Sanskrit as an Indo-European Language

Harald Wiese

HASP
HEIDELBERG ASIAN STUDIES PUBLISHING

Sanskrit as an Indo-European Language

Sanskrit as an Indo-European Language

Harald Wiese

HASP
HEIDELBERG ASIAN STUDIES PUBLISHING

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at http://dnb.dnb.de.

Published by Heidelberg Asian Studies Publishing (HASP), 2023

Heidelberg University / Heidelberg University Library
Heidelberg Asian Studies Publishing (HASP),
Grabengasse 1, 69117 Heidelberg, Germany
https://hasp.ub.uni-heidelberg.de

The electronic open access version of this work is permanently available on the website of Heidelberg Asian Studies Publishing: https://hasp.ub.uni-heidelberg.de
urn: urn:nbn:de:bsz:16-hasp-1238-3
doi: https://doi.org/10.11588/hasp.1238

ISBN 978-3-948791-7-66 (Softcover)
ISBN 978-3-948791-7-59 (PDF)

Contents

Foreword

Harald Wiese's book on "Sanskrit as an Indo-European Language" fills an urgent need in the field of Sanskrit-related materials. While scholarly books on this topic can indeed be found, his book is the first one to take the didactic challenges and opportunities seriously.

I have been teaching courses in Spoken Sanskrit for many years. Part of the success story behind Spoken Sanskrit courses lies in the pattern drill employed in the class room. The students learn by heart the perfect past participles like *gata*, *labdha*, *ūḍha*, and others. These and many other, often bewildering forms, just get into their ears and are quickly memorized without too much pain and effort. And that is fine, I think, because learning should be *kaṇṭhastha* (based in the throat, learned by heart) to a large extent.

Learning should also be *buddhistha*, an intellectual affair. Students like to understand the forms they are learning. And here, Harald Wiese's book is extremely useful. He explains how and why *gata* and *ūḍha* employ the zero grade of the verbal roots *gam* and *vah*, respectively. And why the suffix *ta* (clearly seen in *gata*) is also present in both *labdha* and *ūḍha*. Indeed, *ūḍha* is the perfectly regular past perfect participle of *vah*! This book deals with words and grammatical forms from an Indo-European point of view. The author explains certain words, their sound laws, sound changes, word derivation and their etymology with much clarity. This not only helps us to understand Sanskrit better but also to understand our mother tongues and their connection with Sanskrit with much clarity.

To give an example, the Sanskrit root *ad* (to eat) is historically related to both English *eat* and German *essen*. There are many such exciting examples which Wiese explains in his book in detail. I am tempted to give another example here that even certain grammar rules are also similar in Sanskrit and in German languages. For example in the case of remembering we use accusative case and genitive case in Sanskrit, and German retains the same as well. "I remember my mother" in Sanskrit would be "ahaṃ mātaraṃ (Acc.)/mātuḥ (Gen.) smarāmi" and in German we may say "Ich erinnere mich an meine Mutter (Acc.)" or "Ich denke an meine Mutter (Acc.)" or "Ich erinnere mich meiner Mutter (Gen.)".

The way Wiese explains certain topics such as word formation, Sandhi rules, rules about visarga, thematic and athematic verbal conjugations, rules on declensions, root nouns, desiderative, gerundive and other forms with much clarity, it will certainly be a great help for the students of Sanskrit and Linguistics to master Sanskrit.

I think that learning needs to bring pattern drill and intellect together and thus it should be both *kaṇṭhastha* and *buddhistha*. The Indo-European perspective brings exciting intellectual insights to students. Insights that may go unnoticed to students all over the world. I am sure this book will help the students of Sanskrit as well as linguistics (both Indian and European) to understand Sanskrit and some other European languages and their back-

ground better and will be an asset especially for the Sanskrit learners. Spoken Sanskrit and Sanskrit as an Indo-European Language seem perfect complements to me. That is why I highly recommend Harald Wiese's wonderful book and congratulate him for his hard and valuable work.

Sadananda Das
Institute of Indology and Central Asian Studies, Leipzig University, Germany

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[1], mentions "the intricacies and frustrations of *sandhi* and the other terrors of Sanskrit" inflicted on successive student generations. 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 (abbreviated by E) *eat* and New High German (NHG) *essen*. There was an Indo-European root $^*ed$ that branched out into all these words over some millennia. Even E *tooth* and NHG *Zahn* stem from $^*ed$ (or, taking the laryngeal perspective, $^*h_1ed$). Cross connections of this and other sorts might be as interesting for the Sanskrit newbie as for the more advanced student of Sanskrit.

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:

> "[...] the author would be pleased if he succeeded [....] in re-establishing the ties – loosened in recent decades – between linguistics and Sanskrit philology"[2]

While Wackernagel did put together the (in his time) state-of-the-art Indo-European outlook on Old Indic, 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 Sanskrit, 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.

[1] Goldman and Goldman (2011, p. xix)

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

However, readers interested in the current state-of-the-art Indo-Aryan or Indo-European phonology and morphology will not find this book best suited. They had better turn to new Wackernagels (of sorts) that have been written by Goto (2013), Kobayashi (2004), and Kümmel (2014). While my book may be considered a new Burrow (3rd edition, 1973), its purpose is mainly and predominantly a didactic one.

The knowledge of other Indo-European languages is not necessary. In particular, knowledge of Latin and Old Greek is not vital. Instead, Latin or Old Greek words found in Modern English are often cited. The focus is on Sanskrit, but briefly Middle Indic languages are also addressed. While Vedic grammar is ignored, Vedic vocabulary is occasionally mentioned. Accents (important in Vedic) are regularly ignored. German words, and more rarely and unsystematically, French, Italian, or Irish words are adduced. The reasons for including words are often rather subjective.

Thanks and apologies for not citing appropriately are due to the above-mentioned authors and also to many other authors[3] of textbooks/grammars/dictionaries/articles. Brugmann (2009, p. V)'s excuse holds true here also: "The procedure of stating in every single instance the authors dealing with them, and the first originator of the opinion I presented, seemed to me on the one hand not to be required by the purpose of the book, but on the other hand excluded due to lack of space."[4] This general practice is sometimes disregarded. I 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. Katharina Lotzen undertook the laborious work of producing the index. Maria Näther and Alexander Singer proved very efficient with LaTex and Lyx. Tyler Neill offered constructive criticism. Jan Warzok carefully read a later version.

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

Leipzig, April 2023 Harald Wiese

[3] In many different ways, Beekes (1995, 2010), Brugmann (2009), Burrow (2001), Clackson (2007), Dudenredaktion (2006), Dunkel (2014a,b), Fortson IV (2004), Hock (1991), Kluge (2002), Kroonen (2013), Kulikov (2017), Lazzeroni (1998), Lubotsky (1995, 2018), Macdonell (2010), Rix (2001), Schmitt-Brandt (1998), Sihler (1995, 2000), Szemerenyi (1989), de Vaan (2008), Watkins (1998), Zentralinstitut für Sprachwissenschaft (1997), Wiese (2010), Ziegler (2012), and, of course, Mayrhofer (1978, 1992, 1996) have been useful. With respect to Middle Indic, I have benefitted from Hinüber (1986), Masica (1991), Oberlies (2003), and Woolner (1996). Alas, I could not benefit from Lubotsky's eagerly awaited Etymological Dictionary of Proto-Indo-Iranian.

[4] "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."

A. Introduction

A.1. Historical highlights

The idea of this manual is to make Sanskrit easier to learn and to produce a deeper understanding of material already memorised, by taking the Indo-European perspective. The profit is twofold. First, Sanskrit is to be linked to other languages. Second, Sanskrit peculiarities can often be explained. In taking the Indo-European point of view, I am not undertaking anything new or innovative. 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 the 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 Sanskrit and Indian philosophy in Germany. He suggests a new renaissance. In the 15th and 16th centuries, the study of Greek language and culture grew prominent. Similarly, the Indian cultural heritage could 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 monograph, 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 suggest 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 pursued by August Schleicher (1821 - 1868), professor in Prague 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 visualise how languages evolve or 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 bunch of scholars 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 Fortson's own 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 Curtius. 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" (exceptionlessness of sound laws).

Ferdinand de Saussure

An important chapter for both Indology and Indo-European studies was written by Ferdinand de Saussure (1857-1913). The young Swiss student was in 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 Indic verbal classes. While his revolutionary ideas took quite a while to gain acceptance, laryngeal theory is well established 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 postulated 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 as the founder of modern linguistics, but that is a different story.

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 Basque, Estonian, Finnish, and Hungarian) 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 language trees. The Indo-European language tree is shown in figure A.1.

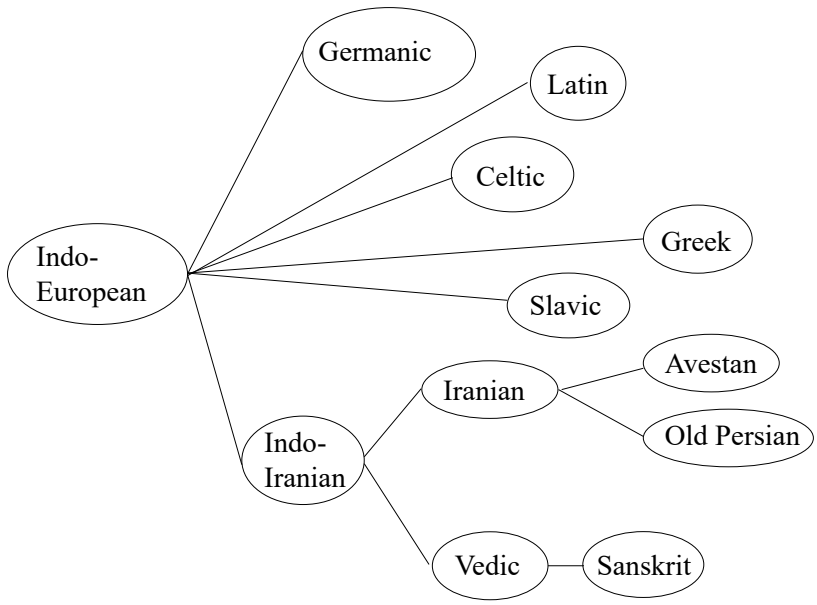

Figure A.1.: The Indo-European Language Tree

It shows the most important language families that stem from Indo-European. Zooming in on the Germanic branch, one obtains the language tree of figure A.2. Germanic itself is not attested, but Gothic comes close.

