sy-a-ti* (3)	*dhā-sy-a-n-ti* (3)
imperfect	*a-da-dhā-t* (1)	*a-da-dh-us* (5)
perfect	*da-dh-âu* (6)	*da-dh-us*
root aorist	*a-dhā-t*	*a-dh-us*
desiderative	*dhi-t-s-a-ti* (7)	

1. The sg. *da-dhā-ti* is a strong form (in full grade) and originates from ie. **dhe-dheh*$_1$*-ti* by **DA**

2. In contrast, the pl. *da-dh-a-ti* is in zero grade. The 3. class does not exhibit the thematic *a* in par. 3. pers. pl. (which is present in the other athematic verbs). Compare *bi-bhr-a-ti* ← **bi-bhr-*$\underset{\circ}{n}$*-ti* or *da-d-a-ti* ← **de-dh*$_3\underset{\circ}{n}$*-ti* (**Lar_*CH***: the laryngeal h_3 drops between consonant *d* and vowel $\underset{\circ}{n}$).

3. The infinitive and the future show expected full grade.

4. For the PPP *hi-ta*, remember

   ◇ occasional word initial *dh* → *h* (p. 53) and

   ◇ **Lar_*V*** between consonants

5. In the pl., we have the expected zero grade, as in *a-da-d-us* from *dā* ("to give").

6. The perfect *da-dh-âu* exhibits

   ◇ 3. pers. sg. ending *âu* and

   ◇ weak form.

   For similar examples like *ta-sth-âu* from *sthā*, see p. 192.

7. The desiderative (see pp. 126) is formed by reduplication with *i*, zero grade and suffix *s* (or maybe *Hs*):

   **dhi-dhh*$_1$*-s-*
   → *dhi-dh-s-* (see **Lar_*V***)
   → *dhi-d-s-* (**ASh**, but *s* not aspiratable)
   → *dhi-t-s-* (**BA**) → *dhi-t-s-a-ti* he wishes to set

   A regular (!) alternative desiderative *didhiṣati* exists where the laryngeal does not drop:

**dhi-dhh$_1$-s-*
→ *dhi-dhi-s-* (**Lar_V**)
→ *di-dhi-s-* (**DA**)
→ *di-dhi-ṣ-* (**RUKI**) → *didhiṣati* he wishes to set

8. Finally, note 2. pers. pres. tense ātm. *dhatsê* (not shown in the above table):

**dhe-dhh$_1$-soi*
→ *dhe-dh-soi* (see **Lar_V**)
→ *dha-dh-sê* (***aā***, **DIPH**)
→ *dha-d-sê* (**ASh**, but *s* not aspiratable)
→ *dhatsê* (**BA**)

In contrast, the corresponding 3. pers. *dhat-tê* is "wrong". One should expect the *bud-dha* result:

**dhe-dhh$_1$-toi*
→ *dhe-dh-toi* (see **Lar_V**)
→ *dha-dh-tê* (***aā***, **DIPH**)
→ *dha-d-dhê* (**ASh**)
→ *da-d-dhê* (**DA**)

However, proportional analogy produced

dā	with 3. pers. sg. pres. tense ātm.	*dat-tê* ← **dad-tê*
just as		
dhā	with 3. pers. sg. pres. tense ātm.	*dhat-tê*

Alternatively, one may surmise that a laryngeal somehow prevented **ASh** to affect the *tê*-ending.

← ie. root **dheh$_1$* ("to put")

→ agr. *ti-thē-mi* (**OGR**, **OGR_DA**)

◇ with *k*-extension (archaic) B *apothecary* (in German: *Apotheke*), B in German: *Bibliothek*, *Theke*

◇ with other extensions *thesis* and *theme*

◇ ogr. *ēthos* in B *ethics* (**OGR_DA** twice, **OGR_DA**) ← ie. **s(v)ed^{h}us* (see s.v. *svadhā*)

∼ lat.

◇ *facere* ("to make, to do") with B *af-fect*, *perfect*, *efficient*, *deficit*, *fak-simile*, *dif-fic-ult*, *fac-ulty*, *pre-fec-ture*

◇ *ponti-fex* ("bridge maker") and even: *pontiff* (for first part see s.v. *panth*)

- ◇ *dīvidere* ("to separate, to divide") ← ie. **dvi-dhh*$_1$- ("to separate, to distinguish") (for first part, see s.v. *dvi*, for second part, compare) with B *division*, *dividend*
- ◇ *cēdere* ("to go, to proceed") ← ie. **kýes-dhh*$_1$ (see s.v. *sidh* ("to interdict, to drive away"))
- ◇ B *multi-fa-rious*, compare oi. *dvi-dhā*

∼ French *façon*, hence English *fashion*

∼ germ.

- ◇ e. *do* ∼ nhg. *tun*
- ◇ e. *deed* ∼ nhg. *Tat*
- ◇ ending e. *-dom* ∼ nhg. *-tum* in Christendom/ *Christentum*

See also *dhê*.

dhī 3. class: ***di-dhī-tê*** ("to think, to reflect")
dhī-ra ("steady, head-strong"), see pp. C.4.6

← ie. root **dheiH*

dhū 5. class: ***dhū-nô-ti***/ 6. class: ***dhuvati***/ ("to agitate, to blow away")
dhūma ("smoke")
dhū-li f./m. ("dust, fog"), *l*-extension

← ie. root **dheuH* with *m*-extension or with other extensions

→ gr. B *thyme*

∼ lat. B *fume* (**LAT_*f***), *per-fume*, French *par-fumé* ("*perfumed*")

∼ germ.

- ◇ e. *deer* ∼ nhg. *Tier* ("animal", semantically similar *animal* s.v. *an*)
- ◇ e. to *doze* ∼ nlg. *dösen* ("to doze")/ *Döskopp* ("dozy idiot") and also nhg. *Tor* ("intoxicated → fool")

dhṛ 1. class: ***dhar-a-ti*** ("to hold, to keep")
dhar-ma ("law, religion, duty")
dhar-man n. ("law")/ ***dhar-man*** m. ("upholder")

← ie. root **dher* with *m*-extension

→ lat. B *firm* (**LAT_*f***), to *con-firm*, *firm-ament*

dhṛṣ 5. class: ***dhṛṣṇôti*** (“to dare”)

← ie. root **dhers*

→ e. *dare* (but **not** nhg. *trauen*, see *dāru*)

dhê 1. class: ***dhayati*** (“to suck, to slurp”)
dhênā (“milk cow”)
dhênu f. (“milk cow”)
dhātrī (“nurse”), but see *dhātar* under *dhā*
dhāru (“sucking”)
dhāsyu (“willing to drink, willing to eat”)
gôdhā (“sucking cows” → name for a kind of lizard), for first part see *gô*

← ie. root **dheh*$_1$*-i* (*i*-extension of ie. **dheh*$_1$ s.v. *dhā*, here baby is put to mother’s breast)

→ lat. (**LAT_*f***)
- ◇ B *fe-cundity*
- ◇ B *fe-licity* ∼ oi. *dhā-ru*
- ◇ B *fe-minine*
- ◇ *fi-lius* (“son”)
- ◇ B *fe-tus*
- ◇ B *fe-llatio*

dhyâ(i) 4. class: ***dhyā-ya-ti*** (“to think, to contemplate”)
dhyā 2. class: ***dhyā-ti*** (“to think, to contemplate”)
dhyā-nam (“meditation”) → pa. *jhāna* → *Zen* (buddhism)
dhyā consequential of *dhī*, see pp. 79.

dhru-ti f. (“leading astray, corruption, deception”)

← ie. root **dhreu*

→ lat. B *frau-d* (**LAT_*f***)

E.5.4. *n*

na (“not, no”)

← ie. **ne*, full grade of ie. **n̥* (see alpha privatimum *a*)

→ lat. *ne* in B *ne-gative*, to *ne-gate*, to *ne-glect*

→ lat. *neque* ∼ oi. *na ca* ("and not") ← ie. $^*nek^we$ (see *ca*)

∼ nhg. *nie* ("never") ← ie. $^*ne + i$ (deictic particle, see *iha*)

naktam ("night")

← ie. $^*nok^wt$

→ lat. B *noct-urnal*

∼ e. *night* ∼ nhg. *Nacht*

nagna ("naked, bare")

← ie. $^*no\text{-}g^w$

→ with nasal prefix: ogr. *gymnos* with gr. B *gymnastics*

→ without nasal prefix

◇ lat. B *nude*

◇ e. *naked*

nadh ("to bind") (in dictionaries normally under *nah*)
naddha ("bound") PPP, see pp. 108 (**SY_N**)
naddhi f. ("binding") ← *nadh-ti*, see pp. 119 (**SY_N**)

← ie. root $^*nendh$

nand 1. class: ***nandati*** ("to rejoice, to be satisfied")
ānanda/***ānandam*** ("delight"), hence
sānanda ("delighted") with first part *sa* ("together with")

nap-tar m. ("grandson")

← ie. $^*nepot$ ("male descendant other than son")

→ lat. B *nepotism*

∼ germ.

◇ e. *nephew* ∼ nhg. *Neffe*

◇ e. *niece* ∼ nlg. *Nichte* ← ie. $^*neptī$ f. (with Low German *cht* for Germanic *ft*, as in Dutch *gracht* s.v. *grabh*)

It is thought that ie. **nepot* might mean "not master → minor" (see *pati*).

nabh 1. class: ***nabhatê*** ("to burst")
nabhas ("sky, mist")

← ie. root **nebh*

→ lat. *nebula* with B *nebulous*

∼ nhg. *Nebel*

Compare *abhram* and *ambhas*.

nabhya ("nave")

← ie. **h*$_3$*nebh*

→ lat. B *umbilicus*

∼ e. *nave* ∼ nhg. *Nabel*

nam 1. class: ***namati*** ("to bow")
nam-as n. ("bowing, adoration")
nam-ra ("bowing down, humble"), see p. 122

← ie. root **nem*

nara ("man")
nārāyaṇa (epithet for Viṣṇu)
sūnára ("to have good men → powerful") ← ie. **h*$_1$*su-h*$_2$*nero* (**Lar_V**), (for first part see *su*).

← ie. **h*$_2$*ner* ("be strong, possessing vital powers")

→ ogr. *anēr*, *andros* with B *andrology* (*d* inserted to ease pronounciation)

∼ lat. PN *Ner-ō*

nava ("new")

← ie. **nevo*

→ gr. B *neo-liberal*, *Neolithic* (**OGR**)

∼ lat. *novus* (**LAT_V**) with B *novice*, *renovate*, *innovate*, *novelty*

∼ e. *new* ∼ nhg. *neu*

nava ("nine")

← ie. *$^*nev\underset{\circ}{n}$*

→ lat. B *November* (**LAT_*V***) ("the ninth month, with March being the first one in the Roman calendar")

∼ e. *nine* ∼ nhg. *neun*

naś 4. class: ***naśyati*** ("to reach, to attain")
ved. ***iyakṣati*** ("he wishes to reach"), desiderative (see p. 131)

← ie. *$^*h_2ne(n)k\acute{}$*

naś 4. class: ***naśyati*** ("to perish")
naṃṣ-tum, p. 105
naṣṭa PPP (**Cer*D***)

← ie. root *$^*h_2ne(n)k\acute{}$*

→ gr. B *nec-ro-logy*

∼ lat B *per-nic-ious*, *inter-nec-ine*

∼ lat B *ob-noxious*, *in-noc-ence* (for *in* see s.v. *a*)

nas 1. class: ***nasatê*** ("to unite with somebody")
as-tam PPP (**SY_*N***) ("where someone returns to safely → home, home country"), also ***astam gacchati*** ("he dies", "it (the sun) sets"), but see also *as*

← ie. root *$^*nes$* ("to return home safely")

→ ogr. PN *Nestor*

∼ nhg. *nähren* (causative: "to make return home safely → to save"), but **not** related to e. *nourish*

nas f. ("nose")

← ie. *$^*Hneh_2$ -s*

→ e. *nose* ∼ nhg. *Nase*

nas gen./dat./acc. (“us, our”)

← ie. **nas*

→ germ.

◇ e. B *paternoster* (a lift where the cabins are like the pearls on a rosary)

◇ e. *us* ∼ nhg. *uns* ← ie. **n̥s* (**IE_SY_*N***, **NHG_E**)

nah see *nadh*

nādh 1. class: ***nādhatê*** (“to be needy, to beg”)
ādhra (“needy, weak, poor”) ← ie. **n̥Hdh-ro* (**Lar_SY**)

← ie. root **neHdh*

Unrelated *nāth* has the same meaning as *nādh*.

nāman n. (“name”) (**L*o***), see pp. 228

← ie. **nomn̥*

→ ogr. *o-nomastic* with difficult word-initial *o*

∼ lat. *nōmen* (with long *ō* by “wrong” levelling with *(g)nō*, see *jñā*) with B *nominal*

∼ e. *name* ∼ nhg. *Name*

ni (“down, into”)
ni-tarām adv. (“down from, completely”)
ny-ac (“directed downward”) ← *ni-añc*, see *añc* above
ny-ag-rôdha-pāda-pa (“fig tree”) ←

◇ *nyac*

◇ + *rôdha* (“climbing, growing”, but here *dh* instead of *h*, see *rudh* and *ruh*)

◇ + *pāda* (“foot”, see *pad*)

◇ + *pa* (“drinking”, see *pā*)

nyak kṛ (“to humiliate”)
nyak bhū (“to debase oneself”)

nir/nis (“out of, away from”)
nīrôga (“healthy”) ← *nis* + *rôga* (**CpLz**), see *ruj*

nīrasa ("dried up") ← *nis + rasa* (**CpLz**), see *ṛṣ*

nī 1. class: ***nayati*** ("to lead")
sênā-nī m. ("army general")
grāma-nī m. ("village leader")
agra-nī m. ("leader")

← ie. root **neyH*

The three agent nouns ***sênā-nī*** etc. are declined along the lines of feminine *nadī* ("river") in having *y* before vowel endings. Otherwise, feminine forms are avoided as much as possible. Thus, we get the marut endings in many cases:

sênānī m.	case	sg.	dual	pl.
	nom.	*sênā-nī-s* (1)	*sênā-ny-âu* (4)	*sênā-ny-as* (4)
	voc.	*sênā-nī-s* (2)	*sênā-ny-âu* (4)	*sênā-ny-as* (4)
	acc.	*sênā-ny-am* (3)	*sênā-ny-âu* (4)	*sênā-ny-as* (3)
	instr.	*sênā-ny-ā* (5)	*sênā-nī-bhyām* (4)	*sênā-nī-bhis* (4)
	dat.	*sênā-ny-ê* (5)	*sênā-nī-bhyām* (4)	*sênā-nī-bhyas* (4)
	abl.	*sênā-ny-as* (5)	*sênā-nī-bhyām* (4)	*sênā-nī-bhyas* (4)
	gen.	*sênā-ny-as* (5)	*sênā-ny-ôs* (4)	*sênā-ny-ām* (5)
	loc.	*sênā-ny-ām* (6)	*sênā-ny-ôs* (4)	*sênā-nī-ṣu* (4)

1. Observe nom. sg. marker m./f. here in *sênā-nī-s*, in contrast with nom. sg. *nadī*.

2. The voc. sg. equals the nom. sg. *sênā-nī-s* while we have short *i* in the the voc. sg. *nadi*.

3. The acc. sg. and pl. are like *marut*, not feminine as in *nadīm* and *nadīs*.

4. Many endings are the same as for *marut* and *nadī*.

5. Feminine forms are avoided and *marut* forms are taken instead in instrum. sg. *sênā-ny-ā* versus *nady-âi* and four other forms.

6. The loc. sg. is the feminine form *sênā-ny-ām* instead of **sênā-ny-i*, perhaps becasue the ending *ny-i* is impossible in word-final position?

nīḍam ("nest") (see sad)

← ie. **nizdo*

→ e. *nest*

nīḍa (and very similarly *mīḍha*) can be explained by a series of sound laws:

ni-sd-o (*sd* z.g. of *sad*)
ni-zd-o (***sz*** before voiced stop)
→ *ni-ẓd-o* (**RUKI**)
→ *ni-ẓḍ-a* (**Cer*D***, ***aā***)
→ *nīḍ-a* (**CpL*z***)

nu 1. class: ***navatê*** ("to go")

← ie. root **neu*

→ lat. *nuere* ("to nod") with B *innuendo*

nūnam ("now")

← ie. **nu*/ **nū*

→ e. *now* ∼ nhg. *nun*

nṛt 4. class: ***nṛtyati*** ("to dance")
mi. ***naṭa*** ("dancer")

nâu f. ("ship")

← ie. **neh*$_2$*-u*

→ ogr. *nautilos* m. ("seefarer"), gr. B *nautical*, *Nautilus* (fictitious ship in novels by Jules Verne)

∼ lat. B *nav-igation* (for second part, see *aj*)

→ e. *nest*

E.6. Labial stops and nasal

E.6.1. *p*

paṅk-ti f. ("a line or set of five")

← ie. **penk* ("fist")

→ e. *fist* ∼ nhg. *Faust*

pac 1. class: ***pacati*** ("to cook, to ripen")

← ie. root $^*pek^w$

→ lat.

- ◇ *coquus*/ *cocus* ("cook") (assimilation $p...k^w \rightarrow qu...qu$, similar to *quinque*, s.v. *pañča*) with B e. *cook* ∼ nhg. *Koch*
- ◇ *prae-cox* ("premature"), B to *con-coc-t*
- ◇ B English *kitchen* ∼ German *Küche*

pañca ("five")
B ***punch*** ("drink with 5 components")

← ie. $^*penk^we$ (← *penk-*k^we ("and five"), see *pańk-ti* and *ca*)

→ gr. B *pentagon*

∼ lat. *quīnque* (assimilation $p...k^w \rightarrow c...qu$, similar to *coquus*, s.v. *pac*) with B *quint-essence*, *quintet*

∼ e. *five* (**NHG_E**) ∼ nhg. *fünf*

pañcāśat ("fifty")

← ie. $^*penk^we$-*dḱm̥t* (**CpL*dḱ***)

← *penk*^{w}*e* ("five") + *dḱm̥t* ("tenners"), see *pañča* and *daśa*.

Compare *viṃśati.*

paṇḍita ("wise, learned") ← (not ie.) $^*paṇḍā$ ← *paṇṇā* ← *prajñā* f. ("intellect"), see *jñā* (*ṇḍ* is a hypercorrection: in other cases, no here, *ṇḍ* → *ṇṇ*)

pat 1. class: ***patati*** ("to fly, to fall")
pat-tram ("bird, feather, letter")

← ie. root $^*pet$

→ lat.

- ◇ *petere* ("to strive for") with B to *compete*, to *repeat*, *appetite*, *petition*, *im-pet-us*
- ◇ *penna* ("feather") ← ie. $^*pet$-*neh*$_2$ (similarly lat. *annus*, see *at*). In German, school boys are sometimes called *Pennäler*, i.e., those who carry a *Pennal* containing the writing utensil *penna*, and the school itself is colloquially called *Penne.*

∼ e. *feather* ∼ nhg. *Feder*

pati m. (“lord, husband”)

← ie. **poti*

→ gr. B *despot* ← **dems poti* (“lord of the house”, for first part see *dam*)

∼ lat. *pot-esse* and B *potent*, *potential*

See *na-ptar*.

pad 4. class: ***pad-ya-atê*** (“to go”)
pad m. (“foot”)
pāda m. (“foot, chapter, verse”) with

◇ ***pāda-pa*** m. (“foot drinker → tree”), for second part, see *pā* (“to drink”)

◇ ***pāda-ja*** m. (“śūdra”), for second part, see *jan* (“to be born”)

◇ ***pāda-rajas*** (“dust at the feet”)

← ie. **pod/* **ped* (two dialectal variants)

→ gr. B (from o-grade) *anti-pode*, *podium* (with lat. ending), *polyp* ← ogr. *poly-pous* (for first part see *pṛ*)

∼ lat. B (from e-grade) *ped-al*, *pedi-curist* (for second part see *sicher*, p. 71), *pede-strian*, *centi-pede* (for first part see *śatám*), *ex-ped-ition*, *im-ped-iment*

∼ e. *foot* ∼ nhg. *Fuß*

panth m. (“path”) with declension

panth m.	case	sg.	dual	pl.
	nom.	***panth-ās*** (2)	***panth-ān-âu*** (1)	***panth-ān-as*** (1)
	voc.	***panth-ās*** (2)	***panth-ān-âu*** (1)	***panth-ān-as*** (1)
	acc.	***panth-ān-am*** (1)	***panth-ān-âu*** (1)	*path-as* (3)
	instr.	*path-ā* (3)	*path-i-bhyām* (4)	*path-i-bhis* (4)
	dat.	*path-ê* (3)	*path-i-bhyām* (4)	*path-i-bhyas* (4)
	abl.	*path-as* (3)	*path-i-bhyām* (4)	*path-i-bhyas* (4)
	gen.	*path-as* (3)	*path-ôs* (3)	*path-ām* (3)
	loc.	*path-i* (3)	*path-ôs* (3)	*path-i-su* (4)

1. The strong forms with oi.

$$\bar{a} \quad + \quad n \quad + \quad \text{vowel ending}$$

go back to ie.

$$o \quad + \quad n \quad + \quad \text{vowel ending}$$

according to Brugmann's law **Lo**. They seem to be formed on nouns like *rājan*.

2. Nom. and voc. sg. *panth-ās* is difficult.

3. By **SY_N**, one obtains the weak forms before vowel-initial endings like instr. sg. *path-ā*.

4. *path-i-bhis* may be explained in lines similar to *sthita* where the laryngeal is responsible for both *i* and the aspiration. Originally, one might have a form like *pat-i-bhis*, but levelling would then provide for the aspiration in these forms, too. A more plausible explanation may be that *path-i-bhis* is formed by analogy with other forms like *mun-i-bhis*. In fact, without the "thematic vowel" *i,* the resulting *pad-bhis* would be confusing.

← ie. **ponth*$_2$ (**Lar_CH**)

→ lat. B *ponti-fex* (for second part see p. 322)

not related are e. *path* ∼ nhg. *Pfad*

parā ("away, off"), see *palāyatê* s.v. *i*

pari ("around")

← ie. **peri*

→ gr. B *perimeter*, *periphery* (see *bhṛ*)

∼ lat. *per* as in *pay-per-view*, *per se*

∼ nhg. *ver* as in *ver-laufen* ("to lose one's way")

pard 1. class: ***pardatê*** ("to fart")

← ie. **perd*

→ e. *fart* ∼ nhg. *furzen*

palāy 10. class: ***palāyatê***("to flee"), see *i* and *parā*

paśu m. ("cattle")

← ie. **pekú*

→ gr. B *perimeter*, *periphery* (see *bhṛ*)

∼ lat.

◇ *pecus* (“cattle”) with B e. *fee* ∼ nhg. *Vieh* (“cattle”)

◇ *pecūnia* (“wealth”) with B *pecuniary*

◇ *pecūlium* (“money in possession”) with B *peculiar*

paś-ya-ti with oi. root *dṛś* (see there)

← ie. root **(s)peḱ* with *s*-mobile (compare *schlecken* on p. E.7.3)

→ gr. B *scope*, *skepticism*(where *p* and *ḱ* are interchanged)

∼ lat. B *spectrum*, *a-spect*, *ex-spect*

∼ e. to *spy* ∼ nhg. *spähen* (“to peer”)

pā 2. class: ***pā-ti*** (“to protect”)

← ie. root **peh*$_2$

→ lat. *pāstor* (“shepherd”) with B *pastor*

pā 1. class: ***pibati*** (“to drink”)

pā (“to drink”)		
present tense	*pi-b-a-ti* (1)	*pi-b-a-n-ti* (1)
infinitive	*pā-tum* (2)	
PPP	*pī-ta* (3)	
future	*pā-sy-a-ti* (2)	*pā-sy-a-n-ti* (2)
imperfect	*a-pi-b-a-t* (1)	*a-pi-b-a-n* (1)
perfect	*pa-p-âu* (4)	*pa-p-us* (5)
root aorist	*a-pā-t*	*a-p-us* (5)
desiderative	*pi-pā-s-a-ti*	*pi-pā-s-u*

1. *pi-b-a-ti* is a reduplicated form, somewhat similar to *ti-ṣṭh-a-ti*. From the ie. root **peh*$_3$, one obtains

**pi-ph*$_3$*-eti* (reduplication with *i* and zero grade)

→ **pi-b-eti* (**Lar_*CH*:** h_3 makes *p* voiced)

→ *pi-b-ati*

Similarly, we have the imperfect *a-pi-b-a-t*.

2. The long-$\bar{a}$ forms *pā-tum* and *pā-sy-a-ti* are both regularly full-grade from the same ie. root $^*peh_3 \rightarrow p\bar{a}$.

3. *pī-ta* cannot simply be explained from the ie. root $^*peh_3$. Instead, one sometimes assumes the ie. root $^*peh_3i$. However, the zero grade $^*ph_3i$ could not have led to long $\bar{\imath}$. One way out may be metathesis $^*pih_3$ and then **Lar_V**. The same explanation may hold for the passive *pī-y-atê*.

4. See section C.7, pp. 188.

5. Perfect plural *pa-p-us* and root aorist plural *a-p-us* are similar. While the perfect has reduplication, the root aorist does not. Both have ending *us*.

← ie. root $^*peh_3/^*peh_3i$

→ gr. B *symposium* (with lat. ending)

∼ lat.

◇ B (magic) *potion*

◇ B in German *Pokal* ("cup, trophy")

pāda ("foot, chapter, verse"), see *pad*

pāśa m. ("snare, noose")

← ie. $^*peh_2\acute{k}$

→ lat. *pax* ("peace") and B *pact*∼

∼ nhg. *fügen* ("to join"), *Fuge* ("joint, seam"), *be-fug-t* ("authorised")

pika m. ("Indian cuckoo")

← ie. $^*spiko$

→ nhg. *Specht* ("woodpecker")

pi-tar m. ("father")
pi-trya ("paternal, ancestral")
pi-tṛvya ("father's brother")

← ie. $^*ph_2\overset{\angle}{t}er$

→ gr. *patér* with B *patriot*, *patriarch* (clear indication of h_2, see subsection B.1.4)

∼ lat. B *patron*, *patrician*, German *Patrone* ("cartridge")

∼ e. *father* ∼ nhg. *Vater* (**VER**)

Connection with *pā* ("to protect") unclear.

piṣ 7. class: ***pi-na-ṣ-ti*** ("to grind, to cruch")

← ie. root **peis*/ **pei(n)s*

→ lat. *pī-lum* ("javelin, pike")

piś 6. class: ***piṃś-a-ti*** ("to adorn")

← ie. root **pei(n)ḱ*

→ lat. B *pig-ment*, *pic-ture*

pīḍ 1. class: ***pīḍatê*** ("to pinch, to oppress")
from oi. root *piṣ* ← ie. **pis* with *d*-extension

pis-d-ati
→ *pizd-ati* (***sz*** before voiced stop)
→ *piẓd-ati* (**RUKI**)
→ *pi-ẓḍ-ati* (**Cer*D***)
→ *pīḍ-ati* (**CpL*z***)

Compare *sīd-ati* (p. 80) and *nīḍa* (dictionary).

pī-van ("swelling, fat") (z.g.)
pay-as n. ("milk") (f.g.)

← ie. root **peiH*

putra ("son") (***rl***), uncertain

← ie. **pu-tló*

→ gr. B *pe-dagogue*

∼ lat. B *puerile*

∼ e. *foal* ∼ nhg. *Fohlen*

pumant ("male, man")

← ie. difficult

→ lat. B *puberty*

puṣ 1. class ***poṣ-ā-ti*** ("to thrive, to florish")

← ie. **peus*

→ lat. B *pustule*

pū 9. class ***pu-nā-ti*** ("to clean")

← ie. root **peuH*

→ lat. *pūrus* with B pure

pūrva ("front, former")

← ie. **pr̥̊vo*/**pr̥̊mo*

→ e. *former*

pṛ 3. class: ***pi-par-ti*** ("ferry over")
gô-pāla ("herdsman, cow protector") (***rl***) (uncertain)
pāra ("further shore or opposite bank of a river, the utmost reach or extent")

← ie. root **per*

→ gr. B *pore* and *porous* (both via Latin), place name *Bos-porus* with the following story:

The Bos-porus is the strait near Istanbul that separates Europe from Asia. In Greek mythology, the father of gods Zeus lusted after beautiful human females, and also after Io. His sister and spouse Hera observed his erotic escapades with great jealousy. In order to hide his latest conquest, Zeus transformed Io into a cow. Hera pretended to admire this beautiful cow and made Zeus give her the cow as a present. The poor cow tried to escape Hera's torments. During the flight, Io crossed the strait at Istanbul which has carried the name Bosporus ("ford of the cow") ever since.

∼ lat. B to *deport*, to *export*, to *report*, *port*,

∼ germ.

◇ without dental extension:

- nhg. *fahren*/*Fuhre*/*führen*
- e. *fare*/*farewell*

◇ with dental extension:

- e. *ford* ∼ nhg. *Furt*
- e. *Oxford* ∼ nhg. *Ochsenfurt*

pṛt ("to battle")
pṛt f. ("battle, contest")

← ie. root **per-t* ("to press")

→ lat. B to *express*, to *compress*, *impression*

pṛthu ("wide, large")
pṛthvī/ ***pṛthivī*** ("earth, land"), also (very similar to *urvī*, see *uru*) in

◇ ***pṛthvī-pati*** m. ("king")

◇ ***pṛthvī-talam*** ("earth, ground")

← ie. **pl̥th$_2$v-ih$_2$* (compare *sthita* s.v. *sthā*)

→ gr. (via lat.) B *plate*

plu 1. class: ***plav-a-tê*** ("to swim, to float")
plava ("floating, boat") (***V*** + ***hV***)
with ***rl***:

◇ ***pr̥̄*** 9. class: ***pṛṇāti*** ("to fill, to fulfill")

◇ ***pūrṇa*** PPP (p. C.25)← ie. **pr̥h$_1$-no* (**Lar_SY**)

◇ ***pur*** f. ("plentitude") with inst. pl. **pūrbhis**

◇ ***puru*** ("much, plenty") (**Lar_*CH***)← ie. **plh$_1$-v*

← ie. root **pelh$_1$*/**plh$_1$ev*

→ gr. B *polyphony*, *polygamy*, *polyp* ← ogr. *poly-pous* (for second part see *pad*)

∼ lat.