Of special relevance for this manual, is, of course, the Indo-Iranian subtree. Old Indic (often called Indo-Aryan elsewhere) can be Vedic or Classical Sanskrit. There are several Middle Indic languages, the oldest one being Pali which was primarily used in Buddhist scriptures. Other Middle Indic languages are Śaurasenī, Māghadhī, and Māhārāṣṭrī. These languages are normally called Prakrit or Prakrits. The sound laws that differentiate Middle Indic (MI) from Old Indic (OI) are complicated and differ between the Middle Indic languages. Pali (Pa.) is mostly used for Middle Indic examples, but sometimes also Prakrit (Pkt.). While Classical Sanskrit is not a predecessor of Pali or of (a) Prakrit, it is surely more conservative than these Middle Indic languages in most respects. However, one can find examples where Pali is more conservative than Vedic. Neither Vedic nor Sanskrit are predecessors of Pali. But they are close to a predecessor one tries to reconstruct. Many new Indic languages exist, such as Hindi, Bengali, Marathi, Gujarati, and others.

Just a few words on the (debatable) chronology of these langauges:

◇ The oldest Vedic texts are preserved in the Ṛgveda, roughly 1500-1000 before the common era (BCE),

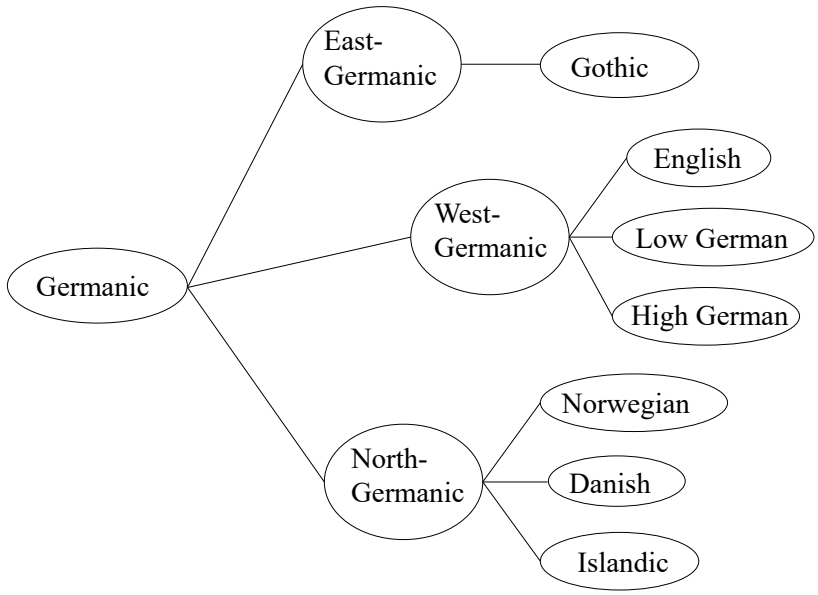

Figure A.2.: The Germanic Language Tree

- ◇ the period of classical Sanskrit spans from 500 BCE until 500 CE (common era) and reaches up to the present time,
- ◇ the Middle Indic period is sometimes dated 600 BCE until 1000 CE, while Apabhraṃśa develops later, as of 500 CE,
- ◇ the New Indic languages show their earliest traces from 1000 CE onwards.

A.3. Sound laws

The Junggrammatiker's dictum was the exceptionlessness or regularity principle:

> "All sound change, as far as it happens mechanically, takes place according to laws without exception, i.e., the direction of the sound movement is always the same for all members of a language community, except in the case of a dialectal split [...]"[5]

[5] "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 [...]"

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

The Junggrammatiker had a different view on the Indo-European vowel system than their teachers. August Pott and Georg Curtius assumed that the Indo-European language knew the 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 would tell under which conditions Indo-European *a* turned into Greek *a, e,* or *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 Indic (or Sanskrit).

As in the above example, arrows are employed 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 is reconstructed as *ūdher* (the asterisk * signals a reconstructed form).
- ◇ It developed into Old Indic *ūdhar*.
- ◇ In a parallel fashion (see figure 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 neither NHG *Euter* $\rightarrow$ E *udder* nor the inverse arrow hold. This is clear from figure A.2 above.
- ◇ Incidentally, I distinguish between "E" and "English". Words in the English language that result from Germanic sound laws are addressed by "E", while words without the involvement of Germanic sound laws are addressed by "English". Examples are loan words like *yoga* and *mathematics*. Similar differences hold between "Fr." versus "French" and "Lat." versus "Latin".

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. Criticism against the simple neogrammarian viewpoint has been raised from dialectology, sociolinguistics, and 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) summarises, "the neogrammarian regularity principle still remains a heuristically useful and important criterion for historical linguistic research." 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 memorise.

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 paradigmatic regularity. See 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".

The word "analogy" often refers to both kind of changes. Sometimes, (proportional) analogy is visualised by the following pattern:

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

where ? $= B$ is the "solution". Levelling can be depicted by

	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 *lert*s." Here, *alert* has been "misunderstood" as *a lert*.

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*, one can safely assume a noun *monkey*. This is called back-formation. Applying the same procedure (leaving out the indefinite article) to *a lert*, the noun *lert* is obtained. Indeed, back-formation is mostly used for wrong applications of these procedures, as in the following pattern:

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). Compare

◇ *sura* ("god") and

◇ *asura* ("demon")

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

a-dêva ("demon")	with negating *a* from:	*dêva* ("god")
just as		
asu-ra ("demon")	falsely as *a-sura* with negating *a* from:	*sura* ("god")

A.6. Borrowing

Many E words go back to IE ones, as *udder*:

$$\text{OI } \bar{u}dhar \quad \leftarrow \quad \text{IE } {}^{*}\bar{u}dher \quad \rightarrow \quad \text{E } udder \quad \sim \quad \text{NHG } Euter$$

Many other words are borrowed from other languages. Borrowings are indicated by "B". An example is "B English *plant*" or just "B *plant*" where *plant* has been borrowed from Lat. *planta.* A careful distinction is made between two types of expressions:

◇ "E *udder*" refers to an English word that has developed according to sound laws and goes back to Indo-European (or sometimes only Germanic).

◇ "B English *plant*" refers to a borrowing with only minor or late application of sound laws.

Similarly, words marked by "NHG" have been produced by the sound laws **NHG** and possibly **GER**. In contrast, "German" points to Modern German words that have not come about through applications of **NHG**.

A.7. Conventions

In this book, the convention used to quote nouns depends on the type of noun:

◇ Nouns where the stem and the nominative singular (nom. sg.) coincide:
- feminine nouns like *sênā* ("army")
- feminine nouns like *nadī* ("river")
- consonantal-stem nouns like *tapas* ("heat") or *havis* ("offering")

◇ Vocalic nouns other than the *sênā* 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 the nom. sg. marker *s* is added whenever appropriate

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

◇ Vocalic *a* adjectives like *dhūrta* ("cunning") without the ending

◇ Consonantal-stem *an* nouns:
- masculine *rāj-an* ("king")
- neuter *karm-an* ("act")

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

◇ Hybrid *tar*-nouns like masculine *nê-tar* ("leader")

◇ Hybrid kinship nouns:
- masculine *pit-ar* ("father")
- feminine *māt-ar* ("mother")

◇ Nouns ending in long diphthong:
- masculine or feminine *râi* ("wealth")
- masculine *glâu* ("moon")

With these conventions in place, genders need not always be indicated.
The meaning is indicated by quotation marks where

◇ "not going → tree" is employed rather than

◇ "not going" → "tree".

A.8. Overview

The rest of the book is structured along the following five chapters:

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.

Chapter “word formation”

This basic chapter introduces the concept of a verbal root and the different grades that a root can take. Then, in line with the grades, different word formations are introduced and explained in detail.

Chapter “conjugation”

The conjugation chapter introduces a verb’s tenses and modes. On the basis of the ten verbal classes, building patterns and endings are explained.

Chapter “declension”

Turning from verbs to nouns, the chapter on declensions tries to make sense of nouns and their endings.

Chapter “etymological dictionary”

The last chapter presents selected Sanskrit words which have interesting cognates in other languages. The focus is not on defending this or that reconstructed form, but to build a net of words from different Indo-European languages. The usual Indian rank order is obeyed in the dictionary. (In contrast, the extensive index pretty much uses the order of the Latin alphabet.)

A.9. Abbreviations

A.9.1. Cases

- ◇ abl. = ablative
- ◇ acc. = accusative
- ◇ dat. = dative
- ◇ gen. = genitive

- ◇ instr. = instrumental
- ◇ loc. = locative
- ◇ nom. = nominative
- ◇ voc. = vocative
- ◇ NVA = nom., voc., or acc.

A.9.2. Numbers

- ◇ sg. = singular
- ◇ pl. = plural

A.9.3. Genders

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

A.9.4. Languages

Germanic

- ◇ E = Modern English (**GER** and **NHG_E**)
- ◇ English = Modern English (not **GER**)
- ◇ Germ. = Germanic (**GER**)
- ◇ German = Modern German (not **NHG**)
- ◇ Gth. = Gothic (**GER**)
- ◇ NHG = New High German (**NHG** and possibly **GER**)
- ◇ NLG = New Low German (**GER**)
- ◇ OE = Old English (**GER**)
- ◇ OHG = Old High German (**GER** and most of **NHG**)

Indo-Aryan

- ◇ Hi. = Hindi
- ◇ MI = Middle Indic
- ◇ OI = Old Indic
- ◇ Pa. = Pali
- ◇ Pkt. = Prakrit
- ◇ Skt. = Sanskrit (only used in the form of "Skt./Pkt." for MI words)
- ◇ Ved. = Vedic

Others

- ◇ IE = Indo-European
- ◇ It. = Modern Italian, when based on Lat. or Latin
- ◇ Fr. = Modern French, when based on Lat. or Latin
- ◇ French = Modern French, when based neither on Lat. nor on Latin
- ◇ Lat. = Classical Latin (**LAT**)
- ◇ Latin = Classical Latin (not **LAT**)
- ◇ NIr. = New Irish
- ◇ OGr. = Old Greek
- ◇ OIr. = Old Irish
- ◇ OLat. = Old Latin
- ◇ Sp. = Modern Spanish, when based on Lat. or Latin

A.9.5. Sounds

- ◇ `+asp` = aspirated
- ◇ `+lab` = labial
- ◇ `+pal` = palatal
- ◇ `+v` = voiced