- ◇ *plēnus* ("full") with B *plenum*, *plenary*, *plenitude*, *plenty*, *complete*, *compliment*, *complement*, *manipulation* with first part lat. *manus* ("hand"), i.e., "a handful of substances → artifice"
- ◇ *plēbs* ("people") with B *plebiscite*
- ◇ B *pluv-ial* ("rainy")
- ◇ B *plus*

∼ germ.

- ◇ e. *full* ∼ nhg. *voll*
- ◇ e. *folk*/*folklore* ∼ nhg. *Volk*

See *klôman*.

pra ("before, in front of"), regularly without **L*o***
pra-tara (comparative: "an earlier one") and adv. **prataram** ("in the future")
pra-tama (superlative: "the earliest") and adv. **pratamām** ("especially, preferably"), see *-tama*
prāc ("directed forward, eastern"), see *añc*
prāk ("in front, in the east")
prātar ("early in the morning")
pra-bhu m. ("lord, master"), see p. 137

← ie. **pro*

→ gr. B *pro-biotic*, *prophecy* (see *bhā*), *prophylactic*

∼ lat. B such as *proverb*, *protest*, *product*

∼ nhg. *ver* as in *ver-laufen*

pracch 6. class: ***pṛcchati*** ("to ask")
On the one hand:

◇ full grade nouns ***praś-na*** ("question") and ***praś-tar*** ("questioner")

◇ zero-grade PPP ***pṛṣ-ṭa***

← ie. full grade **preḱ* ("to dig, to nuzzle") and ie. **porko* ("nuzzler → pig")

→ lat. *porcus* ("pig") and diminutive *porcellus* ("farrow, piglet") whence *porcelain* (i.e., "china")

On the other hand, with *sḱ*-suffix: zero-grade PPP ***pṛcchati*** (**CCl**, **SIB**)

← ie. zero grade **pr̥̊ḱ-sḱ*

→ nhg. *er-forsch-en* (“to research”) (**IE_SY_*L***)

Besides, one has full grade ***praccha*̄** (“inquiry”) ← ie. full grade **praḱ-sḱ-*. Compare *mūrchā*.

prati (“against”)
pratīpa (“against the stream, going in opposite direction → adverse, displeasing”) ← *prati* + zero-grade h_2p from *ap* (**Lar_*V***).
prati-kāra, ***pratī-kāra*** (“vengence, retaliation”). Could *ī* be due to words like *pratīpa*?

← ie. *preti*

→ lat. *pretium* (“reward, prize”) with B *precious*

praś-na m. (“basket-work, a plaited basket”)

← ie. root **pleḱ*

→ lat. B *com-plex*, *im-plic-ation*

∼ nhg. *flechten* (“to weave, to plait”)

See also s.v. *pracch*

prāc (“directed forward, eastern”) see *pra* and *añc*

prī 9. class: ***prīṇāti*** (“to please, to love”)
priya (“beloved, dear”) (***V*+*hV***)

← ie. root **preiH*

→ lat. B *pro-priety*

∼ germ.

- ◇ e. *friend* ∼ nhg. *Freund*
- ◇ e. *free* ∼ nhg. *frei*
- ◇ e. *Friday* ∼ nhg. *Freitag* from the goddess *Frija* ← Old Icelandic *Frigg* (“the loved one”)
- ◇ nhg. *freien* (“to court, to marry”), *Friede* (“peace” ← “protection, friendship”)

plīhan m. (“spleen”)

← ie. **splǵh-en*/ **splǵh-ēn*

→ gr. B *spleen* (in German: "eccentricity")

pluṣi m. ("insect")

← ie. **plus*

→ e. *flea* ∼ nhg. *Floh*

E.6.2. *ph*

phena ("foam") (***sP(h)***)

← ie. **spoi*

→ lat. B *spume*

∼ e. *foam*

E.6.3. *b*

bandh 9. class: ***badh-nā-ti*** ("to bind")
bandhu m. ("relative")

bandh ("to bind")		
present tense	*badh-nā-ti* (2)	*badh-n-an-ti*
infinitive	*bad-dhum* (1)	
PPP	*bad-dha* (1)	
future	*bhant-sy-a-ti* (3)	*bhant-sy-a-n-ti* (3)
imperfect	*a-badh-nā-t*	*a-badh-n-an*
perfect	*ba-bandh-a* (5)	*ba-bandh-us* (5)
s-aorist	*a-bhānt-sī-t* (3)	*a-bhānt-s-us* (3)
desiderative	*bi-bhant-s-a-ti* (3, 4)	*bi-bhant-s-u* (3, 4)

1. *bandh* goes back to ie. **bhendh*. In this verb, the nasal belongs to the root (see the e. cognate *bind*). However, the speakers seem to have been confused about this. Thus, the *n* is missing even in full-grade forms such as the infinitive *bad-dhum*. By **SY_*N***, the PPP shows correct zero grade. As in *bud-dha* from *budh* ("to know"), we witness the effect of both aspiration laws **DA** and **ASh**.

2. *badh-nā-ti* is modeled on verbs like *pu-nā-ti* ("he cleans"), see pp. 87.

3. Similar to

   ◇ *bhôt-sy-a-ti* ← ie. **bheudh-s* from *budh* (“to know”) or

   ◇ *dhôk-ṣy-a-ti* ← ie. **dheugh-s* from *duh* (“to milk”)

   bhant-sy-a-ti ← ie. **bhendh-s* is regular in showing **ASh** (but failed) and **BA** (*s* is voiceless). Since *t-sy* is not aspirated, there is no need for **DA.**

4. The desiderative forms exhibit **DA**, not in the main syllable but in the reduplication syllable.

5. The perfect form *ba-bandh-a* is regularly in full grade. However, the pl. *ba-bandh-us* is also in full grade, but should be in zero grade (pp. 188).

← ie. root **bhendh*

→ e. *bind* ∼ nhg. *binden*

babhru (“brown, tawny”) (**DA**)

← ie. **bhe-bhr-u*/ **bhe-bhr-o*

→ germ.

◇ also reduplicated: e. *beaver* ∼ nhg. *Biber*

◇ not reduplicated: e. *brown* ∼ nhg. *braun*

bar-bar-a (“any one not a Sanskrit speaker, not an Āryan”)
bal-bal-ā-kṛ 8. class ***bal-bal-ā-kṛ*** (“to stutter, to stammer”)

← ie. **bl-bl* (onomatopoetic)

→ gr. B/ PN (via Latin) *barbaric* / *Bar-bar-a*

bala m (“strength, power”)
bāla (“strong one (to be) → boy”)

← ie. **belo*

→ lat. B *de-bil-ity*

bah-u (“much, many”), z.g.

← ie. **bhenǵh* (“dense”)

→ gr. *pachus* ("thick, plumb") with B *pachy-cephalo-saurus* ("thick headed dinosaur") and *pachy-dermia* ("thickness of tissue")

bāhu m. ("arm") (**DA**, **PPal**)

← ie. **bhāǵhú*

→ nhg. *Bug* ("bow, front part of a ship")

Note the strange analogy

bahu ("much, many") adj.	giving rise to body part:	*bāhu* m. ("arm")
just as		
uru ("wide") adj.	giving rise to body part:	*ūru* m. ("thigh")

budh 1. class: ***bôdhati***("to know")

budh ("to know")		
present tense	*bôdh-a-ti* (1)	*bôdh-a-n-ti* (1)
infinitive	*bôdh-i-tum* (2)	
PPP	*bud-dha* (3)	
future	*bhôt-sy-a-ti* (4)	*bhôt-sy-a-n-ti* (4)
imperfect	*a-bôdh-a-t* (1)	*a-bôdh-a-n* (1)
perfect	*bu-bhud-ê* (5)	*bu-bhud-irê* (5)
iṣ-aorist	*a-bôdh-ī-t* (6)	*a-bôdh-īṣ-us* (6)
desiderative	*bu-budh-i-ṣ-a-ti* (7)	*bu-budh-i-ṣ-u* (7)

1. The origin is ie. **bheudh*. The full grade yields oi. *ô* (**DIPH**) and Grassmann's **DA** *bôdh-a-ti*.

2. The infinitive is regularly in full grade. The *i* goes not originate from a laryngeal, but has been borrowed from roots like *bhū* ("to be"). There, ie. **bheuH* + infinitive ending *tum* yields *bhav-i-tum* by **Lar_*V***. As in *pat-i-tum* and other roots, *i-tum* instead of *tum* has become productive.

3. Regularly, by **ASh** and **DA**, the zero grade PPP *bud-dha* results. Compare *dug-dha* ← ie. **dheugh-to* from *duh* ("to milk").

4. With respect to the future form *bhôt-sy-a-ti*, observe:
   - ◇ Failed **ASh** together with **BA** produces *t* from *dh*.
   - ◇ Similar to *dhôk-ṣy-a-ti* ← ie. **dheugh-s* (oi. *duh*, "to milk"), the original initial *bh* emerges (no **DA** possible).

5. The perfect forms are ātmanêpada and hence weak (pp. 188).

6. *a-bôdh-ī-t* is an *iṣ*-aorist which can be clearly seen from the pl. *a-bôdh-iṣ-us*. For "thematic" *ī* see section C.8, pp. 196.

7. Desiderative *bu-budh-iṣ-a-ti* again shows *i* taken by analogy from sêṭ roots.

← ie. root **bheudh*

→ lat. *fidēs*, *fideī* ("trust, credit, belief") also in "*defensor fideī*" ("defender of faith"), a title for the English kings, lat. B *fidelity* and in English *faith*

∼ e. *bid* ∼ nhg. *bieten* ("to bid, to offer")

budh-nam ("depth, ground") (**DA**)

← ie. **bhudh-no*

→ lat. *fundament* (**LAT_*f***) and *pro-found*, where *n* and *d* are interchanged (as in lat. *unda*, see *udan*)

∼ e. *bottom* ∼ nhg. *Boden* ("ground") where both e. *tt* and nhg. *d* are unclear

Perhaps, *budhnam* is related to *budh* (semantically, compare German "ergründen")

bṛh 6. class: ***bṛh-a-ti*** ("to grow, to increase") (**DA**)
bṛh-as-pati m. ("lord of the prayer") gen. sg. of a root noun ***bṛh***, see *vanam*
bṛh-ant pres.P ("thick, large, abundant")
pari-bṛḍha ("firm, dense") PPP (see similarly compare p. 116)
brah-man n. ("the absolute")/ ***brah-man*** m. ("the creator god") (from n.at. *barh-man* similar to *draṣṭum* by a sound law similar to **MET_*rSP***?)

← ie. root **bherh*

→ lat. B *for-titude* (**LAT_*f***)

E.6.4. *bh*

bhaj 1. class: ***bhajati*** ("to divide, to allot")
bhaga ("wealth, happiness")
bhaginī ("sister")
bhakti f. ("allotment, division, love, devotion")
bhāga ("part")
bhikṣ 1. class: ***bhikṣ-a-tê*** ("to wish to share, to beg"), originally a desiderative (p. 130)
bhikṣu ("begging")

← ie. root **bheg*

→ gr. B *bacteriophage*

∼ nhg. *Backe* (“eater → cheek”)

bhan 1. class: ***bhanati*** (“to speak”)

← ie. root **bheh*$_2$/**bhen*

→ gr. B (**OGR**)

- ◇ *blas-phemy* where the origin of the first part is dubious, but has lead to French *blâmer,* German *blamieren* (“to disgrace oneself”)
- ◇ *eu-phemism* where ogr. *eu* ∼ oi. *su*
- ◇ *a-phasia* with alpha privativum (p. 66)
- ◇ *prophet*
- ◇ *phone*, *phonetics*, *phoneme*

∼ lat. B (**LAT_*f***)

- ◇ *fame*, *famous*, *in-famous* where lat. *in* ∼ oi. *a* ∼ e. *un*
- ◇ *fate* (“spoken by gods → destiny”), *fatal* and French and hence English *fairy* and German *Fee* (“fairy”) and *gefeit* (“immune”)
- ◇ *fable*, *fabulous*
- ◇ *profession*, *professor*
- ◇ *in-fant*, *in-fantile* (“who does not speak → baby”, semantically compare *puerile* at oi. *putra*), *infantryman* (“child → boy → foot soldier”)

∼ germ. **ben*

→ e. ban ∼ nhg. *Bann*

∼ French *banal*

∼ Italian *bandito*

bhañj 7. class: ***bhanakti*** (“to break”)
bhaṅga (“breaking, defeat”)
bhagna PPP

bhand 1. class: ***bhandatê*** (“to shine, to gleam”)
bhad-ra (“happy, lucky”), zero grade by **SY_*N***, for other examples see pp. 121

bhargas n. (“radiance, lustre”)

← ie. **bhelg*

→ lat. B *fulminant* (**LAT_*f***)

∼ nhg. *Blech* ("metal sheet"), nhg. *blechen* ("to fork out ← to make a shining coin visible")

bhā 2. class: ***bhāti*** ("to shine")
bhās 1. class: ***bhāsati*** ("to shine")

← ie. root **bheH(s)*

→ gr. B *phenomenon*, *photo*, *phos-phor* ("which carries light", for second part see *bhṛ*)

∼ nhg. *bohnern* ("to make shiny → to polish (the floor)")

bhid 7. class: ***bhinatti*** ("to split")
bhin-na PPP (p. 111)

← ie. root **bheid*

→ lat. B *fissure*, *fission* (both by **LAT_*f*** and **LAT_*DD***)

∼ germ.

◇ e. *bite* ∼ nhg. *Biss*

◇ e. *bitter* ∼ nhg. *bitter* (p. 73)

bhī 3. class: ***bi-bhê-ti*** ("to be afraid")
bhay-a-m ("fear, danger")
bi-bhī-vans/ ***bi-bhī-vas*** ("one who is afraid") pf.P

← ie. root **bheih*$_2$

→ nhg. reduplicative *be-ben* ("to tremble"), *bi-bbern* ("to jitter")

bhuj 7. class: ***bhu-na-k-ti***/ *bhuṅkte* ("to enjoy, to consume")
bhoga ("enjoyment, suffering")
bhogin ("enjoying, king")

← ie. root **bheu(n)g*

→ lat. B *fung-ible* (assets) from lat. *fungi, fungor* ("to enjoy, to suffer")

bhuj 6. class: ***bhuj-a-ti***/ *bhuṅkte* ("to bend, to make crooked")
bhoga ("expanded hood of a snake, snake")
bhogin ("snake")

← ie. root **bheug*

→ gr. B *phug-oid* (a specific aircraft flight motion) seemingly from *phugē* ("escape"), but here employed in the sense of airplane (!) flight

∼ lat. B *fug-itive* (**LAT_*f***)

∼ germ. (compare s.v. *aratni*)

◇ e. *bow* ∼ nhg. *biegen*

◇ e. el*bow* ∼ nhg. Ellen*bogen*

bhū 1. class: ***bhavati*** ("to be")
punar-bhū ("remarried widow")
bhū ("earth")
pra-bhu, m. ("lord, master"), see p. C.4.9

bhū ("to be")		
present tense	*bhav-a-ti* (1)	*bhav-a-n-ti* (1)
infinitive	*bhav-i-tum* (2)	
PPP	*bhū-ta* (3)	
future	*bhav-i-ṣy-a-ti* (2)	*bhav-i-ṣy-a-ti* (2)
imperfect	*a-bhav-a-t* (1)	*a-bhav-a-n* (1)
perfect	*ba-bhūv-a* (5)	
root aorist	*a-bhū-t* (3)	
desiderative	*bu-bhū-ṣ-a-ti* (3, 4)	

1. From ie. **bheuH*, *bhav-a-ti* is regular full grade (see **Lar_*V***).

2. The infinitive *bhav-i-tum* (and similarly the future forms) is regular full grade where *i* originates from the laryngeal (**Lar_*V***).