- ◇ `-asp` = unaspirated
- ◇ `-lab` = other than labial
- ◇ `-pal` = other than palatal
- ◇ `-v` = voiceless
- ◇ *C* = consonants
  - $C^{\texttt{+lab}}$ = labial consonants
  - $C^{\texttt{-lab}}$ = consonants other than labial ones
  - $C^{\texttt{+v}}$ = voiced consonants
  - $C^{\texttt{-v}}$ = voiceless consonants
  - $C^{\texttt{+asp}}$ = aspirated consonants
  - $C^{\texttt{-asp}}$ = unaspirated consonants
- ◇ *D* = dentals
  - $D^{\texttt{+v}}$ = voiced dentals
  - $D^{\texttt{-v}}$ = voiceless dentals
- ◇ *Di* = diphthongs
  - OI short diphtongs *ê/ay* (usually written *e/ay*)
  - OI long diphtongs *âi/āy* (usually written *ai/āy*)
  - MI/Pa./Pkt.: *ï* or *ü* (instead of *i* or *u*) after another vowel
- ◇ *Fg* = full-grade (vowel)
- ◇ *H* = laryngeals h_1, h_2, h_3
- ◇ *L* = liquids *r, l*
- ◇ *Lg* = lengthened-grade (vowel)
- ◇ *N* = nasals *ṅ, ñ, ṇ, n, m, ṃ*
- ◇ *P* = plosives (stops)
  - $P^{\texttt{+pal}}$ = palatal plosives
  - $P^{\texttt{-pal}}$ = plosives other than palatal ones
  - $P^{\texttt{+v}}$ = voiced plosives
  - $P^{\texttt{+v,-asp}}$ = voiced, unaspirated plosives
  - $P^{\texttt{-v}}$ = voiceless plosives

- ◇ R = resonants (L, N, SV)
- ◇ S = sibilants:
  - voiceless: $\acute{s}$, $\dot{s}$, s (palatal, cerebral, and dental, respectively)
  - voiced: $\acute{z}$, $\dot{z}$, z (for intermediate steps)
- ◇ SV = semivowels
- ◇ V = vowels
- ◇ $\bar{V}$ = long vowels
  - IE/Lat./OGr. $\bar{a}$, $\bar{\imath}$, $\bar{u}$, $\bar{e}$, $\bar{o}$
  - OI $\bar{a}$, $\bar{\imath}$, $\bar{u}$, $\hat{e}$, $\hat{o}$, $\bar{\dot{r}}$
  - MI/Pa./Pkt. $\bar{a}$, $\bar{\imath}$, $\bar{u}$, $\bar{e}$, $\bar{o}$
- ◇ $\breve{V}$ = short vowels
  - IE a, i, u, e, o, $\underset{\circ}{n}$, $\underset{\circ}{m}$, $\underset{\circ}{r}$, $\underset{\circ}{l}$
  - Lat./OGr. a, i, u, e, o
  - OI a, i, u, $\dot{r}$, $\dot{l}$
  - MI/Pa./Pkt. a, $\breve{e}$, $\breve{o}$
- ◇ Zg = zero-grade (vowel)
- ◇ $\dot{p}$ = voiceless interdental spirant

A.9.6. Sound laws

- ◇ $\boldsymbol{a\bar{a}}$ = IE to OI vowel changes (p. 21)
- ◇ **AFP** = consonants in **A**bsolute **F**inal **P**osition (p. 47)
- ◇ **ASh** = (Bartholomae's) **A**spiration **Sh**ift (p. 39)
- ◇ **BA** = **B**ackward **A**ssimilation (p. 41)
- ◇ **CCl** = simplification of **C**onsonant **Cl**usters (p. 46)
- ◇ **Cer*****n*** = **Cer**abralisation of ***n*** (p. 44)
- ◇ **Cer*****D*** = **Cer**abralisation of **D**entals (p. 44)
- ◇ **CpL** = **C**om**p**ensatory **L**engthening, in particular
  - **CpL*****dḱ*** for clusters ***dḱ*** (p. 54)

- **CpL*r*** for ***r*** (p. 53)
- **CpL*s*** for ***s*** (p. 53)
- **CpL*z*** for ***z*** (p. 50)
- **CpL__*an-in-ar*** in nominative singular after special suffixes (p. 54)

◇ **DA** = (Grassmann's) Old Indic **D**e**A**spiration (p. 40)

◇ **DIPH** = **DIPH**thong before vowel and before consonant (p. 24)

◇ **D*z*D** = ***z*** sprouting or vanishing between **D**entals (p. 49)

◇ **GER** = first consonant shift (from IE to **GER**manic) (p. 73)

◇ **IE__SY__*N*** = **SY**llabic **N**asals, representation in some IE languages (p. 69)

◇ **IE__SY__*L*** = **SY**llabic **L**iquids, representation in some IE languages (p. 70)

◇ **Lar** = **Lar**yngeal sound laws (p. 55), in particular

- **Lar__*CH***, relating to laryngeals after a consonant and before a vowel (p. 55)
- **Lar__*V***, lengthening or producing vowels in the absence of syllabic nasals or liquids (p. 30)
- **Lar__SY**, relating to laryngeals after syllabic nasals and liquids (p. 30)
- **Lar__MTh**, metathesis of a laryngeal and a semivowel (p. 31)

◇ **LAT** = **LAT**in sound laws, in particular

- **LAT__*DD*** = **LAT**in dental-plus-dental sequence (p. 73)
- **LAT__*f*** = **LAT**in ***f*** (p. 73)
- **LAT__*sr*** = **LAT**in ***r*** from IE ***s*** (p. 73)
- **LAT__*V*** = **LAT**in sound laws concerning vowels and diphthongs (p. 68)
- **LAT__*v*** = **LAT**in ***v*** from IE labiovelar g^w (p. 73)

◇ **LawOfMorae** = Middle Indic **Law of Morae** (p. 58)

◇ **Lg__*Ry*** = lengthened grade of ***vy*** and ***ny*** (p. 25)

◇ **L*o*** = (Brugmann) **L**engthening of IE ***o*** in open syllable (p. 35)

◇ **MET__*rSP*** = metathesis of a vowel with ***r*** in order to prevent the sequence ***rSP*** (p. 48)

◇ ***Ns*** = anusvāra of ***m*** or ***n*** before ***s*** (p. 49)

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

- **NHG_*V***, concerning vowels (p. 69)
- **NHG_*C***, concerning consonants (p. 74)
- **NHG_E**, where **N**ew **H**igh **G**erman is more conservative than **E**nglish (p. 77)

◇ **OGR** = **O**ld **GR**eek sound laws (p. 72)

◇ **OGR_DA** = **O**ld **GR**eek (Grassmann) **D**e**A**spiration (p. 73)

◇ **PPal** = **P**rimary **Pal**atalisation (p. 37)

◇ **RUKI** = cerebralisation of *s* (p. 43)

◇ ***rl*** = dialectal confusion of ***r*** and ***l*** (p. 48)

◇ **SI** = **S**yllable-**I**nitial assimilations (p. 45)

◇ **SIB** = **SIB**ilant clusters and palatal-sibilant clusters (p. 45)

◇ **SPal** = **S**econdary **Pal**atalisation (p. 38)

◇ ***sP(h)*** = Possible aspiration of ***P***losive after root-initial ***s*** (p. 49)

◇ ***SV*** = **S**emi**V**owel before vowel, vowel before consonant (p. 22)

◇ **SY_Conf** = **SY**llabic **Con**flict (p. 29)

◇ **SY_*N*** = **SY**llabic **N**asals, representation in OI (p. 28)

◇ ***sz*** = voiceless ***s*** and voiced ***z*** before plosives (p. 42)

◇ **VER** = **VER**ner's law (p. 78)

◇ **Vis** = **Vis**arga rules (p. 54)

◇ **VS** = **V**owel **S**andhi (p. 32)

◇ ***V+SV*** = emergence of semivowel after the corresponding vowel (p. 23)

A.9.7. Additional grammatical terms

◇ ac./ag. noun = action/agent noun

◇ adj. = adjective

◇ adv. = adverb

◇ athem. = athematic

◇ ātm. = ātmanêpada

- ◇ augm. = augment
- ◇ B = borrowing, i.e., foreign or loan word
- ◇ cons. = consonant, consonantal
- ◇ f.g. = full grade
- ◇ fut. = future tense
- ◇ impf. = imperfect
- ◇ imper. = imperative
- ◇ ind. = indicative
- ◇ lev. = levelling
- ◇ l.g. = lengthened grade
- ◇ 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. = present (tense)
- ◇ pres. tense = present tense
- ◇ pret. = preterite, i.e., imperfect, aorist, or perfect
- ◇ PRII = present indicative, imperfect, and imperative
- ◇ prim. end. = primary ending
- ◇ pron. = pronoun
- ◇ prop. = proposition
- ◇ redup. = reduplicated

- ◇ sec. end. = secondary ending
- ◇ them. = thematic
- ◇ u.at. = unattested
- ◇ v. = verb
- ◇ voc. = vocalic
- ◇ w.-i. = word-initial
- ◇ w.-f. = word-final
- ◇ z.g. = zero grade
- ◇ $\sqrt{}$ = OI root (typically in zero grade) or IE root (typically in full grade)
- ◇ $\varnothing$ = no ending, no phoneme
- ◇ $\rightarrow$ = "develops into"
- ◇ $\leftarrow$ = "originates from"
- ◇ $\sim$ = "cognate with"

A.9.8. Other abbreviations

- ◇ BCE = before the common era
- ◇ CE = common era
- ◇ p. = page
- ◇ pp. = pages
- ◇ sec. = second
- ◇ s.v. = sub verbo (i.e., dealt with in the dictionary chapter)

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	$\bar{a}$	$\bar{e}$	$\bar{\imath}$	$\bar{o}$	$\bar{u}$

Remember the abbreviations

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

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, SV), where semivowels (SV) are explained in the following subsection
- ◇ S = sibilants: voiceless s

The Indo-European plosives (P) can be depicted in a table, where voiceless is abbreviated by `-v` and voiced by `+v`. Similarly, `+asp` and `-asp` point to aspirated and unaspirated plosives, respectively.

	-v/-asp	+v/-asp	+v/+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	$g^w h$

◇ 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 $g^w h$. k^w might have been pronounced similar to w.-i. E *queen*.

◇ The IE palatal sounds were pronounced as k together with a y-sound. They are indicated by $\acute{k}$ 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. Old Indic 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*.