3. The laryngeal also shows in zero grade PPP *bud-dha*, the desiderative, and the root aorist.

4. **DA**

5. *ba-bhūv-a* is irregular. The "correct" form is **bu-bhav-a* ← ie. **bhu-bhouH-e*, with reduplication vowel *u* and with full grade. Note that **Lo** does not apply because the syllable is not open because of the laryngeal.

← ie. root **bheuH*

→ gr. B *physics*

∼ lat.

- ◇ B *future* (**LAT_f**), *super-b*, *fiat* money
- ◇ *probus* ("excellent, good") ∼ oi. *prabhu* (see p. 137)

∼ germ.

- ◇ e. *be* ∼ nhg. (ich) *bin*, (du) *bist*
- ◇ nhg. *bauen* ("to build), Bauer ("farmer)

See *abhva*.

bhūrja ("birch") (**PPal**)

← ie. **bherǵH*

→ e. *birch* ∼ nhg. *Birke*

bhūṣ 1. class: ***bhūṣati*** ("to strive after")

← ie. root **bhh$_2$ev*

→ lat. B *favour* (**LAT_f**)

bhṛ 1. class: ***bharati***/ 3. class: ***bibharti*** ("to carry")

← ie. root **bher*

→ gr. B

- ◇ *peri-phery* where first part is cognate with oi. *pari*
- ◇ *meta-phor*
- ◇ PN *Christo-pher* (lat. version *Christophorus*)
- ◇ *phos-phor* ("which carries light", for first part see *bhā*)
- ◇ *eu-phoric* where ogr. *eu* ∼ oi. *su*

∼ lat.

- ◇ B *pre-fer*, *con-fer*, *dif-fer*, *trans-fer*, *fer-tile*, *Luci-fer* ("carrier of light" → PN of angel, see *ruc*)
- ◇ B *for-tunate*

∼ germ.

◇ e. *bear*

◇ e. *bier* ~ nhg. *Bahre* ("stretcher")

◇ nhg. *ge-bären* ("to give birth"), *Zu-ber* ("tub"), *Ge-bär-de* ("gesture")

bhṛṣ-ṭi f. ("point, edge")

← ie. *bhers*

→ e. to *burst* ~ nhg. *bersten*

bhrātar m. ("brother")

← ie. **bhráter/* **bhr-eh_2-ter* (see ie. **bher* s.v. *bhṛ*)

→ lat. B to *fraternize*, *fraternity* (**LAT_*f***)

~ e. *brother* ~ nhg. *Bruder*

~ English Gypsy *pal* with B *pal*

Ie. **bhr-eh_2* might mean "group of males born from the same mother" and ie. **bhr-eh_2-ter* "belonging to ie. **bhr-eh_2*". Compare oi. *sodara* s.v. *udara.*

E.6.5. *m*

majj 6. class: ***majjati*** ("to sink into")

← ie. root **mesg*

→ lat. B to *merge*

madhu n. ("sweet drink, honey")

← ie. **medhu*

→ gr. B *methane*

~ e. *mead* ~ nhg. *Met*

madhya ("middle")

← ie. **medhyo*

→ gr. B *Mesopotamia* (“between two rivers”)

∼ lat. B *medium*, *media*, *medi-ocre* (second part s.v. *aśri*)

∼ e. *mid*, *middle* ∼ nhg. *Mitte* (but **not**: *mit*)

man 4. class: ***manyatê*** (“to think”)
man-as n. (“mind”)
mati f. (“thought, mind”) (**SY_*N***)

← ie. root **men*

→ lat.

◇ *mēns* (compare **CpL*s***), *mentis* with B *ment-al* and *de-ment-ia*

◇ (reduplicated) *me-min-ī* (“to remember”) with B *me-mory*, *com-me-moration*

◇ B (causative) *de-mon-stration*, *mon-strance*

∼ e. *mind*
See *amati*, *amnas*, *mnā*

mahi (“great”), used in Vedic as an adj. in nom. and acc. sing. n.
mahant (“great”), pp. 219

← ie. **meǵh*$_2$ (see p. 52)

→ gr. B *megafon*, *megawatt*, *megabyte* and, in German, *megageil* (youth slang: “fantastic altogether”)

∼ lat.

◇ B *magnitude*, *magnate*, *maj-esty*

◇ *magister* with B *master*

∼ e. *much*

Perhaps, ved. *mak-ṣu* (“much, many → quick, soon”) is an old loc. pl. building on this root. Then, lat. *mox* (“soon”) may be related.

mā 3. class: ***mimāti*** (“to measure”)

← ie. root **meh*$_1$

→ gr. B *me-ter* (via French *mètre*), *geometry*

∼ lat. *t*-extension finally the B *meas-ure*, *di-mens-ion*, *im-mense* (“unmeasurable”, see p. 66)

∼ nhg. *l-extension ma-l* (“from time to time”), *Ma-l* (“moment”) ← ohg. *māl* ← ie. *meh_1-lo*

See ***māṣ***.

māṃsa m. (“meat”)

← ie. *$meh_1(n)s$*

→ lat. B *member*

māṣ m. (“moon, month”)

← ie. *$meh_1(n)s$*

→ lat. *mēnsis* (“month”) ← ie. *meh_1-n-s* with B *menstruation*, *se-mester* (for first part, see *ṣaṭ*), *tri-mester* (for first part, see *trayas*)

∼ Germanic languages use related, but different forms for the two meanings:

◇ e. *moon* ∼ nhg. *Mond*

◇ e. *month* ∼ nhg. *Monat*

mātar f. (“mother”)

← *ie. *$me\text{-}h_2\overset{\angle}{te}r$*

→ lat. B *maternity*

∼ e. *mother* ∼ nhg. *Mutter*

As in *pitar*, the ie. accent follows the *t* so that **VER** applies.

mitram “contract → friendship → friend”
On neuter (!) *mitram* see Thieme [1957].

mith 1. class: ***mêthati*** (“to meet, to quarrel”)

← ie. root *$meith_2$*

→ lat. *mit-tere* (“to release, to send”) with B to *e-mit*, *e-mis-sion* (**LAT_*DD***) , to *per-mit*, to *trans-mit*, *mis-sile*

mil 6. class: ***milati*** ("to unite, to happen")
mêl-a ("assembly, association")
mêl-aka ("assembly, association")
mêl-anam ("assembly, association")
mêl-ā ("assembly, association")

← ie. root **meil*

miś ("to mix")
miś-ra ("mixing, diverse")
miś-la ("mixing, diverse") (***rl***)
mi-mik-ṣu ("desiring for mixing")
On the one hand, the above words

← ie. root **meiḱ*

On the other hand, with *sḱ*-suffix, *micch* as in pres.P *micchamāna*

← ie. zero grade **miḱ-sḱ* (**SIB**)

→ lat. *misc-ere* ("to mix, to blend") with B to *mix*, *mixture*, *pro-misc-uity*, B in German *mischen* ("to mix")

→ fr. *mélange* ("mixture")

Compare *pracchā* (s.v. *pracch*). The oi. root *mikṣ* as in causative *mêkṣayati* is difficult because it contradicts **SIB**.

mih 1. class: ***mêhati*** ("to urinate") (**PPal**)
mih f. ("mist, haze, fog")
mêgha ("cloud")

← ie. root **meigʰ*

Compare *mīḍha*. Semantically, compare *vār*.

mī 9. class: ***mi-nā-ti*** ("to lessen, to diminish")

← ie. root **meih*$_1$

→ lat. B *mi-nus*, *mi-nute*, *di-mi-nish*, *mi-nister*

mīḍham ("wage, price")

← ie. **mizdho*

→ e. *meed* ∼ nhg. *Miete* ("rent")

mīḍha (and very similarly *nīḍa*) can be explained by a series of sound laws:

ie. **mizdho*
→ *miẓdho* (**RUKI**)
→ *miẓḍha* (**Cer*D***, ***aā***)
→ *mīḍha* (**CpL*z***)

From the sound laws, *mīḍha* might be a PPP of *mih* ("to urinate") (similar to *līḍha*, p. 115). Perhaps, rain as a price for sacrifice?

mīv 1. class: ***mīvati*** ("to move")
mūta in ***kāma-mūta*** (from n.at. *myūta*)

← ie. root **myevh*$_1$

→ lat. B to *move*, *move*ment, *mobility*

muc 6. class: ***muñcati*** ("to set free, to let go")

← ie. root **mu(n)k*

→ lat. B (nasal) *mucus*

muni m. ("holy man")
mūka ("dumb, silent")

← ie. **mu*/ **mū*

→ lat. B *mute*

Perhaps a person who cannot say anything but *mu* or *mū*?

mūṣa ("mouse")

← ie. **muHs*

→ e. *mouse* ∼ nhg. *Maus*

mṛ 1. class: ***marati***/ 4. class: ***mri-ya-tê*** ("to die") (p. 21)

← ie. root **mer*

→ gr. B *a-mbr-osia* with ogr. alpha privativum *a* (see p. 66). *b* has been introduced in order to facilitate pronounciation.

∼ lat. B *mor-tal*, *mor-bid*, to *amortize* (“to make dead → to redeem a loan”)

∼ e. *murder* ∼ nhg. *Mord*

See *mār-ay-a-ti* on p. 33. See *mṝ*.

mṛd 1. class: ***mardati***/ 9. class: ***mṛdnāti*** (“to press, to destroy”) (***rl***)
mṛd f. (“mud, clay”)
mṛdu (“soft, mild”)
mṛad-īyans (comparative, “softer”)
mṛad-iṣṭha (superlative, “softest”)

← ie. root **meld*

→ lat. B in German
◇ *a-Moll* (“A minor”)
◇ *mollig* (“chubby”)

mṝ 9. class: ***mṛṇāti*** (“to bruise, to smash”)
On the one hand, ***mṛṇāti*** ← ie. **mr̥-ne-h₂-ti* (**Lar_V**)

← ie. root **mer-h₂* (*h₂*-extension of **mer* s.v. *mṛ*)

→ lat.
◇ *mora* (“delay, lapse of time”), see law of morae on p. 54
◇ *mor-tārium* (“bowl, mortar”) with e. B *mor-tar*, nhg. B *Mör-ser* (“mortar”) and *Mör-tel* (“mortar, grout”)

∼ nhg. *mürbe*, *morsch*

On the other hand, ***mūrchā*** f. (“delusion, fainting”), with *sḱ*-suffix

← ie. zero grade **mr̥h₂-sḱ* (**Lar_SY**, **SIB**)

Compare *pracchā* (s.v. *pracch*).

me enclitic for pers. pron. 1. pers. sg. both gen. (for non-enclitic *mama*) and dat. (for non-enclitic *mahyam*)

← ie. **moi*

→ ogr. *moi*

mnā 2. class: ***mnāti*** (“to mention”) ← ie. **mn-eh₂*
Consequential of *man*, see pp. 79 and 67

E.7. Half vowels

E.7.1. *y*

yaj 1. class: ***yajati*** ("to sacrifice")
iṣ-ṭa PPP
iṣ-ṭi f. ("offering")

← ie. root **Hyeǵ*

→ gr. B *hag-iography*

yam 1. class: ***yacchati*** ("to hold, to restrain")
On the one hand:

◇ full grade nouns ***yam-a*** ("restraining")

◇ zero-grade PPP ***ya-ta***

← ie. full grade **Hyem*

On the other hand, ***yacchati*** with *sḱ*-suffix:

← ie. zero grade **ym̥-sḱ* (**SIB**)

Compare *iṣ*, *icchati* ("to wish"), *gam, gacchati* ("to go"), and *pracch*, *pṛcchati* ("to ask").

yama/ ***yamala*** ("a twin, one of a pair or couple")

← ie. root **yemH*

→ lat. B *geminate*, with analogical *g* from *genus* (s.v. *jan*)

yā 2. class: **yā-ti** ("to go"), consequential of *i*, see pp. 79

← ie. **h*$_1$*i-eh*$_2$

→ lat. *iānus* ("doorway", name of a god) with B *janu-ary*

∼ nir. place name "Baile Átha Cliath" ("town (*baile*) of the ford (*āth*) of lattice (*cliath*): Dublin)

yu 1. class: ***yu-cchati-ti***/ 3. class: ***yu-yô-ti*** ("to keep apart, to separate")
On the one hand, full grade nouns:

◇ ***yava*** ("barley")

◇ ***ava-yava*** ("part"), see *ava*

← ie. root **yeu*

On the other hand, ***yu-cchati-ti*** with *sḱ*-suffix:

← ie. zero grade **yu-sḱ* (**SIB**)

Compare *iṣ*, *icchati* ("to wish"), *gam, gacchati* ("to go"), *pracch*, *pṛcchati* ("to ask"), and *yam, yacchati*.

yu 2. class ***yâuti***/ 9. class ***yunāti*** ("to unite, to mix")
yūṣa m. ("soup, broth") ← ie. **yuH-s-o*

← ie. root **yeuH*

→ gr. B *en-zy-me*

yuj 7. class: ***yu-na-k-ti*** ("to yoke")
yugam ("yoke")
yôga ("yoking")

← ie. root **yeug*

→ lat. B *junction*, *adjunct*, *conjugation*, Spanish and Portuguese *junta* ("council, meeting")

∼ e. *yoke* ∼ nhg. *Joch*

yudh 4. class: ***yudh-ya-tê*** ("to fight")
yudh f. ("fight, battle")
yudh-i-ṣthira PN with loc. in compound

← ie. root **Hieudh*

→ lat. *iubere* ("to order") with PPP *iussus* and B *jussive* mood (commanding with the subjunctive as in nhg. "man nehme")

yuv-an m. ("youngster"), see p. 227
yuv-at ("young")
yav-īyans (comparative, "younger")
yav-iṣṭha (superlative, "youngest")
yuv-aśa ("young")

← ie. **yuv*

→ lat. B *iuvenile*

∼ e. *young* ∼ nhg. *jung*

∼ nir. *Tír na nÓg* (“land of (eternal) youth”) where *Tír* is cognate with lat. *terra* (see *tṛṣ*)

E.7.2. *r*

rakṣas (“demon”)
ṛkṣa (“bear”)
Perhaps both in the sense of infringer.

raghu (“light”) ***rl***, see *laghu*, both zero grade from

← ie. **le(n)g*^{w}*h*

→ lat. B *levity* (**LAT_*v***)