B.1.3. Semivowels and syllabic nasals and liquids

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

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

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

B.1.4. Laryngeals

Now, the so-called laryngeals need to be addressed. Since laryngeal theory is very helpful for understanding and learning Sanskrit, it will be applied (most of the time). 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. In that early stage, Indo-European did not know the vowel *a*. Vowel *o* was only present as the result of qualitative ablaut (see section B.2.4). Beyond this instance of qualitative ablaut, vowels *a* and *o* developed from *e* under the influence of an appropriate laryngeal. Most historical linguists 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 summarised below by the sound laws beginning with **Lar.** The capital-letter *H* without any index is employed whenever 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 work with laryngeal theory in one form or another.[6] 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 Indic *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 in OI 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 Indic *a*, short and long, respectively:

aā	IE $a/e/o$	$\rightarrow$	OI a
	IE $\bar{a}/\bar{e}/\bar{o}$	$\rightarrow$	OI $\bar{a}$

[6] See the collection of articles in Bammesberger (1988), where some authors express their critical distance.

Note that bold-faced abbreviations refer to sound laws. See pp. 14. Examples for IE *e* abound:

◇ The Indo-European word for "honey" is

$$\text{IE } {}^*\textit{medhu} \quad \rightarrow \quad \begin{cases} \text{OI } \textit{madhu} \\ \text{OGr. } \textit{methu} \rightarrow \text{B } \textit{methane} \end{cases}$$

◇ The "middle one" is expressed by

$$\text{IE } {}^*\textit{medhyo} \quad \rightarrow \quad \begin{cases} \text{OI } \textit{madhya} \\ \text{OGr. B } \textit{Meso-potamia} \\ \text{Lat. } \textit{medius} \end{cases}$$

For IE *o*, one can point to

$$\text{IE } {}^*\textit{ovi/h}_3\textit{evi} \quad \rightarrow \quad \begin{cases} \text{OI } \textit{avi} \\ \text{Lat. } \textit{ovi} \end{cases}$$

As an example for long vowels, consider

$$\text{IE } {}^*\textit{r\=e\acute{g}} \quad \rightarrow \quad \begin{cases} \text{OI } \textit{r\=ajan} \\ \text{Lat. } \textit{r\=ex} \end{cases}$$

B.2.2. Semivowels

Along with the vowels *a, e,* and *o*, the Indo-European language as well as Sanskrit know the semivowels *i* and *u*. They obey the sound law:

SV

$$\begin{aligned} \text{IE } i \quad &\rightarrow \quad \text{OI} \begin{cases} i, & \text{before consonant} \\ y, & \text{before vowel} \end{cases} \\ \text{IE } u \quad &\rightarrow \quad \text{OI} \begin{cases} u, & \text{before consonant} \\ v, & \text{before vowel} \end{cases} \end{aligned}$$

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

◇ with *i*:

- *phalāni*, but *phalāny akhādat* ("he ate fruit")
- *gacchāmi*, but *gacchāmy aham* ("I go")

◇ 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”)

SV also shows up in these examples:

◇ *anv-artha* (“appropriate”) ← *anu* (“along”) + *artha* (“purpose, sense, wealth”)

◇ *vy-artham* (“in vain”) ← *vi* (“apart, away”) + *artha* (“purpose, sense, wealth”)

◇ *āśv-aśva* (“to have fast horses”) ← *āśu* (“fast”) + *aśva* (“horse”)

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

◇ *nārī âikṣata* → *nāry âikṣata* (“the woman saw”)

◇ *bhv-ādi-gaṇa* (“*gaṇa* consisting of *bhū* etc.”) ← *bhū* (“to be”) + *ādi* (“beginning”) + *gaṇa* (“cohort, flock, word group”, see pp. 85)

Thus, one obtains the rules

$$\begin{array}{lcll} \text{IE } i/\bar{\imath} & \rightarrow & \text{OI} & \begin{cases} i/\bar{\imath}, & \text{bef. consonant} \\ y, & \text{bef. vowel} \end{cases} \\ \text{IE } u/\bar{u} & \rightarrow & \text{OI} & \begin{cases} u/\bar{u}, & \text{bef. consonant} \\ v, & \text{bef. vowel} \end{cases} \end{array}$$

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”) with acc. sg. *dhiy-a-m* (not u.at. alternative *dhyam*).

◇ *bhū* f. (“earth”) with acc. sg. *bhuv-a-m* (not u.at. *bhvam*).

This change (see the first two lines in the sound law below) prevents awkward vowel clusters:

				example
V+SV	*PīV*	→	*PiyV*	*dhiy-a-m*
	PūV	→	*PuvV*	*bhuv-a-m*
	CRiV	→	*CRiyV*	*mriy-a-tê*
	CRuV	→	*CRuvV*	*ā-pnuv-an-ti*

The last two lines may have a similar motivation. Note that 4. class verbs and passive forms are built with the *ya* suffix. 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 semivowel *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 ***SV*** and ***V+SV***:

				example
SV	*VRiV*	→	*VRyV*	*a-vy-aya*
	VRuV	→	*VRvV*	*anv-artha, kur-v-an-ti*
V+SV	*CRiV*	→	*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 *RiV* or *RuV* are preceded by a (**bold**) vowel so that one obtains the corresponding semivowel. In contrast, ***m**r-iy-a-tê* and *ā**p**-nuv-an-ti* exhibit the same clusters *RiV* or *RuV*, but they follow a (**bold**) consonant. Therefore, one does not obtain sound law ***SV*** but ***V+SV***. Finally, note that ***V+SV*** is also applied if *RuV* occurs word-initial as in *nuv-an-ti* (p. 178).

B.2.3. Diphthongs

Remember that IE *a,* *e,* and *o* coalesce into OI *a.* Nevertheless, *e* and *o* exist also in Sanskrit, but they go back to Indo-European diphthongs:

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

See the following summary of the diphthong sound laws:

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 my transliteration of Sanskrit words does not always conform with the usual one:

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, sound law **DIPH** (the first two lines) is helpful to distinguish between *nêtar* ("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 mostly
→ *sarva iti* (*y* is weak and drops here between vowels)

With respect to long diphthongs, **DIPH** (the last two lines) explains why long *ā* results from the diphtongs *âi* and *âu*. Consider

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

and

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

Finally, an extra rule for lengthened grade (not within a root) is needed. It concerns OI word-initial clusters *viV* or *niV*. One might be tempted to apply **DIPH** and would then obtain *vāyV* or *nāyV*, respectively. However, the rule for lengthened grade of the resonant+*y* cluster is as follows:

Lg__*Ry*	OI lengthened grade of *vyV*	→	OI *vâiyV*
	OI lengthened grade of *nyV*	→	OI *nâiyV*

Important examples for lengthened grades of these prepositional prefixes *vi* and *ni* are

◇ *vyākaraṇa* (“grammar”) versus *vâiyākaraṇa* (“relating to grammar”)

◇ *nyāya* (“rule, norm”, one of the six philosophical systems) versus *nâiyāyika* (“relating to *nyāya* philosophy”)

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, Indo-European roots in full grade always contained the vowel *e* (that will become *a* in Sanskrit). Within Indo-European, this *e* can undergo two types of gradation (see also figure B.1):

◇ quantitative ablaut:
- *e* may be lost (zero grade).
- *e* itself is the normal grade (full grade).
- *e* may become *ē* (lengthened *e*-grade).

◇ qualitative ablaut:
- *e* may be become *o* (*o*-grade, full grade).
- Finally, the lengthened *o*-grade *ō* (which may also be considered a quantitative ablaut) sometimes occurs.

Vowel gradation in Sanskrit

In Sanskrit, *e*/*o* and *ē*/*ō* coalesce into *a* or *ā*, depending on whether they are short or long (sound law ***aā*,** p. 21). Therefore, the traditional Indian grammarians did not consider the qualitative ablaut. Instead, they taught the three-fold distinction:

◇ svara (this is our zero grade)

◇ guṇa (normal grade)

◇ vṛddhi (lengthened grade)

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

Beautifully, vowel gradation is pretty transparent in Sanskrit. That is why a firm grasp of its workings is indispensable. Importantly (and true cum grano salis):

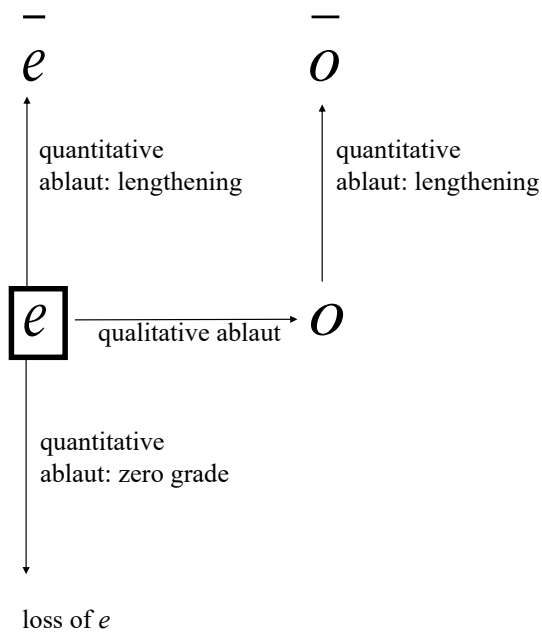

Figure B.1.: Indo-European Vowel Gradation (Ablaut)

◇ Strong forms (in the nominal declension as well as in the verbal conjugation, in particular the athematic classes) 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 Sanskrit for "to be awake". In Indo-European times, *ô* went back to *eu* before consonants (**DIPH**, p. 24). Also in Indo-European times, the *e* was dropped to obtain the zero grade *budh* (in fact, IE **bhudh* but that is another story). Certainly not *bvdh* because syllables need a vowel (p. 20).

A second example: "remember" in Sanskrit is

smṛ	the OI root in zero grade
smar-a-ti	the 3. pers. sg. pres. ind. in f.g. (see pp. 10)

In the zero grade, without *a* (representing IE *e*), one does not have *smar* but *smṛ*. For example, the past perfect participle (PPP) is normally formed from the zero grade, here *smṛ-ta* ("remembered"). The dot under the *r* indicates that *ṛ* is syllabic, i.e., it has vowel quality. Indo-European syllabic *r* is denoted by a larger circle: IE *r̥* (p. 20).

A last example concerns the nasals. OI *nam* ("to bow") is in the full grade. The PPP is *nata* which goes back to IE *nm̥to.* This points to an important sound law:

SY__N

IE $\underset{\circ}{n}C$	$\rightarrow$	OI aC
IE $\underset{\circ}{m}C$	$\rightarrow$	OI aC
IE $\underset{\circ}{n}V$	$\rightarrow$	OI anV
IE $\underset{\circ}{m}V$	$\rightarrow$	OI amV

The vowel-gradation table

IE and OI vowel gradations can now be summarised in one table:

	just e	semivowel y	semivowel v
z.g.	IE - $\rightarrow$ OI -	IE $i \rightarrow$ OI i	IE $u \rightarrow$ OI u
f.g.	IE $e \rightarrow$ OI a (***a ā***)	IE $ei \rightarrow$ OI $ê/ay$ (**DIPH**)	IE $eu \rightarrow$ OI $ô/av$ (**DIPH**)
l.g.	IE $ē \rightarrow$ OI $ā$ (***a ā***)	IE $ēi \rightarrow$ OI $âi/āy$ (**DIPH**)	IE $ēu \rightarrow$ OI $âu/āv$ (**DIPH**)

	r	n
z.g.	IE $\underset{\circ}{r} \rightarrow$ OI $\underset{\cdot}{r}$	IE $\underset{\circ}{n} \rightarrow$ OI a (**SY__N**)
f.g.	IE $er \rightarrow$ OI ar (***a ā***)	IE $en \rightarrow$ OI an (***a ā***)
l.g.	IE $ēr \rightarrow$ OI $ār$ (***a ā***)	IE $ēn \rightarrow$ OI $ān$ (***a ā***)

Look at a few other examples about ablaut laws:

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

◇ OI *i* ("to go") has full grade *ê-ti* ("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 lengthened grade vṛddhi goes back to *vṛdh, vardh-a-tê* ("to grow"). Funnily, *vṛd-dhi* is an example of the zero grade.

◇ Lat. *mens, mentis* (known from borrowed or foreign word *mental*) is cognate with Sanskrit zero grades *mati* ("thought, idea") and the past participle *mata*, where *a* stems from syllabic $\underset{\circ}{n}$ (**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. 71 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. Restricting attention to short syllabic nasals and liquids, the rule for syllabic nasals can be written as

IE_SY_*N* IE $\underset{\circ}{n}/\underset{\circ}{m}$ → OI { *an/am* bef. vowel; *a/a* between consonants

Consider the OI examples *an-anta* ("without end") and *a-gatika* ("without way out"), respectively. For syllabic liquids, the sound law reads

IE_SY_*L* IE $\underset{\circ}{r}/\underset{\circ}{l}$ → OI { $\underset{\circ}{r}$ or $\underset{\circ}{l}$ (!) between cons.; *ur/ur* before vowels, after labials; *ir/ir* (?) before vowels, not after labials

Examples are presented on pp. 69. Laryngeals affeccted these developments in particular manners as can be seen on pp. 30.

B.2.6. Resolution of syllabic conflicts

Sometimes, it may be unclear which sound is to become syllabic. For example, 3. pers. pl. (!) pres. ind. *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 u.at. *karanbhis* (p. 249).

This rule can be applied several times. Consider *yuv-a-ti* from (something like) IE *yuv-*$\underset{\circ}{n}$*-ti*, where, from right to left, the following development might be postulated:

IE **yuv-*$\underset{\circ}{n}$*-ti*
→ *yuv-a-ti (***SY_Conf** with respect to $\underset{\circ}{n}$)
→ *yu-v-ati (**SV*** with respect to *v)*
→ *y-u-vati (***SY_Conf** with respect to *u*)
→ *y-uvati (**SV*** with respect to *y)*

B.2.7. Laryngeal sound laws

The sound laws

Laryngeals did not survive in OI as such. 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 $h_1e/h_2e/h_3e$	$\rightarrow$	IE $e/a/o$
	IE $iH/uH/eH/oH$	$\rightarrow$	$\bar{\imath}/\bar{u}/\bar{a}/\bar{a}$
	IE $eiH/euH/\bar{e}iH/\bar{e}uH$	$\rightarrow$	IE $ei/eu/\bar{e}i/\bar{e}u \rightarrow$ **DIPH**
	IE CHC	$\rightarrow$	CiC or CC (unclear conditions)

The first line is understandable from pp. 20. 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 *bhav-i-tum* (the laryngeal becomes *i* between consonants, **Lar_*V*** fourth line)

In contrast to the sound law IE $CHC \rightarrow CiC$, laryngeals are sometimes dropped without apparent trace, as in *da-dh-mas* ("we set") from IE $^*de\text{-}dhh_1\text{-}mes$. The conditioning factors are difficult to discern. Compare s.v. *dā* ("to bind") $\leftarrow$ IE $^*deH$ with the two zero grades

- ◇ *d-ya-ti* $\leftarrow$ IE $^*dH\text{-}ye\text{-}ti$ and
- ◇ *a-di-ti* $\leftarrow$ IE $^*\underset{\circ}{n}\text{-}dH\text{-}ti$

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

Lar_SY	IE $C\underset{\circ}{n}HC$	$\rightarrow$	$C\bar{a}C$
	IE $C\underset{\circ}{m}HC$	$\rightarrow$	$C\bar{a}mC$ (or $C\bar{a}C$)
	IE $C\underset{\circ}{m}HV$	$\rightarrow$	$CamV$
	IE $C^{\texttt{+lab}}\underset{\circ}{r}H$	$\rightarrow$	$C\bar{u}r$
	IE $C^{\texttt{-lab}}\underset{\circ}{r}H$	$\rightarrow$	$C\bar{\imath}r$

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

◇ 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 one regularly obtains

◇ zero grade OI PPP *jā-ta* ← *ǵn̥H-to* according to sound law IE $C\underset{\circ}{n}H \rightarrow C\bar{a}$,

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

◇ full grade *jan-i-tar*, where the laryngeal turns into *i* between the consonants *n* and *t*.

The only "problem" may be the root *jan* itself. However, would you prefer to memorise *jā, jāyatê* instead of *jan, jāyatê*?

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, reconsider the table from pp. 28, but here with laryngeals:

	just *e*+*H*	semivowel *y*+*H*	semivowel *v*+*H*
zero gr.	IE *CHC* → OI *CiC* (also *CC*) IE *CHV* → OI *CV*	IE *iH* → OI *ī*	IE *uH* → OI *ū*
full gr.	IE *eH* → OI *ā*	IE *eiH* → OI *ê/ay*	IE *euH* → OI *ô/av*
length. gr.	IE *ēH* → OI *ā*	IE *ēiH* → OI *âi/āy*	IE *ēuH* → OI *âu/āv*

	r+*H*	*n*+*H*
zero gr.	IE $C^{\texttt{+lab}}\underset{\circ}{r}H \rightarrow$ OI *Cūr* IE $C^{\texttt{-lab}}\underset{\circ}{r}H \rightarrow$ OI *Cīr*	IE $C\underset{\circ}{n}H \rightarrow$ OI *Cā*
full gr.	IE *erH* → OI *ar*	IE *enH* → OI *an*
length. gr.	IE *ērH* → OI *ār*	IE *ēnH* → OI *ān*

In Sanskrit grammar books, one often encounters "*sêṭ* roots". The word *sêṭ* derives from

◇ OI *sa* (“with”) and

◇ *iṭ* (which is the usual manner in which traditional Indian grammarians refer to the vowel *i*)

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

Many of the *sêṭ* roots ended in a laryngeal, like OI *bhū* or *jan*. In some grammatical forms, *i* is a reflex of the laryngeal (see the infinitives *bhav-i-tum* or *jan-i-tum*). Roots without *i* are “*an-iṭ* roots”, where *an-iṭ* ← *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. Vowel 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 Indic. For these, the advantage of the modified transliteration will again be obvious:

VS	OI $\breve{V}/\bar{V}$ + $\breve{V}/\bar{V}/SV$	→	OI $\bar{V}$
	OI $a/\bar{a}$ + $i/\bar{\imath}$	→	OI $\hat{e}$
	OI $a/\bar{a}$ + $u/\bar{u}$	→	OI $\hat{o}$
	OI $a/\bar{a}$ + $\hat{e}$	→	OI $\hat{a}i$
	OI $a/\bar{a}$ + $\hat{o}$	→	OI $\hat{a}u$
	pret. augment a + $i/\bar{\imath}$	→	OI $\hat{a}i$
	pret. augment a + $u/\bar{u}$	→	OI $\hat{a}u$

VS rules partly contradict the IE-OI sound laws **DIPH** (p. 24). This is no problem because the latter refer to the development from Indo-European to Old Indic, while the former describe inner-Indic sound changes.

Consider the fourth line of **VS** and *atraiva* (as the standard spelling goes):

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

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

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

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

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

or

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

or

dêva-īśvara (compound, without vowel sandhi)
→ *dêvêśvara* ($a + \bar{\imath} = \hat{e}$)

or

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

or

a-va-uc-a-t (aorist "he spoke", without vowel sandhi)
→ *a-vôc-a-t* ($a + u = \hat{o}$)

Against the above rules, if the preterite augment short (!) *a* precedes *i/ī/u/ū*, one does not observe *ê* or *ô*, but *âi* and *âu*, respectively (see the last two lines of **VS**). Examples:

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

or

têna uktam ("he said", without vowel sandhi) → *tênôktam* (**VS** 3. line)
but *a-uṣ-ma* ("we wished", without vowel sandhi) → *âuṣ-ma* (**VS** 7. line)

In some aorist forms, we observe the same phenomenon, as in *âiṣīt* ("he wished") from root *iṣ*.
For the first five lines of **VS**, many additional examples are easily found:

a/ā + *a/ā* → *ā* (VS 1. line)

◇ *jalāśaya* (“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*

◇ *rāmāyaṇa* (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* (VS 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* (VS 1. line)

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

◇ *bāhūtkṣêpam* (“having thrown up ones arms”) ← *bāhu* (“arm”) + *ud* (preposition, “up”) + full grade of *kṣip* (“to throw”) + gerund suffix *am* (pp. 114)

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

a/ā + *i/ī* → *ê* (VS 2. line)

◇ *sam-upêta* (“provided with”) ← *sam* + *upa* + *i-ta* (PPP of *i*)

◇ *sêṭ* (“with *i*”) ← *sa* (“together with”) + *iṭ* (traditional expression for OI *i*)

◇ *vêṭ* (“with or without *i*”) ← *vā* (“or”) + *iṭ* (traditional expression for OI *i*)

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

a/ā + *u/ū* → *ô* (VS 3. line)

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

◇ *hitôpadêśa* (name of a fable collection, "instruction on well-being") ← *hita* ("well-being", 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* (VS 4. line)

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

a/ā + *ô* → *âu* (VS 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* m. ("being of superior strength") ← *uttama* ("highest, best") + *ôjas* n. ("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

$$\textbf{L}o \qquad \text{IE } oCV \quad \rightarrow \quad \text{OI } \bar{a}CV$$

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 IE vowels *a, e*, and *o* turn into OI *a*.