∼ e. *light* ∼ nhg. *leicht*

∼ nhg. f.g. *ge-ling-en* (“to succeed”) and o-grade *ge-lang-en* (“to arrive, to reach”)

raj (“to get red”)
rajaka (“washerman”)
rakta (“coloured, red”)
dūrakta ← **dur-rakta* (“badly coloured”) (**CpL*r***)

ratha (“charriot”)

← ie. **rotH*

→ lat. B *rotate*

∼ nhg. *Rad* (“wheel”)

raji f. (“line, direction”)
rājan m. (“king”), see p. 226
rāṣṭam (“kingdom”)

← ie. **reǵ* (“to extend in a straight line, to direct”)

→ lat. *regere* (“to direct, to guide”) and *rēgula* (“line, rule”) with B

- ◇ PN *Regina* from lat. *rēgīna* (“queen”)
- ◇ in English
  - with *g*: *reg-ion*, *reg-ime*, *inter-reg-num*
  - with *c* before voiceless *t*: *di-rec-t*, *cor-rec-t*
  - without *g*: *rule*, *rail-road* (compare *nail*, p. 74)
- ◇ in German *reg-ieren*, *Reg-el*, *Reg-isseur*

∼ nhg. *richtig*, *recht*

∼ in German, but of Celtic origin: *reich*, *Reich*, PNs *Heinrich, Richard*

randhra (“vent, cavity”) (***rl***)

← ie. **londh-v-o*

→ lat. *lumbus* (“hips, loins”) with B *loins*

∼ nhg. *Lenden*

rasa (“juice”), see *ṛṣ*

ric 7. class ***ri-ṇa-k-ti*** (“to empty, to leave behind”) (***rl***)

← ie. root **li(n)k*^{w}

→ lat. B *de-linqu-ent*, *re-lic*

∼ germ.
- ◇ e. to *loan* ∼ nhg. *leihen* (“to borrow, to lend”), *Darlehen* (“loan”)
- ◇ e. *loan* word ∼ nhg. *Lehnwort*

riś 6. class: ***riśati*** (“to tear, to plug”)

← ie. root **h*$_1$*reiḱ*

See *likh* with another extension.

rī 9. class: ***riṇāti*** (“to flow”)

← ie. root **h*$_3$*reiH*

→ lat.
- ◇ B. *ir-ri-tation*

◇ *rīvus* (“small stream”) with B *rival* (“who shares the use of a stream”)

∼ e. *run* ∼ nhg. *rinnen* (“to flow, to trickle”)

ru 2. class: ***râuti*** (“to cry, to roar”)
rava (“roaring”)
with dental extension: ***rud*** 2. class: ***rôditi*** (“to cry, to roar”)

← ie. root **h*$_3$ *reuH*

→ lat

◇ *ravus* (“hoarse”)

◇ B *rumour*

rudhira (“red”)
lohita (“red, copper”) (***rl***)

← ie. **rudhro*

→ lat. *ruber* (with *b* after *u*) with B

◇ English *ruby* and German *Rubin*

◇ English *rubric* and German *Rubrik*

∼ e. *red* ∼ nhg. *rot*

ruc 1. class: ***rôcatê*** (“to shine, to please”) (***rl***)

← ie. root **leuk*

→ gr. B *lynx*, *leuk-emia*

∼ lat. B *Lucifer* (“carrier of light” → PN of angel, see *bhṛ*), *lūx* in *ex oriente lūx*

∼ germ.

◇ e. *light* ∼ nhg. *Licht*

◇ nhg. *Luch-s* (“lynx”), *er-lauch-t* (“illustrious”), twice in *lich-ter-loh* (“blazing”)

See *lôka*.

ruj 6. class: ***rujati*** (“to break, to cause pain”)
See *nis*.

rudh 7. class: ***ru-ṇa-ddhi*** (“to detain, to check”)

rôdha ("holding back")

rudh 1. class: ***rôdhati*** ("to climb, to grow") (***rl***)
ruh 1. class: ***rôhati*** ("to climb, to grow") (see pp. 53)
rūḍha PPP (pp. 116)
rôha ("growing, sprout") with *h* instead of *dh* (pp. 53)

← ie. root **h*$_1$*leudh*

rêkh-ā ("line, strip, picture"), see s.v. *likh*

râi 1. class: ***rāyati*** ("to bark") (***rl***)

← ie. root **leh*$_2$*(y)*

→ lat. B to *la-ment*

râi f. ("possession, wealth")
rāyas-kāma ("desirous of property")

← ie. root **Hreh*$_1$*-i*

→ lat.

- ◇ *mediās in rēs* ("in the middle of things → without an introduction")
- ◇ *reus* ("defendant") in *in dubio pro reo*
- ◇ B *real, realtor*, *real* estate

E.7.3. *l*

likh 6. class: ***likhati*** ("to write") (***rl***, **Lar_*CH***)
lêkha ("line, letter")
rêkha ("line, letter")

← ie. root **h*$_1$*reikh*$_2$

→ nhg. *Reihe* ("series, line")

See *riś* with another extension.

laghu ("small")
lagh-īyans (comparative, "smaller")
lagh-iṣṭha (superlative, "smallest")
raghu ("light") by ***rl*** and zero grade from

← ie. $^*leng^wh$

→ lat. B *levity*, to *levitate*

∼ germ.

◇ e. *light* ∼ nhg. *leicht*

◇ nhg. f.g. *gelingen* ("to succeed") and *o*-grade *gelangen* ("to arrive, to reach")

lih 2. class: ***lêḍhi*** ("to lick")

lih ("to lick")		
present tense	*lê-ḍhi* (1)	*lih-an-ti* (3)
infinitive	*lê-ḍhum* (1)	
PPP	*lī-ḍha* (1, 2)	
future	*lêk-ṣy-a-ti* (4)	*lêk-ṣy-a-n-ti* (4)
imperfect	*a-lêṭ* (5)	*a-lih-an* (3)
perfect	*li-lêh-a* (6)	*li-lih-us* (6)
redup. aorist	*a-lī-lih-a-t*	
desiderative	*li-lik-ṣ-a-ti* (7)	

1. *lê-ḍhi* is to be explained by

ie.**leiǵh-ti* (full grade)
→ *lêǵh-ti*
→ *lêǵ-dhi* (**ASh**)
→ *lêz-dhi* (***sz*** before voiced stop)
→ *lêẓ-dhi* **(RUKI)**
→ *lêẓ-ḍhi* (**Cer*D***)
→ *lê-ḍhi* (**CpL*z***, but *ê* already long)

The inifinititve follows a similar development.

2. Along very similar lines, we find the PPP

ie. **liǵh-to* (z.g. with *to* PPP marker)
→ *liǵ-dha* (**ASh**)
→ *liz-dha* (***sz*** before voiced stop)
→ *liẓ-dha* (**RUKI**)
→ *liẓ-ḍha* (**Cer*D***)
→ *lī-ḍha* (**CpL*z***)

3. Although athematic, 3. pers. PRII exhibits *an*. This holds for all verbs in the 2. class (except *śās*, see 163), but the 3. class shows just *n* (which would then turn into *a*).

4. The future form *lêk-ṣy-a-ti* is clear from
   a) failed aspiration shift together with
   b) **BA**

5. Parasmâipada imperfect sg. has *a-lêṭ* in both the 2. and 3. pers.. For the 3. pers., we have
   ie. **e-leiǵh-t* (full grade with ie. imperfect marker *e*)
   → *a-lêǵ-dh* (**ASh**)
   → *a-lêz-dh* (***sz*** before voiced stop)
   → *a-lêẓ-dh* (**RUKI**)
   → *a-lêẓ-ḍh* (**Cer*D***)
   → *a-lê-ḍh* (**CpL*z***, but *ê* already long)
   → *a-lê-ṭ* (**AFP**, p. 45)

6. *li-lêh-a* is par. and hence regularly strong (pp. 188). *li-lih-us* is ātm. and weak.

7. *li-lik-ṣ-a-ti* is expected desiderative in zero grade.

← ie. root **(s)leiǵh*

→ e. *lick* (in contast to **GER** *kk* rather than *g*)

∼ nhg. *lecken* and also *schlecken* with *s*-mobile

lū 9. class: ***lunāti*** ("to cut, to destroy")

← ie. root **luH*

→ gr. B *ana-ly-sis*

∼ lat. *so-lv-ere* ("to release") with first part *so* ← *se* as in *sēcūrus* (p. 71), B: *ab-sol-ute*, *dis-sol-ution*, *re-sol-ute*

lubh 4. class: ***lubhyati*** ("to desire")

← ie. root **leubh*

→ lat. *quod libet* ("what pleases"), lat. B *libido*

∼ e. to *love* ∼ nhg. *lieben*

lôka ("space, earth") (see *ruc*) from *o*-grade

← ie. **loukos*

∼ PN *Waterloo*

lohita, see *rudhira*.

E.7.4. *v*

vac 2. class: ***vakti*** ("to speak")
ukta PPP
sūktam ("well said, hymn") ← *su* ("good") + *ukta*
vāc f. ("word, voice")

← ie. root **vek*^{w}

→ gr. B *epic* (twice **OGR**)

∼ lat. B

◇ in English: to *pro-voke*, *ad-voc-ate*, *voc-ative*, *vowel*, *voice*

◇ in German: *Vogt* ("(dike) reeve") ← middle Latin *vocātus*

vaj 1. class: ***vajati*** ("to get strong")
vaj-ra ("the hard or mighty one")
ôj-as ("power")
ôj-man m. ("strength, power")
vāj-a ("fight, strength")

← ie. root **veǵ*

→ lat. B *vig-orous*, *veg-etation*, *veg-ilant*

∼ e. to *wake* ∼ nhg. *wachen* and causative *wecken*, *wacker* (p. 73)

Perhaps related to *uks̥*.

vadhū ("bride, daughter in law")

← ie. root **vedh* ("to pledge (a girl for marriage)")

→ e. to *wed* ∼ nhg. *wetten* (“to bet, to gamble”)

van 8. class: ***vanôti*** (“to win”)

← ie. root **venH* (“to like, to get used to”)

→ lat. goddess of love *Venus*

∼ e. to *win*, PN: *Winfred*, *Erwin* ∼ nhg. *gewinnen*, *Wonne*, *wohnen*

See *vāñch*.

vanam (“forest”)
van consonantal noun (“tree, wood”), hence with genitive *vanas* in
vanas-pati m. (“lord of the forest, tree”)

vandhur (“plaited seat of carriage or plaited frame-work of carriage”)

← ie. root **vendh* (“to twine”)

→ nhg. *winden* (“to twine”) and *Wand* (“(orignally plaited) wall”)

vam 1. class: ***vamiti*** (“to vomit”)

← ie. root **vem*

→ lat. B to *vomit*

vaś 2. class: ***vaṣṭi*** (“to wish”), paradigm pp. 160
a-vaśyam adv. (“not to be wished → necessarily, indeed”)

← ie. root **veḱ*

vaś is not cognate with *wish*, but *vāñch* is.

vas[1] 2. class: ***vastê*** (“to clothe”)

← ie. root **ves*

→ lat. B to *invest*, *investiture* and German *Weste*

∼ e. *wear*

vas^2 ("to shine"), probably the same as *uṣ*.
uṣ-as f. ("dawn")← ie. **Hvs-es*
ucchati f. ("dawn")←ie. **Hu-sḱ-*

← ie. root **Hves*

vas^3 1. class: ***vasati*** ("to live, to be")
uṣita / ***uṣṭa*** / ***vasita*** PPP
future ***vat-sy-a-ti*** by **SIB**

← ie. root **h*$_2$*ves*

→ e. *was*

∼ nhg. *ge-wes-en*

vah 1. class: ***vahati*** ("to drive, to bring")
anaḍvah n. ("ox, draught animal ← pulling a cart") with first part *anas* (difficult cerebralization)

vah ("to drive")		
present tense	*vah-a-ti*	*vah-a-n-ti*
infinitive	*vôḍhum* (2)	
PPP	*ū-ḍha* (1)	
future	*vak-ṣy-a-ti* (3)	*vak-ṣy-a-n-ti* (3)
imperfect	*a-vah-a-t*	*a-vah-a-n*
perfect	*u-vāh-a* (4)	*ūh-us* (5)
s-aorist	*a-vāk-ṣī-t*	*a-vāk-ṣ-us*
desiderative	*vi-vak-ṣ-a-ti* (3)	

1. The ie. root of vah is **veǵh*. *ū-ḍha* is regular by

   ie. **uǵh-to* (z.g. with *to* PPP marker)
   → *uǵ-dha* (**ASh**)
   → *uz-dha* (***sz*** before voiced stop)
   → *uẓ-dha* (**RUKI**)
   → *uẓ-ḍha* (**Cer*D***)
   → *ū-ḍha* (**CpL*z***)

2. The infinitive *vôḍhum* is not quite regular. One should have obtained

ie.*$veǵh$-tum (full grade and tum-marker for infinitive)

→ $vaǵ$-$dhum$ (**ASh**)

→ vaz-$dhum$ (***sz*** before voiced consonant)

→ $vô$-$dhum$ (**CpL*z***, pp. 50)

Here, leveling from regularly formed PPP $ū$-$ḍha$ is responsible for $vôḍhum$, with cerebral $ḍh$.

3. The future form vak-$ṣy$-a-ti is clear from failed **ASh** together with **BA**. Similarly the desiderative.

4. **L*o***

5. Samprasāraṇa: By **MVS**, the reduplicative vowel u combines with the same vowel from the zero-grade root to produce $ū$.

← ie. root *$veǵh$ ("to carry")

→ lat. B veh-$icle$, vec-tor, con-vex

∼ e. a-way ← Old English $onweg$

∼ nhg. be-weg-en, Weg, weg, $Wiege$, $Woge$, $wägen$, $wiegen$

vā ("or")

← ie. *ue ("or")

→ lat. ve ("or")

vā 2. class: ***vāti*** ("to blow")
vāta ("wind"), see $vātāyanam$ under i ("to go")
vāyu m. ("wind")

← ie. root *h_2veh_1

→ lat. B $velocity$, to $ventilate$

∼ nhg. $wehen$ ("to breeze, to blow")

vāñch 1. class: ***vāñchati*** ("to wish") with

◇ ie. iterative suffix $sḱe$ → $ccha$ as in $gacchati$ (see gam)

◇ analogic insertion of n (otherwise *$vācch$)

← ie. *$vn̥H$-$sḱe$ ("to like, to get used to")

→ e. *wish* ∼ nhg. *wünschen*

vā́r n. (“rain”)

← ie. **veh₁r* (“water”)

← lat. B *ur-ine*

Semantically, compare *mih.*

vi (“away, from, off”), see *dvi* and *viṃśati*

viṃśati (“twenty”) f., not dual (for first part, see *dvi*)

← ie. **dvi-dḱm̥t-ih₂* (“two tenners”), with ie. dual ending *ih₂* (see p. 206)

Compare *pañcāśat.*

vid 2. class: ***vêtti*** (“to know”), see *vind* below
vêdānta (“end of Vedic literature”), see *anta*

← ie. root **veid*

→ gr. B *idea*, *ideology* by **OGR**

∼ lat. B *video*, lat. B *visa* (requirements) from lat. *vīsus* (“seen”)

∼ germ.

- ◇ Swedish *vetenskap* ∼ nhg. *Wissenschaft*
- ◇ e. *wise* ∼ nhg. *weise*
- ◇ nhg. *gewiss*, *bewusst*

vêda (“he knows”), an old “perfect” (with stative meaning, not with a temporal one) without reduplication
vid-vān, perfect active participle, again without reduplication

vidhavā (“widow”)

← ie. **vidhevā*

→ e. *widow* ∼ nhg. *Witwe*

Going even further back in time, one might reconstruct as ie. **h₁vi-dhh₁-ev-o* ← **dvi-dhh₁-ev-o* where *h₁v* would have been dissimilated from *dv.* The latter comprises “two” (see s.v. *dvi*) as in lat. B *di-vision.*

vind 1. class: ***vind-a-ti*** (“to find”), see *vid* above

← ie. root **veind*

vip 1. class: ***vêpatê*** ("to tremble, to be excited")
vip-ra ("excited, wise") with

◇ ***vipra*** ("poet, learned brahmin")

◇ ***vipra-rājyam*** ("Brahmin government")

◇ ***vipra-vīra*** ("Helden begeisternd")

vêp-anam ("trembling")

← ie. root **veip/ *veib*

→ lat. B *vibr-ant*

viś 6. class: ***viśati*** ("to enter")
viś f. ("house, people") z.g., see pp. 108

← ie. root **veiḱ*

→ gr. B *economics* (**OGR**)

∼ lat. *vīcus* (**LAT_*V***) ("village") and hence English *vicinity* and French *voisin* ("neighbor")

viṣa z.g. ("poison")

← ie. **veis*

→ lat. *vīrus* (**LAT_*V***, **LAT_*sr***) ("venom, poison")
◇ B *virus*
◇ B *virulent*

vīra ("man")

← ie. **vī-ro*

→ lat. B *vir-ile*, *trium-vir-ate* (for first part see *trayas*)

∼ e. *were-wolf* ∼ nhg. *Werwolf*, *Wergeld* ("expiation money" in Germanic law)

vṛ 9. class: ***vṛṇītê*** ("to choose") (***rl***)
vara ("choice, boon")

← ie. root $^*velh_1$

→ lat. B *bene-vol-ent* (for bene, see s.v. *diś*), *vol-untary*

∼ germ.

◇ e. *will* ∼ nhg. *wollen* (“to want”), *Wille* (“will, intention”), *Will-kür* (“arbitrariness”) (for second part, see s.v. *juṣ*)

◇ nhg. *Wahl* (“choice, election”)

vṛ 5. class: ***vṛṇôti*** (“to cover, to conceal”)

← ie. root $^*h_2ver$

→ lat. *aper īre* (“to open”) ←ie. $^*h_2ep$-h_2ver with B *aperitif* (for first part, see s.v. *apa*)

vṛka (“wolf”) by p. 46 from

← ie. $^*w\underset{\circ}{l}k^wo$ (**SY_Conf**, otherwise n.at. *urka*)

→ lat. (dialectal) *lupus* in “homo homini *lupus* est”, also “a skin desease”

∼ e. *wolf* ∼ nhg. *Wolf* (**IE_SY_*L***)

vṛj 7. class: ***vṛ-ṇa-k-ti*** (“to twist”)
varga (“division, group”)

← ie. root $^*verg$

→ lat. B to *di-verge*, to *conv-erge*, *on the verge*

vṛt 1. class: ***vartatê*** (“to turn, to roll, to be”)

← ie. root $^*vert$

→ lat. B *vertical*, *versus*, *verse*

∼ nhg. *werden*, *Wurm*

vâi 1. class: ***vāyati*** (“to be dry, to be extinguished”)
nir-vāṇa (“extinguished, extinction”)
ūna (“empty, deficient”) z.g.

← ie. root $^*h_1veh_2$

→ lat. B *vane*, *vanity*

vyadh 4. class: ***vidhyati*** ("to pierce, to drill through")
vyādha ("hunter")
vyādhi m. ("illness")
vyādhita ("ill")
vid-dha ("pierced, perforated")
aber nicht *vi-dhi* (see *dhā*)

vra-ta ("vow, religious observance, commandment")

← ie. **ver* and with dental extension **verdh* in the cognates below

→ lat. B *verb, verbal*

∼ e. *word* ∼ nhg. *Wort* (z.g., see **IE_SY_L**)

E.8. Sibilants

E.8.1. *ś*

śaṃs 1. class: ***śaṃsati***("to declare, to recite")

← ie. root **ḱens*

→ lat. B *census*, *censorship*, *censure*

śaṅk 1. class: ***śaṅkatê*** ("to doubt, to hesitatedeclare")

← ie. root **ḱenk*

→ lat. *cunctāri* ("to be slow, to hesitate")

∼ n. to *hang* ∼ nhg. *hängen* and also nhg. *Verhängnis* ("doom"), *Hängepartie* ("adjourned game")

śatám ("hundred")

← ie. **ḱm̥tóm* ← ie. **dḱm̥tóm* ("the tenth" tenner)

→ lat. B *centipede* (for second part see *pad*), *centimeter* (for second part see *mā*), *percent*

∼ e. *hund-red*

∼ German *hundert* from Old Saxon

See *daśa* and *pañcāśat*.

śad ("to fall")
śa-śāda pf.
śat-sy-ati fut.

← ie. root **ḱed*

→ lat. B *ac-cid-ent*, *cad-aver*, *oc-cas-ion*

śap 1. class: ***śapati*** ("to vow, to curse")

← ie. root **ḱap*

→ lat.

- ◇ B *cap-ture*, *cap-tive*, *cap-tion*
- ◇ lat. *cap-sula* with English *cap-sule*
- ◇ lat. *dē-cipere* with English to *de-ceive*
- ◇ lat. *re-cipere* with English to *re-ceive*
- ◇ B *inter-cep-t*, to *ac-cep-t*, *capable*
- ◇ B *prin-cip-al*, *parti-cip-ation*, *parti-cip-le*

∼ germ.

- ◇ e. to *heave* ∼ nhg. *heben*
- ◇ nhg. *Haf-t* ("imprisonment"), also sünd*haft* ("sinful") wahr*haft*ig ("truthful")

śaranam ("protection")
śarman n. ("shelter")
āśāra ("shelter")
śara ("skin on milk → fresh butter")
śālā ("hall, large room")

← ie. root **ḱel* ("to cover, to hide")

→ gr.

- ◇ B *cal-yx*, *eucalyptus* ("well-hidden calyx" → name of a tree) (first part see *su*)
- ◇ B *apo-cal-ypse* ("uncovering, revelation, end of the world", part of the bible) (first part see *apa*)

∼ lat.

- ◇ *cella* with B in English *cell* and B in German *Keller*, *Kellner* (early borrowings reflect pronunciation of lat. *c* as *k*), *Zelle* (later borrowing show that lat. *c* was pronounced as a voiceless sibilant before *e* or *i*)
- ◇ B *oc-cul-t*
- ◇ B *col-our*

∼ e. *helm-et* ∼ nhg. *hehlen* (in *ver-hehlen*), *Hehler*, *verhüllen*, *Helm*, *Hülle*, *Halle*, *Wil-helm*, *Hel-mut*

śaśa ("hare") (with oi. forward assimilation *ś..s* → *ś..ś*)

← ie. **ḱasó* ("grey")

→ e. *hare* ∼ nhg. *Hase* (where e. *r* can be explained by **VER**, but nhg. *s* cannot)

śas 2. class: ***śasti*** ("to cut, to slaughter")
śastram ("knife, weapon")

← ie. root root **ḱes*

→ lat. B to *castrate*

śās 2. class: ***śāsti*** ("to teach, to rule")
śāstram ("rule, manual, teaching")

← ie. root **ḱeHs*

śiras n. ("scull, head")

← ie. **ḱerh*$_2$

→ lat. B *cer-ebral*

∼ nhg. *Hir-n*

Related to *śṛṅga*.

śiva ("favourable")

← ie. **ḱeivo* ("friendly, intimate, dear")

→ lat. B *civil*, *civilization*

Perhaps related to *śī*.

śī 2. class: ***śêtê***/ 1. class: **śayatê** (“to lie, to sleep”)
śāya (“lying, sleeping”)
śayu (“lying, taking a rest”)
śayā (“bed”)
śayyā (“bed”) gerundive
śayyā-gṛham (“bedroom”)
ā-śaya (“stay, sojourn”)
jalā-śaya (“stay of water → lake”) ← *jala* (“water”) + *ā-śaya*

← ie. root **ḱeyH*

→ lat. *cūnae* f. pl. (“cradle”) with B *incunable* in the sense of “nappies, cradle”
→ “the earliest stages or first traces in the development of anything”
→ “a book or pamphlet printed in Europe before the year 1501, i.e., just after the invention of the printing press”)

∼ e. *home* ∼ nhg. *Heim*

śuc 1. class: ***śôcate***(“to shine, to grieve”) (**PPal**, **SPal**)

← ie. root *ḱeuk*

śuṣ 4. class: ***śuṣyati***(“to become dry”)

← ie. root *ḱeus*

śūnya (“empty”)

← ie. root *ḱeuh*$_1$

→ nhg. *hohl*, but see s.v. *kula*.

śṛṅgam (“peak, horn”)

← ie. **ḱr̥no*

→ lat. B *corner*

∼ e. *horn* ∼ nhg. *Horn* and furthermore nhg. *Hirsch* (“who carries a horn → stag”)

Related to *śiras*.

śraddhā f. (“belief, trust”)

← ie. **ḱred-dheh$_1$* ("to place in the heart → to believe")

→ lat. B *credit*, *credible*, *credo* (literally 1. pers. sg.: "I believe"). Compare

◇ *hṛd*

◇ *dīvidere* s.v. *dhā*

śram 4. class: ***śrāmyati*** ("to tire"), compare the unrelated *klam* under *kram*
śrānta PPP (**Lar_SY**)

← ie. root **ḱremH*

śri 1. class: ***śrayati*** ("to resort to, to lean")

← ie. root *ḱlei* (*i*-extention of root found s.v. *śar-ana*)

→ gr.

◇ B *cli-max* (ogr. "ladder" in ogr. → English "highlight, summit")

◇ B *clinic* (short for *klīnikē technē* ("the technique for healing bedridden people → medical science"), for *technē* see s.v. *takṣ*)

∼ lat.

◇ B *client* from pres.P ie. **ḱli-ent-* ("leaning"), see *ab-s-ent* (p. 265)

◇ B *climate* (named after the position (inclination) of the sun)

◇ B with *v*-extention *pro-cli-v-ity*

◇ B with *n*-extension: *in-clin-ed*, *de-cline*, *de-clin-ation*

∼ germ.

◇ with *n*-extension: e. to *lean* ∼ nhg. *lehnen*, with w.-i. ie. *ḱr/ ḱl* → e./nhg. *r/ l* s.v. *śru*

◇ e. *ladder* ∼ nhg. *Leiter* (compare *climax* under this entry)

śrī ("fortune, success, beauty, fame")
śrêyans (comparative, "more beautiful, more exquisite")
lagh-iṣṭha (superlative, "most beautiful, most exquisite")

śru 5. class: ***śṛṇôti*** ("to hear") (see pp. 88) (***rl***)
śravas ("fame")
śromatam ("fame, renown")
śloka ("verse, praise")

← ie. root **ḱleu*

→ germ.

- ◇ e. *loud* ∼ nhg. *laut*, *läut*en (“to ring, to toll”), with w.-i. ie. *ḱr/ ḱl* → e./nhg. *r/ l* s.v. *śri*
- ◇ nhg. *lauschen* (“to listen”)
- ◇ nhg. *Leumund* (“reputation”), with *m*-extension as in *śromatam*
- ◇ modern German name *Lud-wig* ← ohg. name *Chlod-vig* (“who is famous (in battles)”)

ślakṣṇa (“slippery, meagre, thin”) ← n.at. *ślakṣ*

← ie. **slnǵ*

→ lat. B *languid*, *lax*

∼ e. *slack*

śvan, m. (“dog”), see p. 226
śvāna (“dog”)

← ie. **ḱvón*

→ gr. B *cynic*

∼ lat. *canis* in “cave canem”

∼ e. *hound* ∼ nhg. *Hund*

śvaśura (“father in law”) with oi. backward assimilation *s..ś* → *ś..ś*
śvaśrū (“mother in law”)

← ie. **sveḱuro*

→ nhg. *Schwäher* (unusual, “father in law”) and *Schwager* (“son of the father in law”) (**VER**)

śvas 2. class: ***śvasiti*** (“to hiss, to snort”)
śvāsa (“sighing, breathing”)

← ie. root **ḱves*

→ lat. *querī* (“to complain, to protest”) with B *querulous*

śvêta (“white”)
śvit-ra (“whitish, white leprosy”)

← ie. root *kv́eit*

∼ e. *white* ∼ nhg. *weiß*

E.8.2. *ṣ*

ṣaṭ*/*ṣaṣ (“six”)

← ie. **sveḱs*

→ gr. B *hexagon*

∼ lat. *sex* with B *sextet*

∼ e. *six* ∼ nhg. *sechs*

Note:

◇ For final consonant, see subsection B.3.5.

◇ For initial consonant, see **SI** which is not really fitting.

ṣṭīv 1. class: ***ṣṭīvati*** (“to spit”)

← ie. root **spieuH*/ **speiHu*/ **tspieuH* (various suggestions, unclear)

→ lat. *PPP spūtum* with B *sputum*

∼ e. *spew* ∼ nhg. *speien*

E.8.3. *s*

sa (“with, provided with”), used in compounds for *saha* such as

◇ ***sodara*** (“belly”) ← *sa* + *udara* (“brother”)

◇ ***sa-dhana*** (“rich”), for second part see dhanam (“wealth”) under *dhā* (“to set, to put”)

sakhi m. (“friend”) **Lar_*CH***

← ie. **sok*^{w}-h_2

→ lat. B *social*

See *sac.*

sac 1. class: ***sacatê*** ("to follow")

← ie. root $^*sek^w$

→ lat. *sequi* with B *sequence*, *second* (i.e., "the following one"), German *Sekunde*

∼ e. *see* ∼ nhg. *sehen* (i.e., "to follow with the eyes")

See *o*-grade *sakhi.*

saj 1. class: ***sajati*** ("to adhere, to stick")
pa. ***bodhisatta*** ("a Buddha saint") may go back to oi. *bodhisattva* (often written *bodhisatva*) ("an enlightened being") or to **bodhisakta* ("who clings to enlightment")

sad 1. class: ***sīdati*** ("to sit") (see p. 80 and *nīḍa*)
upa-ni-ṣad f. (according to one interpretation: "what is taught when sitting down and close to", indische Geheimlehre, see *upa*)
vi-ṣāda ("sorrow")

← ie. root $^*sed$

→ gr. B via lat. *cat-hedra* (**OGR**):

- ◇ German *Kat-heder* ("lectern")
- ◇ English *cathedral* (i.e., "a bishop's seat")
- ◇ French *chaire* ("rocking chair")

∼ lat.