◇ Second, the syllable has to be open, i.e., 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. Consider four classes of examples: First, 1. pers. pl. forms like *bhar-ā-mas* ← IE **bher-o-mes* show the long $\bar{a}$ before m in an open syllable. (However, 1. pers. sg. forms like *bharāmi* do 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, causatives (with causative marker IE o) do also sometimes show long $\bar{a}$, this time before the liquid r:

	IE **mor-ey-e-ti* ("he makes die, he kills")	→	*mār-ay-a-ti*
but	IE **ǵonH-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, compare

	1. pers. sg.		3. pers. sg.	
√	IE	OI	IE	OI
kṛ	*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. See OI *pra* ← IE **pro* and OI *sa* ← IE **so.*

B.3. Consonants

B.3.1. Old Indic consonants

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

	`-v/-asp`	`-v/+asp`	`+v/-asp`	`+v/+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, voiceless (abbreviation: `-v`) and voiced (`+v`) representatives, both aspirated (`+asp`) and unaspirated (`-asp`), are found. These sounds are stops or plosives because the air is stopped before it is finally released in an explosive manner. The fifth column hosts the corresponding nasals and the sixth column the sibilants.

B.3.2. Primary and secondary palatalisation

Reconsider a part of the IE table of plosives:

	`-v/-asp`	`+v/-asp`	`+v/+asp`
velars	*k* (**SPal**?)	*g* (**SPal**?)	*gh* (**SPal**?)
palatals	$\acute{k} \rightarrow$ OI *ś* (**PPal**)	$\acute{g} \rightarrow$ OI *j* (**PPal**)	$\acute{g}h \rightarrow$ OI *h* (**PPal**)
dentals	*t*	*d*	*dh*
labials	*p*	*b*	*bh*
labio-velars	k^w (**SPal**?)	g^w (**SPal**?)	$g^w h$ (**SPal**?)

Dentals and labials are basically unaffected by IE-OI sound changes. Both the IE table (see p. 20) and the OI table of plosives have palatals in their second rows. The development from IE palatals to OI ones is called primary palatalisation:

PPal	IE $\acute{k}V$	$\rightarrow$	OI *śV*
	IE $\acute{g}V$	$\rightarrow$	OI *jV*
	IE $\acute{g}hV$	$\rightarrow$	OI *hV*
but **SIB** (p. 45)	IE $\acute{k}s$/IE $\acute{g}s$	$\rightarrow$	OI $ks \rightarrow kṣ$ (***RUKI***)
	IE $s\acute{k}$	$\rightarrow$	OI *cch*
but **BA**	IE $\acute{k}D^{-\mathtt{v}}$	$\rightarrow$	OI $kD^{-\mathtt{v}}$
but ***sz***	IE $\acute{g}P^{+\mathtt{v}}$	$\rightarrow$	OI $zP^{+\mathtt{v}}$
	IE $\acute{g}P^{-\mathtt{v}}$	$\rightarrow$	OI $sP^{-\mathtt{v}}$

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

$$\text{IE } \acute{k}\underset{\circ}{m}tóm \quad \rightarrow \quad \begin{cases} \text{OI } \acute{s}atám \\ \text{OGr. } he\text{-}katon \\ \text{Lat. } centum \\ \text{Gth. } hund \end{cases}$$

or the one for "*knee*":

$$\text{OI } jānu \quad \leftarrow \quad \text{IE } {}^*\acute{g}enu/\acute{g}onu \quad \rightarrow \quad \text{Lat. } genu \quad \sim \quad \text{E } knee$$

The following 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 *er-heischen* ("to ask for, to demand")
- ◇ *gam, gacchati* ("to go") ∼ OGr. *baskō* ← IE $^*g^w\underset{\circ}{m}$-$s\acute{k}$
- ◇ *pracch, pṛcchati* ∼ NHG *forschen* ∼ Lat. *pōscere, pōscō* ("to claim, to demand") ← IE $^*p\underset{\circ}{r}\acute{k}$-$s\acute{k}$ (where **CCl** gets applied before IE $s\acute{k}$ → OI *cch*)

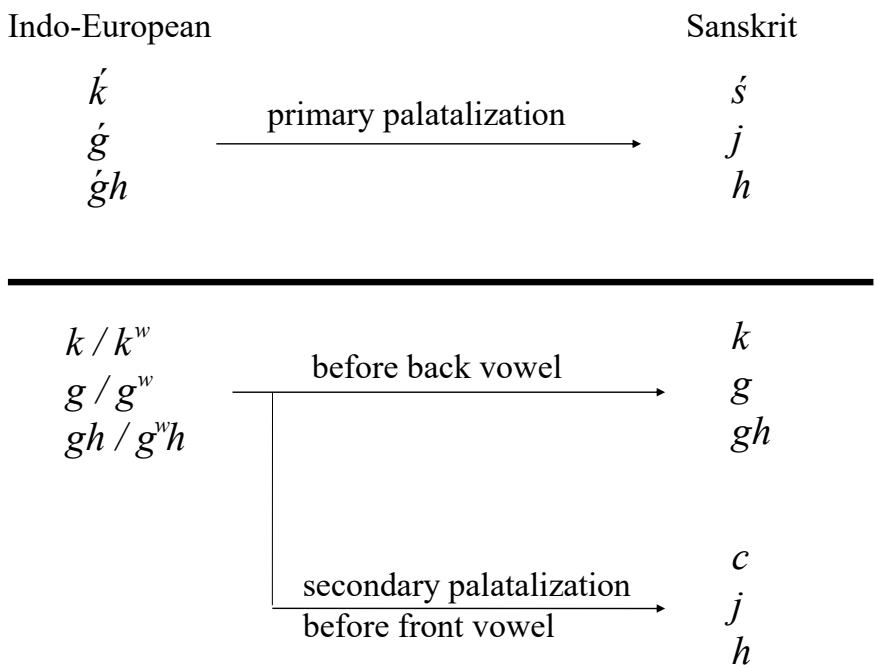

Figure B.2.: Primary and secondary palatalisation

Later on, within the Indo-Iranian language group, secondary palatalisation (**SPal**) set in. While **PPal** invariably occurs, **SPal** depends on whether an IE (!) front vowel (IE *e* or *i*) follows. Figure B.2 on p. 38 summarises the most important palatalisation laws. Secondary palatalisation is most clearly seen in reduplicated forms, for example in the reduplicated perfect:

	3. pers. sg.	
√	IE	OI
kṛ	*ke-kor-e*	*ca-kār-a*
gam	g^we-g^wom-*e*	*ja-gām-a*

Additional examples for secondary palatalisation are provided by

◇ OI *ca* ← IE $*k^we$ → Lat. *que*

◇ OI *jīva* ← IE $*g^wīvo$ (“living”) → Lat. *vīvus*

◇ OI *jahi* ← IE $*g^wh\underset{\circ}{n}$-*hi*, which is difficult (see p. 176)

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 earned 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**) → *k-ṣ* (**RUKI**)
	IE *dh-s/th-s*	→	*d-s/t-s* → OI *t-s* (**BA**)
	IE *bh-s*	→	*b-s* → OI *p-s* (**BA**)

Some PPPs exhibit both aspiration shift and forward assimilation (voiceless *t* becoming voiced *d* which is then aspirated):

◇ *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 sibilants do not exist in Sanskrit. Therefore, two problems are encountered:

◇ 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 3. pers. sg.

IE **lebh-sy-e-toi* (f.g. with future in *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. 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 $C^{+\mathrm{asp}}VC^{+\mathrm{asp}}(V)$ → OI $C^{-\mathrm{asp}}VC^{+\mathrm{asp}}(V)$

Reduplicated forms provide examples.

◇ From OI *bhū* ("to be"), one obtains the perfect *ba-bhūva* ("he was").

◇ Verbs of class 3 are reduplicated and provide 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:

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

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**).

B.3.4. Assimilations

Introductory remark

All languages have assimilation rules. In the context of the Old Indic 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 cerebralisation. 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 palatalise or dentalise the preceding sound), a stalemate results: no assimilation takes place in *ṣaṭ-cakra* (“six chakras”) or *ṣaṭ-triṃśat* (“thirty-six”).

Backward assimilations

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

BA

motivation	example
voicelessness	*yuk-ta* ← IE **yug-to* *tat kamalam* ← *tad* + *kamalam*
voice	*grāmād vanam* ← *grāmāt* + *vanam*
nasalising of dentals	*tan mitram* ← *tad* + *mitram* *un-mārga m.* (“a wrong or evil way”) ← *ud-mārga* *annam* ← *ad-nam* (OI root *ad*) *ṣaṇ-māsa m.* (“period of six months”) ← *ṣaṭ-māsa*
palatalisation	*tac chrutvā* ← *tad* + *śrutvā* *uccarati* ← *ud-carati*
dentalisation	PPP *śrānta* ← **śrāmta* ← IE **kr̥̊mH-to*

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

Backward assimilation: *sz* soundlaw

For intermediate steps, three so-called ***sz*** laws are needed. *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. 50. An example for the third law, is provided by PPP *iṣ-ṭa* of OI *yaj* ("to sacrifice"):

	IE **iǵ-to* (z.g. with PPP marker *to*)
→	*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* (***Ns***)
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. 53). 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. Consider these main classes:

1. Aspiration shift **ASh** (p. 39):

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

2. Cerebralisation:
   - ◇ of *s* after *i* and other sounds (**RUKI**, p. 43) as in loc. pl. *nadīṣu* of *nadī* ("river")
   - ◇ of dentals after *ś*, *ṣ,* or *ẓ* (**Cer*D***, p. 44), for example, PPP *dṛṣ-ṭa* of OI root *dṛś* ("to see")

◇ of *n* after *r* (**Cer*n***, p. 44) as in *maraṇam* (“death”)

3. Palatalisation of *n* after *j*:
   ◇ The stem for “king” is *rāj-an* and the instr. sg. is *rāj-ñ-ā.*
   ◇ The OI root *jñā* goes back to IE $^*ǵneh_3$ (“to know”).

Forward cerebralisation: RUKI

One famous cerebralisation law is called after the sounds that precede OI *s*, leading to cerebralisation. 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. 24) 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*

The first line of the **RUKI** sound law is a summary of the above developments:

RUKI	OI *r/ṛ/u/ô/k/i/ê* + *s/z* not w.f., not bef. P^{+v}	→	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 *duḥ-kham* (“misfortune”) does not fit the first line.

The second line seems clear from an example like *vaś* (“to wish”) with 2. pers. sg. pres. ind. *vak-ṣi* ← IE **veḱ-si.*

The third line is necessitated by the neuter noun *havis* (“oblation”)

◇ 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 cerebralisation: Cer*D*

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

Cer*D*	OI *ṣ/ś* + *t/th*	→	OI *ṣ* + *ṭ/ṭh*
	OI *ẓ* + *d/dh*	→	OI *ẓ* + *ḍ/ḍh*

The first line shows up in these examples:

◇ PPP *dṛṣ-ṭa* of OI root *dṛś* (“to see”)

◇ OI *aṣṭā* ← IE *okt́ō* (“eight”)

Remember also PPP *iṣ-ṭa* of OI *yaj, yajatê* (“to sacrifice”):

	IE **iǵ-to* (z.g. with PPP marker *to*)
→	*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*** 2. line)

Forward cerebralisation: Cer*n*

The rules for the cerebralisation of *n* are complex. A rough summary is

Cer*n*	OI *n* after *r/ṛ/ṝ* not word-final	→	OI *ṇ*

Compare

◇ *jīvanam* (“life”) without *r*-sounds before *n* versus

◇ *maraṇam* (“death”), where the *r* cerebralises *n*.

Apparently, *r* 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, or cerebral, manner. If other sounds intervene between the *r* sounds and the *n*, cerebralisation may still occur. This is the case when the other sounds do not employ the tip of the tongue. Compare

◇ *rathêna* (instr. sg. of *ratha* (“carriage”)), where 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*
	OI *s..ṣ*	→	OI *ṣ..ṣ*

For the first line see IE **ḱasó* → u.at. *śasa* → *śaśa* ("hare"), by forward-assimilation. Backward assimilation is involved in the second line, where IE **sveḱuro* → u.at. *svaśura* → *śvaśura* ("father in law") provides an example. For the third line, see s.v. *ṣaṭ/ṣaṣ*.

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*/$dhg^w h$	→	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 *r̥sr*	→	OI *r̥cch*

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*	*spark-ṣy-a-ti*, *sprak-ṣy-a-ti*
vac	to say	*vak-tum*	*vak-ṣy-a-ti*
yaj	to sacrifice	*yaṣ-ṭum*	*yak-ṣy-a-ti*

Now turn to the dental-palatal clusters IE *tḱ* and IE *dhǵh* in the 6. and 7. lines. 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*$_2$*r̥tḱo*
→ OI *ṛkṣa* ("bear"),

and

IE **dhǵhom*
→ Ved. *kṣam ("ground, earth")*

respectively. For *dhg*^{w}*h* → *kṣ*, see s.v. *dah*.

For the fourth line from the bottom, see s.v. *cakṣ*. For the third last one, see *iṣ, gam,* or *pracch* in subsection B.3.2. In these three examples, there is a vowel (*i*, *m̥*, or *r̥*) 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. 130).

B.3.5. Consonant clusters and word-final consonants

Simplification of consonant clusters (CCl)

Old Indic 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 u.at. *marut-s* is expected. Instead, one finds nom. sg. *marut* ("wind").

◇ Parasmâipada imperfect sg. of athematic verbs also present suitable examples:

√ 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 *bhikṣu* ("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**)
→ *bhik-ṣ-u* (**RUKI**)

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

	`-v/-asp`	`-v/+asp`	`+v/-asp`	`+v/+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, pp. 115) 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

OI stem	nom. sg.	translation
viś ← IE **veiḱ*	*viṭ* ← IE **viḱ-s*	settlement
yudh	*yut*	battle
sam-rāj	*sam-rāṭ*	ruler

The loss of voice and aspiration is not surprising. Furthermore, the palatals may turn into *k* or *ṭ*. From the point of view of **PPal** and **SPal** (see pp. 37), the change into *k* is the expected one because these palatals orginate from IE velar or IE palatals. Indeed, the palatalisation 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*, the development might have been

IE **ḱ-s/ǵh-s*
→ *ḱ-s/ǵ-s* (**ASh**)
→ *k-s* (**BA**)
→ *k-ṣ* (**RUKI**)
→ *ṭ* (**AFP**)

Avoidance of consonant clusters with resonant

Consonant clusters are simplified by **CCl** (see above) or by metathesis:

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, in case of OI *r* or *l*, one 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 initial *s*

A number of IE roots come in two versions, with and without word-initial *s*, which is then called *s* mobile. See OI *kṛt*, *carman*, *paśyati*, *nāga*, *lih*, and *stan* in the dictionary chapter.

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

Sprouting or deletion of sibilants between dentals

Furthermore, two odd rules for sibilants between dentals can be deduced. On the one hand, *z* (voiced sibilant) spontaneously emerges between voiced dentals (symbolised by D^{+v}). On the other hand, *s* (voiceless sibilant) is deleted between a plosive and a dental if at least one of them is not voiced:

D*z*D	IE $D^{+v}D^{+v}$	$\rightarrow$	OI $D^{+v}zD^{+v}$
	IE *PsD*	$\rightarrow$	OI *PD*

The first sound law (sprouting of *z* between voiced dentals) is exemplified on p. 52. The second one is obvious from the gerund *ut-thāya* from *ud-sthā*. It also has the support of the PPP *a-gdha* ("not eaten") from the alpha privativum *a-* and from the OI root *ghas* or the IE root *ghes*

	IE $^{*}\underset{\circ}{n}$*-ghs-to* (z.g. with PPP marker *to*)
$\rightarrow$	*a-gh-ta* (**SY_*N***, **D*z*D**)
$\rightarrow$	*a-gdha* (**ASh**)

The third example is the aorist *a-śap-dhvam* for u.at. *a-śap-s-dhvam* (p. 219).

anusvāra of *m* or *n* before *s*

Quite regularly, *m* or *n* before *s* turns into anusvāra:

Ns	OI *ms*	$\rightarrow$	OI *ṃs*
	OI *ns*	$\rightarrow$	OI *ṃs*

See the futures

- ◇ *raṃ-sy-a-tê* from root *ram* and
- ◇ *haṃ-sy-a-ti* from root *han*

Old Indic *h*

In contrast to the usual procedure (from IE to OI), consider the origins of Old Indic *h*. 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*)

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 palatal (IE $*\acute{k}erd$)

And, finally, see the laryngeal subsection for *aham, duhitar*, and *mahi* (pp. 55).

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 another 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*** (p. 42). Here is a long list of sound laws, not all of them involving compensatory lengthening:

CpL*z*	OI *as* + C^{+v}	→	OI	*ô*, w.-f. *ô*, not w.-f. *ê*, not w.-f., bef. *i* — C^{+v}
	OI *is* + C^{+v}	→	OI	*ir*, sandhi *ī*, not sandhi — C^{+v}
	OI *us* + C^{+v}	→	OI	*ur*, sandhi *ū*, not sandhi — C^{+v}
	OI *ās* + C^{+v}/V	→	OI *ā* + C^{+v}/V	
	OI *êz* or *ôz* not w.-f. + C^{+v}/V	→	OI *ê* or *ô* + C^{+v}/V	
	OI *as* + *a*	→	OI *ô* + ∅ (sec. w.-i. *a* is deleted)	
	OI *as* + *i*/*ī*/*u*/*ū*/*âi* etc.	→	OI *a* + *i*/*ī*/*u*/*ū*/*âi* etc.	

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

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

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

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

and "thirteen" :

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

And here are two more complicated examples: First, *ṣôḍaśa* ("sixteen") can be explained by

	ṣaṣ-daśa (without sandhi)
→	*ṣaẓ-daśa* (***sz*** before voiced stop)
→	*ṣaẓ-ḍaśa* (**Cer*D***)
→	*ṣô-ḍaśa* (**CpL*z***)

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

	IE $^{*}veǵh\text{-}tum$ (full grade and infinitive marker *tum*)
→	*vaǵh-tum* (***aā***)
→	*vaǵ-dhum* (**ASh**)
→	*vaz-dhum* (***sz***)
→	*vô-dhum* (**CpL*z***)
→	*vô-ḍhum* (leveling with PPP *ūḍha*, see below)

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

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

Together with sound law **D*z*D**, consider par. imper. 2. pers. sg. of *dā* ("to give"):

	IE $^{*}da\text{-}dh_3\text{-}dhi$
→	*da-ddhi* (**Lar_*V***, p. 30)
→	*da-dzdhi* (**D*z*D**, p. 49)

→ *da-zdhi* (**CCl**, p. 46)
→ *daz-dhi*
→ *dê-dhi* (**CpL*z***)
→ *dê-hi* (analogy)

The sandhi rules in the second and third lines may also apply within words, as in *havir-bhis* (see p. 236) or *dur-ga* (s.v. *dus*). In an earlier word-formation stage, compensatory lengthening applies. 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*.

Still with respect to the third line, consider this development that leads to the PPP of *vah* ← IE **veǵh*:

IE **vǵh-to* (z.g. with PPP marker *to*)
→ *uǵh-ta* (***SV***)
→ *uǵ-dha* (**ASh**)
→ *uz-dha* (***sz***)
→ *uẓ-dha* (**RUKI**)
→ *uẓ-ḍha* (**Cer*D***)
→ *ū-ḍha* (**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. pres. ind. 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)

The fifth line is seen in examples such as *lê-ḍhum* or *gô-ḍhum* (pp. 101).
As in the first line, OI *as* turns to *ô* also before OI *a* (sixth line), but the latter is then deleted as in

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

In the seventh line (similar to the fourth one), before vowels other than *a*, *s* simply vanishes, without any lengthening:

	naras īkṣatê (without sandhi)
→	*naraz īkṣatê* (***sz***)
→	*nara 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 exemplified by

**punar rāmaḥ*	→	OI *punā rāmaḥ*

and partly explains

**nêtar-s*	→	OI *nêtā*	pp. 251

The second line is present in

**bala-vant-s*	→	OI *bala-vān*	pp. 237
**su-manas-s*	→	OI *su-manās*	pp. 235
**gir-s*	→	OI *gīr*	
acc. pl. IE **deiv-o-ns*	→	*dêv-ān*	pp. 228
acc. pl. IE **nei-t̥r̥-ns*	→	*nê-tṝ-n*	pp. 251

Against **CpL*s***, observe nom. sg.