- ◇ *sīdere* ∼ oi. *sīdati* (similar, but independent development)
- ◇ B *sed-entary*, *pre-sid-ing*, *re-sid-ing*
- ◇ *ses-sion*, *obses-sion* (**LAT_*DD***)

san 8. class ***sanôti*** ("to obtain, to possess")
sā-ta PPP
gô-ṣaṇi ("acquring cattle"), for first part see *gô*

← ie. root $senh_2$

→ lat. B *sin-ister*

sana ("old")

← ie. *seno*

→ lat. B *senate*, *senator*

sap 1. class: ***sapati*** ("to worhip")

← ie. root **sep*

→ lat. B *sepulture*

sapta ("seven")

← ie. **septm̥*

→ ogr. *hepta* (as in *heptagon*)

∼ lat. *septem*

∼ e. *seven* ∼ nhg. *sieben*

sam ("together")

← ie. **sem* ("one")

→ gr. B *homosexual*

∼ lat.

- ◇ *semper* ("always") with B *sempiternal* ← *semper* + *eternal*
- ◇ B *similar*, *simple*

∼ germ.

- ◇ e. *same*
- ◇ nhg. *sammeln* ("to collect"), *samt*, *sämtlich*
- ◇ e. *-some* ∼ nhg. *-sam*, both meaning "of same quality", as in
  - e. *tiresome*, *wholesome*
  - nhg. *kleidsam*, *gleichsam*

See *sāmi*.

sarpís n. ("clarified butter") (***rl***)

← ie. **solpí*

→ lat. B *sulphur* with difficult *ph*

$\sim$ e. *salve* ("ointment") $\sim$ nhg. *Salbe* (**VER**: see accent in oi. *sarpís*)

sarva ("all, every, whole") (***rl***)

$\leftarrow$ ie. **solHvo*

$\rightarrow$ gr. B *holocaust*, *hologram*

$\sim$ lat. *salūs*, *salūtis* ("health, well-being") with B to *salute* (i.e., "to wish health"), *safe*

$\sim$ nir. *slān* ("good-bye")

sāmi ("in one $\rightarrow$ one of the two $\rightarrow$ half")

$\leftarrow$ ie. **sēmi* loc. sg. ("in one")

$\rightarrow$ gr. B *hemi-sphere*

$\sim$ lat. B *semi-final*

See *sam.*

sidh 4. class: ***sidhyati***("to have success, to be valid")
sidh-ra ("perfect, good"), zero-grade *ra*-adjective
sādh 1. class: ***sādhati*** ("to be successful, to lead to one's goal")
sādh-u ("able, noble, obedient")

$\leftarrow$ ie. root **seHdh*

sādhayati is regular causative from ie. **seHdh.*

sidh 1. class: ***sêdhati***("to interdict, to drive away")

$\leftarrow$ ie. **kýes-dhh*$_1$ (***sz***, ***aā***, **CpL*z***)

$\rightarrow$ lat. *cēdere* ("to go, to proceed") with B to *proceed*, to *succeed*, *recession*, *credible*, *credo* (literally 1. pers. sg.: "I believe"). Compare *dīvidere* s.v. *dhā* and compare *śraddhā.*

siv 4. class: ***sīv-y-a-ti*** ("to stitch")
syū-ta PPP ("bag")

$\leftarrow$ ie. root **seiHv* (**Lar_MTh**)

See *div.*

su ("good")
sūktam ("well said, hymn") ← *su* + *ukta* (PPP of *vac*, "to say")
sv-annam ("good food", for second part see *ad*)
su-kham ("happiness, pleasure")
su-ṣṭhu adverb ("well")
su-carita ("well-done")
su-gandhi ("fragrant", for second part see *gandha*, "smell, odor")
sv-a-ccha ("pure, transparent"), see s.v. *chad*

← ie. $^*h_1su$

→ ogr. *eu* ← $^*eh_1u$ in B

- ◇ *ev-angelic*, German *Evangelium* (lat. ending, "gospel")
- ◇ *eu-phemism*, see *bhan*
- ◇ *hygiene* (similar to oi. *su-jīvita* ("living happily"), see *jīv*

May well be related to ie. $^*h_1es$ (see *as*)

su 5. class: ***sunôti*** ("to press")
suta ("squeezed") PPP
sav-anam ("pressing Soma, childbirth") or below at *sū* ("to beget")
ut-sav-a ("(drinking) festival")
sôma ("Soma plant/ juice")

sura ("god"), back-formation (see p. 7) from *asura* ("lord of life, god, demon"):

a-dêva ("demon")	with negating *a* from:	*dêva* ("god")
just as		
a-sura ("demon"), falsely	with negating *a* from:	*sura* ("god")

sū 2. class: ***sūtê*** ("to beget")
sūta PPP ("having given birth") and also *suta* (probably mixed in from *su*, "to press")
sū m. ("father")
sav-ana-m ("childbirth") or above at *su* ("to press")
savi-tar m. ("activator, father")

← ie. root $^*seuH$

sūkara m. ("pig")

← ie. **suHs*

∼ e. *sow* ∼ nhg. *Sau*

sūnu m. ("son")

← ie. **sūnu*

∼ e. *son* ∼ nhg. *Sohn*

sṛ 1. class: ***sarati***("to go, to flow") (***rl***)

← ie. root **sel*

→ agr. *hal-ma* (as in board game) (**OGR**)

∼ lat.

◇ *sal-īre* ("to jump") with B *sal-to* via Italian

◇ B *serum*

sṛp 1. class: ***sarpati***("to crawl, to creep")

← ie. root **serp*

→ gr. B *herpes* ("spreading skin condition")

∼ lat. B *serpent*

skand 1. class: ***skandati*** ("to jump")

← ie. root **skend*

→ lat. B to *de-scend*, to *tran-scend*

stan 1. class: ***stanati*** ("to thunder, to hum")

← ie. root **(s)ten*

→ germ.

◇ with *s*-mobile: nhg. *stöhnen* ("to groan") (see subsection B.5.5)

◇ without *s*-mobile: e. *thunder* ∼ nhg. *donnern*

starī ("a barren cow")

← ie. **ster*

→ lat. B *sterile*

stigh 5. class: ***stighnôti*** ("to step, to mount")

← ie. root **steigh*

→ nhg. *steigen*, *Steg*, *Steigeisen*

stṝ 5. class: ***stṛnôti***/ 9. class: ***stṛnāti***, ("to spread")
stīrṇa PPP
vi-stara ("extension, detail")
vi-starêṇa ("at length")

← ie. root **sterH*

→ gr. B *a-stro-logy*, *a-stro-nomy*, *aster*, *desaster*

∼ lat.

◇ *stēlla* ← **stēr-la* with B *con-stella-tion*, *stellar*

◇ B *sub-stratum*

∼ nhg. *Stern*

sthag 10. class: ***sthagayati*** ("to hide, to cover")

← ie. root **(s)th$_2$eg*

→ lat.

◇ (B) *toga*

◇ *tēgula* ("*tile*") → B German *Ziegel*

∼ e. *thatcher* ∼ *Dach* ("roof")

See other instances of s-mobile at *carman* and *lih*.

sthā 1. class: ***tiṣṭhati*** ("to stand")
sthāman n. ("station, position, strength")
stāman (meaning unknown) (see 2. below)
ut-thāya gerund "standing up" (**DzD**)
sthi-ra ("steady, durable"), see pp. 121
sthūra ("strong"), see below
yudhi-ṣṭhira PN with loc. case ending
su-ṣṭhu adverb ("well"), see *su*
stiyā ("standing water") (see 3. below)

sthā ("to stand")		
present tense	*ti-ṣṭha-ti* (1)	*ti-ṣṭha-n-ti* (1)
infinitive	*sthā-tum* (2)	
PPP	*sthi-ta* (3)	
future	*sthā-sy-a-ti* (2)	*sthā-sy-a-n-ti* (2)
imperfect	*a-ti-ṣṭha-t* (1)	*a-ti-ṣṭha-n* (1)
perfect	*ta-sth-âu* (4)	*ta-sth-us*
root aorist	*a-sthā-t*	*a-sth-us*
desiderative	*ti-ṣṭhā-s-a-ti* (2, 5)	*ti-ṣṭhā-s-u* (2, 5)

1. The ie. root is **steh*$_2$. **DA** is not involved, but one obtains *tiṣṭhati* from

   **ti-sth*$_2$*-e-ti* (reduplication with *i*, z.g. root, thematic vowel)
   → **ti-sth-eti* (**Lar_*CH*:** h_2 aspirates *t*)
   → *ti-ṣth-ati* **(RUKI)**
   → *ti-ṣṭh-ati* (**Cer*D***)

2. The aspirated oi. root *sthā* is in full grade, as in the infinitive *sthā-tum* and the future forms. The laryngeal **seems** to have caused both aspiration and lengthening of the vowel. However, ie. **steh*$_2$*sy-e-ti* should have produced *stā-sy-a-ti*. The rest is done by levelling:

	stā-sy-a-ti	
influenced by	*ti-ṣṭha-ti*	with aspirated *ṭh*
turns into	*sthā-sy-a-ti*	with aspirated *th*

   Stāman is the regular form without levelling while *sthāman* shows levelling encountered also in the future forms.

   Remember that voiceless aspirated plosives are mostly explained by laryngeals (as here) or by preceding *s* as in oi. *sphira* (***sP(h)***). Aspiration in oi. root *sthā* finds two explanations.

3. Similar to the future form, *sthi-ta* also shows double reflex of the laryngeal (both **Lar_*CH*** and **Lar_*V***). Without aspiration, we have *stiyā* ("standing water").

4. The perfect *ta-sth-âu* is similar to *da-d-âu* from *dā* ("to give"). See p. 192.

5. The desiderative is irregular in using the strong form.

← ie. root **steh*$_2$

→ lat.

◇ *si-stere* (with reduplication similar to *tiṣṭhati*) with B to *desist*, to *resist*, to *subsist*

◇ B *status*, *station*

∼ e. *stand* ∼ nhg. *stehen*

sthūra (“strong”)
sthūla (“big, fat”)
sthav-īyans (comparative, “bigger”)
sthav-iṣṭha (superlative, “biggest”)

← ie. *sth_2u-ro* (from ie. *$steh_2$* s.v. *sthā* above)

→ lat. B *re-staur-ation*, to *restore*

∼ nlg. *stur* (“stubborn”)

snā 1. class: ***snāti*** (“to take a bath, to purify oneself”), consequential of n.at. *san*
snā-ta PPP
ni-ṣṇāta, ***ni-ṣṇa*** (“having plunged into → experienced”)

← ie. root *sn-eh_2

snāvan m. (“muscle, sinew”)

← ie. *$sneh_1$

→ gr. B *neuron*, *neurology*

∼ lat. B *nervous*

snih 4. class: ***snihyati*** (“to stick, to adhere, to like”)
snig-dha PPP (“attached, lovely”)
sneh-a (“love, oil”)

← ie. root *$sneig^wh$

→ e. *snow* ∼ nhg. *Schnee*

smi 1. class: ***smayatê*** (“to smile, to laugh”)
smera (“smiling”)

← ie. root *$smei$

→ lat. *mīrus* (“laughter → remarkable”), also in *annus mira-bilis* (“a wonderful year”) and in B *miracle*

smṛ 1. class: ***smarati*** ("to remember")

← ie. root **(s)mer*

spṛh 10. class: ***spṛhayati*** ("to long for, desire intensely")

← ie. root **sperǵh*

→ with nasal infix e. to *spring* ∼ nhg. *springen*

sphāy 1. class: ***sphāyatê*** ("to grow large or fat")
sphi-ra ("fat") (***sP(h)***)

← ie. root **speh*$_1$

→ lat. *spēs* f. ("hope") with B *esperanza*

∼ lat. B *pro-sper, pro-sper-ity*

sphic f. ("buttock, hip")

← ie. **sp...*

→ nhg. *Speck* ("bacon")

sva ("own")

← ie. **svo*

→ lat. *suus* in

- ◇ "Iustitia *suum* cuique distribuit" ("Justice renders to everyone his due.") by the Roman politician Marcus Tullius Cicero (106 BC – 43 BC)
- ◇ *sui* generis ("of its (his, her, or their) own kind; in a class: by itself; unique")

∼ oir. *féin* ← **sve-(de)sin* ("own, self"). *Sinn Féin* ("we ourselves") is a political party in Ireland, active in both parts. See also nir. *mo theanga féin* ("my own language")

∼ nhg. *sich*

See *svadhā.*

svadhā ("custom, home") ← *sva* + *dhā*

← ie. **s(v)ed*^{h}*us*

→ ogr. *ēthos* in B *ethics* (**OGR_DA** twice, **OGR_DA**)

∼ nhg. *Sitte*

svan 1. class: ***svanati*** (“to sound”)

← ie. root **svenH*

→ lat. *son-are* (by *sve* → *swo* → *so* as in *sorōr*, see *svasar*) with B *son-ata*, *son-ic*, *re-son-ance*

svap 2. class: ***svapiti*** (“to sleep”)

← ie. root **svep*

→ gr. B *hypnosis* (**OGR**)

∼ lat. *somnus* (by *p* → *m* before nasal) with B *somnambulant*, *somniferous* (for second part see *bhṛ*)

svar 1. class: ***svarati*** (“to sound”)
svara (“sound, voice, vowel”)
su-svar-am adv. (“very sweetly”)

← ie. **sver*

→ e. *an-swer* ← Old English *and-swaru* (“to sound against”) ∼ nhg. *Antwort*, e. *swear* ∼ nhg. *schwören*

svar (“the space above the sun”) ←ie. **sh*$_2$*vel*, related to
sūrya (“sun”)← ie. **suh*$_2$*l-yo* by **Lar_*CH***

← ie. **seh*$_2$*vel-*

→ gr. B *helio-centric*

∼ lat. *sōl* (“sun”) in famous neapolitan song: *o sole mio*

svasar f. (“sister”)

← ie. **svesōr*

→ lat. *sorōr* (by *sve* → *swo* → *so* as in *sonare*, see *svan*) with B *sorority*

∼ e. *sister* ∼ nhg. *Schwester*

svad 1. class: ***svadatê*** (“to taste, to be sweet or pleasant to the taste”)
svādu (“sweet”)

← ie. root **sveh$_2$du* (with difficult to explain *a* in *svad*)

→ gr. B *hedonic* (**OGR**)

∼ lat. B *suave*

∼ e. *sweet* ∼ nhg. *süß*

svāmin m. (“master, owner”) ← *sva* + (perhaps) *amā* + *in*

svid 1. class: ***svêdatê*** (“to sweat”)

← ie. root **sveid*

∼ e. *sweat* ∼ nhg. *Schweiß*

E.9. Aspirant *h*

ha (enclitic emphasizing particle meaning “indeed”), see s.v. *iti*

han 2. class: ***han-ti***/ 10. class: ***pra-ghnātayati*** (“to hit, to kill”)
ghna (“killing”) as in ***śatru-ghna*** (“killing the enemies”, one of Rāma’s brothers), see pp. 135
vṛtra-han (“*Vṛtra* killer, Indra”) with ved. nom. sg. ***vṛtra-hā*** (compare *rājā* on p. 50)
a-ghnyā gerundive: pp. 141 (“not to be killed → cow”)
hiṃsā (“violence”, see pp. 126)

han (“to hit”)		
present tense	*han-ti* (1)	*ghn-an-ti* (3)
infinitive	*han-tum* (1)	
PPP	*ha-ta* (4)	
future	*han-i-ṣy-a-ti* (1, 2)	*han-i-ṣy-a-n-ti* (1, 2)
imperfect	*a-han* (1, 5)	*a-ghn-an* (3)
perfect	*ja-ghān-a* (6)	*ja-ghn-us* (3)
desiderative	*ji-ghāṃ-s-a-ti* (6)	*ji-ghāṃ-s-u* (6)

1. *han-ti* is regularly produced from ie. **g^{w}hen-ti* (**SPal**). The strong form han is also seen in the infinitive.

2. The future forms also use the strong form. The *i* is a reflex of laryngeals, in this case By analogy with laryngeal verbs like *jan*, *i* has spread to other verbs like *han-i-ṣy-a-ti*. A second future form is *haṃ-sy-a-ti*.

3. **SPal** does not occur before consonants. Thus, we find (with the regular loss of the labial element) the weak (!) PRII 3. pers. pl. forms. Similarly perf. 3. pers. pl.

4. The PPP *ha-ta* is not fully explainable by **SY_*N***, because one should expect ghata, without **SPal**. Analogy with forms like *na-ta* (see p. 112) may be responsible.

5. Identical parasmâipada imperfect 2. and 3. pers. sg. are common in athematic verbs. Due to **CCl**, the endings *s* (2. pers.) and *t* (3. pers.) are lost:
   - ◇ *a-han* ← *a-han-s*
   - ◇ *a-han* ← *a-han-t*

6. **L*o*** and no secondary palatalization because of ie. root vowel *o* in strong perfect form.

7. There exist two different desideratives for *han* ("to kill") ← ie. **g*^{w}*hen*, depending on the suffix. On the one hand, we have the *Hs* desiderative shown in the table above:

**g*^{w}*hi-g*^{w}*hn̥-Hs-*
→ *g*^{w}*hi-g*^{w}*hā-s-* (laryngeal after syllabic *n̥*)
→ *g*^{w}*i-g*^{w}*hā-s-* (**DA**)
→ *ji-ghā-s-* (**SPal**)
→ *ji-ghāṃ-s-* (lev. from *haṃ-sy-a-ti*?)

→ *ji-ghāṃ-s-a-ti*	he wishes to kill
→ *ji-ghāṃ-s-u*	revengeful
→ *ji-ghāṃ-s-ā*	revenge

On the other hand, the *s* suffix yields:

**g*^{w}*hi-g*^{w}*hn-s-*
→ *hi-g*^{w}*hn-s-* (**SPal**)
→ *hi-n-s-* (**CCl**)
→ *hi-ṃ-s-*

→ *hiṃ-s-a-ti*	he injures
→ *hiṃ-s-ā*	injury

← *ie. root *g*^{w}*hen*

→ lat. (B) to *de-fen-d*

haṃsa ("goose")

← ie. **ǵhans*

→ germ.

- ◇ e. *goose* ∼ nhg. *Gans* (**NHG_E**)
- ◇ e. *yawn* ∼ nhg. *gähnen* (i.e. the *goose* is the *yawner*) (compare e. *yellow* ∼ *gelb*)

hanu ("chin, jaw") (**PPal**)

← ie. **ǵen-u*

→ e. *chin* ∼ nhg. *Kinn*

Perhaps, the basic meaning of ie. **ǵenu*/*ǵonu* is "curve" and this word is the same as *jānu* ("knee").

hari*/ *hiri ("golden, yellow", name of Viṣṇu)

← ie. **ǵhelh*$_3$

→ gr. B *chl-orine*

∼ lat. *helvus* ("yellow") in the Latin name for Switzerland: Confoederatio *Helvetica* (abbreviation: CH)

∼ e. *yellow* ∼ *gelb* (compare e. *yawn* ∼ nhg. *gähnen*)

hary 1. class: ***haryati*** ("to desire, to yearn after") (**PPal**)

← ie. **ǵher*

→ gr. B *char-isma*

∼ nhg. *gern(e)*

has 1. class: ***hasati*** ("to laugh")

← ie. root **ghes* (**SPal**)

See *jakṣ*.

hasta ("hand")

← ie. **ǵhes-*/ **ǵhes-r*

→ gr. B *chir-urgy*

hi 5. class: ***hinôti*** ("to push, to move, to promote")
hê-tu ("reason, argument")

hima ("winter, snow") with B *Himalaya* (**PPal**)

← ie. **ǵheim*

→ lat. B to *hi-bernate*

hu 3. class: ***juhôti*** ("to sacrifice")
juh-ū ("ladle")

hu ("to sacrifice")		
present tense	*ju-hô-ti* (3)	*ju-hv-a-ti* (4)
infinitive	*hô-tum* (1)	
PPP	*hu-ta* (5)	
future	*hô-ṣy-a-ti* (2)	*hô-ṣy-a-n-ti* (2)
imperfect	*a-ju-hô-t* (3)	*a-ju-hav-us* (6)
perfect	*ju-hāv-a* (7)	*ju-huv-us* (7)
s-aorist	*a-hâu-ṣī-t*	*a-hâu-ṣ-us*
desiderative	*ju-hū-ṣ-a-ti* (8)	*ju-hū-ṣ-a-ti* (8)

1. From ie. **ǵ^{h}eu*, we regularly obtain the full-grade infinitive *hô-tum* by **DIPH** and **PPal**.

2. The future forms are also in full grade, with the application of **RUKI**.

3. The present tense 3. pers. sg. *ju-hô-ti* is, of course, in full grade:

   ie.**ǵhu-ǵheu-ti*
   → *ǵu-ǵhô-ti* (**DA**)
   → *ju-hô-ti* (**PPal**)

   Similarly, impf. sg.

4. *ju-hv-a-ti* (and, similarly, *bi-bhy-a-ti*) regularly reflect **SY_*N*** and ***hV***.

5. The expected zero grade is present in the PPP *hu-ta*.

6. As a peculiarity of the 3. class, the imperfect 3. pers. pl.
   a) is in full grade and

b) shows the ending *us*,

here in *a-ju-hav-us* and similarly in *a-bi-bhay-us* from *bhī*.

7. *ju-hāv-a* is regular:

ie. **ǵhu-ǵhou-e* (reduplication, *o*-grade)
→ *ǵu-ǵhou-e* (**DA**)
→ *ju-hov-e* (**PPal**, ***hV***)
→ *ju-hōv-e* (**L*o***)
→ *ju-hāv-a* (***aā***)

By ***V*+*hV***, perfect pl. *ju-huv-us* is regular.

8. *ju-hū-ṣ-a-ti* shows irregular (but not isolated) long *ū* where the zero grade would be expected.

← ie. root **ǵʰeu* and ie. **ǵʰeud*

→ lat. B *fondue*, *con-fus-ion*, *in-fus-ion* (**LAT_*f***)

∼ nhg. *gießen*

hurch 1. class: ***hūrchati*** ("to be crooked, to deceive")
hūrchana ("the act of going crookedly, crookedness")
On the one hand, full-grade ***hvar-as*** n. ("crookedness, dishonesty") ← ie. **hvHeres* (**Lar_*CH***)

← ie. root **hvHer*

On the other hand, ***hūrchati*** ← ie. **hr̥H-sḱ-e-ti*, with *sḱ*-suffix

← ie. zero grade ie. **huHr-sḱ-e-ti* (**Lar_*V***, **SIB**)

Compare *gam, gacchati.*

hṛ 1. class: ***harati*** ("to take, to rob") (**PPal**)

← ie. root **ǵher* ("to take, to grab")

→ lat. B *co-hor-t* (but may alternatively belong to lat. *hortus* s.v. *gṛha*)

hṛd n. ("heart") with mysterious oi. *h*
su-hṛd m. ("having a good heart → friend")

← ie. **ḱerd*

→ gr. B *cardiology*

∼ lat. *cor*, *cordis* with B *dis-cord*, French *cordialement*

∼ e. *heart* ∼ nhg. *Herz*

See also *śraddhā.*

hṛṣ 1. class: ***harṣati***/ 4. class ***hṛṣyati*** ("to bristle, to become erect (as the hair of the body)") (**PPal**)

← ie. root **ǵhers* ("to be stiff, to be surprised")

→ lat. (B) *horror* and lat. B *horrific*

hyas ("yesterday")

← ie. **ǵh-di-es* ("yesterday") (with simplification of initial cluster in most languages)

→ e. *yes-terday* ∼ nhg. *ges-tern*

See *a-dya* s.v. *dêva.*

Index

C

H

J

K

M

N

V

Y

Z

Bibliography

Robert Beekes. *Etymological Dictionary of Greek.* Brill Academic Publisher, Leiden, 2010. 2 volumes.

Robert S. Beekes. *Comparative Indo-European Linguistics.* John Benjamins Publishing Company, Amsterdam/Philadelphia, 1995.

Karl Brugmann. *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*, volume Erster Band: Einleitung und Lautlehre. Cambridge University Press, 2009. This edition first published in 1886 (by Karl J. Trübner, Strassburg).

Thomas Burrow. *The Sanskrit Language.* Motilal Banarsidass Publishers, 2001. First Edition UK 1955.

James Clackson. *Indo-European Linguistics.* Cambridge University Press, Cambridge et al., 2007.

Michiel de Vaan. *Etymological Dictionary of Latin and the other Italic Languages.* Brill Academic Publisher, Leiden, 2008.

Madhav M. Deshpande. *A Sanskrit Primer.* Centers for South and Southeast Asian Studies, University of Michigan, 2007.

Dudenredaktion. *Das Herkunftswörterbuch.* Dudenverlag, Mannheim et al., 4 edition, 2006.

George E. Dunkel. *Lexikon der indogermanischen Partikeln und Pronominalstämme, Band 1.* Universitätsverlag C. Winter, 2014a.

George E. Dunkel. *Lexikon der indogermanischen Partikeln und Pronominalstämme, Band 2.* Universitätsverlag C. Winter, 2014b.

Thomas Egenes. *Introduction to Sanskrit, Part One.* Motilal Banarsidass Publishers, 4. edition, 2011.

Thomas Egenes. *Introduction to Sanskrit, Part Two.* Motilal Banarsidass Publishers, 2. edition, 2012.

Benjamin W. Fortson IV. *Indo-European Language and Culture.* Blackwell, Oxford, 2004.

Robert P. Goldman and Sally J. Sutherland Goldman. *Devanipravesika: An Introduction to the Sanskrit Language.* Motilal Banarsidass Publishers, 2011.

Toshifumi Goto. *Old Indo-Aryan Morphology and its Indo-Iranian Background*. Verlag der Österreichischen Akademie der Wissenschaften, 2013.

Walter Harding Maurer. *The Sanskrit Language*. Routledge, 2009.

Oskar von Hinüber. Das ältere Mittelindisch im überblick. In Philosophisch-historische Klasse Österreichische Akademie der Wissenschaften, editor, *Veröffentlichungen der Kommission für Sprachen und Kulturen Südasiens, Heft 20*. Verlag der Österreichischen Akademie der Wissenschaften, 1986.

Hans Henrich Hock. *Principles of Historical Linguistics*. Mouton de Gruyter, 2 edition, 1991.

Friedrich Kluge. *Etymologisches Wörterbuch der deutschen Sprache*. Walter de Gruyter, Berlin/New York, 24 edition, 2002.

Masato Kobayashi. *Historical Phonology of Old Indo-Aryan Consonants*. Tokyo University of Foreign Studies, 2004.

Guus Kroonen. *Etymological Dictionary of Proto-Germanic*. Brill Academic Publisher, Leiden, 2013.

Martin Joachim Kümmel. *Urindoiranische Grammatik*, volume III of *Grammatica Iranica (ed. Velizar Sadovski)*. Verlag der Österreichischen Akademie der Wissenschaften, 2014.

Romano Lazzeroni. Sanskrit. In Anna Giacalone Ramt and Paolo Ramat, editors, *The Indo-European Languages*, pages 98–124. Routledge, 1998.

Alexander Lubotsky. *Handbook of Comparative and Historical Indo-European Linguistics*, chapter The phonology of Proto-Indo-Iranian, pages 1875–1888. De Gruyter Mouton, 2018.

Arthur Anthony Macdonell. *A Vedic Grammar for Students*. Motilal Banarsidass Publishers, 2010.

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

Manfred Mayrhofer. *Sankrit-Grammatik mit Sprachvergleichenden Erläuterungen*. Walter de Gruyter, Berlin/New York, 3 edition, 1978.

Manfred Mayrhofer. *Etymologisches Wörterbuch des Altindoarischen, I. Band*. Carl Winter Universitätsverlag, Berlin/New York, 3 edition, 1992.

Manfred Mayrhofer. *Etymologisches Wörterbuch des Altindoarischen, II. Band*. Universitätsverlag C. Winter, Berlin/New York, 3 edition, 1996.

Thomas Oberlies. Asokan Prakrit and Pali. In George Cardona and Dhanesh Jain, editors, *The Indo-Aryan Languages*, pages 161–203. Routledge, 2003.

Felix Otter. *Grundkurs Sanskrit*. Hempen Verlag, 2017.

Helmut Rix. *Lexikon der indogermanischen Verben*. Ludwig Reichert Verlag, Wiesbaden, 2001.

Sergej Romaschko. Aus dem Leben eines Lautgesetzes – Das Grassmann'sche Gesetz, sein Ursprung und sein Schicksal. *Historiographia Linguistica*, 27:1–22, 2000.

Antonia M. Ruppel. *The Cambridge Introduction to Sanskrit*. Cambridge University Press, 2017.

Robert Schmitt-Brandt. *Einführung in die Indogermanistik*. A. Francke Verlag, Tübingen/Basel, 1998.

Andrew L. Sihler. *New Comparative Grammar of Greek and Latin*. Oxford University Press, New York/Oxford, 1995.

Andrew L. Sihler. *Language History*. John Benjamins Publishing Company, New York/Oxford, 2000.

Ulrich Stiehl. *Sanskrit-Kompendium*. Hüthig GmbH & Co. KG, 5 edition, 2011.

Oswald Szemerenyi. *Einführung in die vergleichende Sprachwissenschaft*. Wissenschaftliche Buchgesellschaft, Darmstadt, 3 edition, 1989.

Paul Thieme. Mitra and aryaman. *Transactions of The Connecticut Academy of Arts and Sciences*, 41:1–96, 1957.

Jakob Wackernagel. *Altindische Grammatik, Teil I*. Vandenhoeck u. Ruprecht, 1896.

Calvert Watkins. Proto-Indo-European: Comparison and reconstruction. In Anna Giacalone Ramt and Paolo Ramat, editors, *The Indo-European Languages*, pages 25–73. Routledge, 1998.

Alfred C. Woolner. *Introduction to Prakrit, 2. ed. Banarsidass Publishers (Delhi). [Reprint of 1928]*. Motilal Banarsidass Publishers, 1996. reprint from second edition 1928, published by.

Zentralinstitut für Sprachwissenschaft. *Etymologisches Wörterbuch des Deutschen*. Deutscher Taschenbuch Verlag, München, 2 edition, 1997.

Sabine Ziegler. *Klassisches Sanskrit*. Reichert Verlag, 2012.