**bhar-ant-s*	→	OI *bhar-an* (**CCl**)	pp. 240
**rāj-an-s*	→	OI *rāj-ā*	pp. 245
**yôg-in-s*	→	OI *yôg-ī*	pp. 249
**nê-tar-s*	→	OI *nê-tā*	pp. 251
**pit-ar-s*	→	OI *pit-ā*	pp. 253

I do not have any explanation why *bhar-an* does not exhibit compensatory lengthening. Neither do I know why the nom. sg. *rāj-ā* through *pit-ā* lose the final consonants. This phenomenon is so evident that I suggest the label **CpL_*an-in-tar*** for it. After the suffixes mentioned, we witness compensatory lengthening in nominative singular, but also loss of the only remaining consont:

CpL_*an-in-ar* *an-s/in-s/ar-s* → *ā/ī/ā*

B.3.7.3. Compensatory lengthening for suppression of *d*

A rather special rule can be described as

CpL*dḱ* *Vdḱ* → *V̄* + *ḱ* → **PPal**

For examples, see the dictionary entries for OI desiderative root *dīkṣ* (s.v. *daśas*) 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 ensue.

Visarga rules regularly apply to word final *s*, but sometimes also to *s* within words, in particular before endings or in compounds. Quite a few of the visarga rules have been dealt with before. The rules can easily be memorised 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 is
  - ⊙ a palatal stop: *haris + calati → hariś calati* (**BA**)
  - ⊙ a cerebral stop: *haris + ṭīkāṃ karoti → hariṣ ṭīkāṃ karoti* (**BA**)
  - ⊙ a dental stop: *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*
  - ⊙ *gatis + nāsti → gatir nāsti* (**CpL*z*** 2. line)

◇ *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 sound that is
  - ⊙ a consonant: *rāmas + gacchati → rāmo gacchati* (**CpL*z*** 1. line)
  - ⊙ vowel *a*: *rāmas + ayam → rāmo 'yam* (**CpL*z*** 6. line)
  - ⊙ other vowels: *rāmas + uvāca → rāma uvāca* (**CpL*z*** 7. line)

◇ *s* following *ā*

- before voiced initial: *hatās + vīrās → hatā vīrāḥ* (**CpL*z*** 4. line)
- otherwise (absolute final position, before non-voiced initial): *āḥ*

These rules bear the designation **Vis**.

B.3.9. Laryngeal sound laws

Laryngeals were involved in modifying some consonants:

Lar_*CH*	in general:	IE *CHV*	→	*CV*
	special cases:	IE $P^{\texttt{+v-asp}}h_2$	→	$P^{\texttt{+v+asp}}$
		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. 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 second to last line, see *sthā, tiṣṭhati* ("to stand") on p. 86 and *sakhi* in the dictionary. For the last line, see *pā, pi-ba-ti* ("to drink") on p. 86.

B.4. Middle and New Indic

B.4.1. Introductory remark

The sound laws that differentiate Middle Indic (MI) from Old Indic (OI) are complicated and differ between the Middle Indic languages. When looking for Middle Indic examples, Pali (Pa.) is mostly adduced, but sometimes also Prakrit (Pkt.). Classical Sanskrit is not a predecessor of Pali or of (a) Prakrit, but is more conservative than these Middle Indic languages in most respects. Counterexamples exists such as Pa. *idha* ("here") versus OI (even Ved.) *iha* which is "newer" (see the origins of OI *h* on p. 50). Or consider the thematic present tense participle OI and Ved. *a-māna* (see p. 154). While acknowledging

that Middle Indic is sometimes more conservative than Sanskrit, I still feel justified to use the arrow → in

$$\text{OI } ava \quad \rightarrow \quad \text{MI } o$$

or

$$\text{OI } dugdha \quad \rightarrow \quad \text{Pa. } duddha$$

In contrast to my usual procedure of citing neuter *a* nouns like *phalam* with the ending *m,* I just employ the stem form *phala* in the upcoming comparisons with Middle and New Indic.

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 Indic, one finds both short and long *e* and *o* that are here distinguished 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

$$\text{OI } t\hat{a}ila \text{ (“oil”)} \quad \rightarrow \quad \text{Pa. } t\bar{e}la \quad \sim \quad \text{Pkt. } t\check{e}lla$$

Since OI *p* may develop into MI *v*, the following corrollary to the above sound law results:

$$\text{OI } apa \quad \rightarrow \quad \text{MI } \bar{o}$$

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 Indic.

The law of morae

The law of morae states that a syllable with a long vowel cannot be closed. If an OI word has a long vowel followed by two consonants, in Middle Indic 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. *ĕvvaṃ*

◇ OI *tâila* ("oil") → Pkt. *tĕlla*

◇ OI *yâuvana* ("youth") → Pkt. *jŏvvaṇa*

In summary:

LawOfMorae	OI $\bar{V}CC$	→	MI $\breve{V}CC/\bar{V}C$
	OI $\bar{V}C$	→	MI $\breve{V}CC$

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 semivowel (SV). The inserted vowel is often *i:*

OI RC	→	MI RiC
OI CR	→	MI CiR

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

◇ near semivowel *v* or

◇ near labials

This phenomenon is called anaptyxis or, in Sanskrit, svarabhakti. Consider these examples:

◇ OI *klinna* (PPP of *klid*, "to get wet") → Pkt. *kiliṇṇa* (see also p. 60)

◇ OI *varṣa* ("year") → Pkt. *varisa* (together with OI *ś/ṣ/s* → MI *s*)

◇ OI *padma* ("lotus") → Pa. *paduma* ∼ Pkt. *paüma*

◇ OI *śvas* ("tomorrow") → Pkt. *suvo* (near semivowel *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:

◇ OI *ṛ* → MI *i* after or before front vowel

- OI *ṛṣi* ("seer") → Pa. *isi*
- OI *kṛmi* ("worm") → Pa. *kimi* (see also pp. 65)
- 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*
- OI *gṛha* ("house") → Pa. *gaha*
- OI *bhṛta* ("servant") → Pa. *bhata* (but *u* after labial expected)

B.4.3. Consonants

General rules

Turning to consonants, their development is often complicated and differs between Middle Indic languages. A rough outline of major phonetic changes is given, before turning to examples:

◇ *n* is typically cerebralised, *d* and *t* are often cerebralised 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.

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

◇ In clusters,

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

The following individual rules roughly follow the above order.

Cerebralisation

◇ Dentals often become cerebral:

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

◇ *n* is often cerebralised as in

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

Other cerebral peculiarities

Sometimes lenition occurs, as in

MI *ṭ/ṭh/th* → MI *ḍ/ḍh/dh*

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

◇ 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

OI *ś/ṣ/s* → MI *s*

Examples are

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

◇ OI *bhāṣatê* ("he speaks") → Pa. *bhāsati*

◇ OI *śaśa* ("hare") → Pa. *sasa*

◇ OI *śiṣya* ("pupil") → Pa. *sissa* (see also pp. 65)

Aspiration, compensatory and otherwise

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

$$\begin{aligned} \text{OI } sp &\rightarrow \text{MI } ph \\ \text{OI } kṣ &\rightarrow \text{MI } kh \end{aligned}$$

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

◇ OI *kṣatriya* ("warrior") → Pkt. *khattia*

◇ OI *kṣipta* (PPP of OI *kṣip*) → Pkt. *khitta*

◇ OI *spṛśati* ("touches") → Pa. *phusati* ∼ Pkt. *phusaï*

Alternatively, one finds *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, both compensatory aspiration for deleted *s* and compensatory doubling are witnessed:

◇ OI *akṣi* n. ("eye") → Pkt. *akkhi*

◇ OI *asti* ("he is") → Pkt. *atthi*

◇ OI *hasta* ("hand") → Pkt. *hattha*

Aspiration of both *k* and *ṭ* 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, observe

$$\begin{aligned} \text{OI } g/j/d &\rightarrow \text{MI } \varnothing \\ \text{OI } k/c/t &\rightarrow \text{MI } \varnothing \end{aligned}$$

Note that these plosives sometimes remain or that the unvoiced ones become voiced as in

$$\text{OI } t \rightarrow \text{MI } d$$

Examples:

◇ OI *avalôkita* ("looked at") → Pkt. *ōlōïa*

◇ OI *êti* ("he goes") →
- Śaurasenī Pkt. *ēdi*
- Māhārāṣṭrī Pkt. *ēi*

◇ OI *nakula* ("mongoose") → Pkt. *naüla*

◇ OI *nagara* ("town") → Pkt. *nayara* (where *y* occurs to avoid hiatus)

◇ OI *bhôjana* ("eating, nutrition") → Pkt. *bhoaṇa*

◇ OI *latā* ("creeper") →
- Śaurasenī Pkt. *ladā*
- Māhārāṣṭrī Pkt. *laā*

◇ OI *lôka* ("world") →
- Śaurasenī Pkt. *lōga*
- Māhārāṣṭrī Pkt. *lōa*

◇ OI *śâuca* ("cleanness") → Pkt. *sōa*

◇ OI *sakala* ("total, complete") → Pkt. *saala*

◇ OI *hita* (PPP of *dhā*) →
- Śaurasenī Pkt. *hida*
- Māhārāṣṭrī Pkt. *hia*

Examples for voiced consonants that replace 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

$$\begin{array}{lcl} \text{OI } k/c/t & \rightarrow & \text{MI } \varnothing \\ \text{OI } g/j/d & \rightarrow & \text{MI } \varnothing \end{array}$$

the following corrollary results:

$$\begin{aligned} \text{OI } kh/gh &\rightarrow \text{MI } h \\ \text{OI } th/dh &\rightarrow \text{MI } h \\ \text{OI } ph/bh &\rightarrow \text{MI } h \end{aligned}$$

Consider these examples:

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

◇ OI *katham* ("how? in what manner?") →
- Śaurasenī Pkt. *kadhaṃ*
- Māhārāṣṭrī Pkt. *kahaṃ*

◇ OI *nakha* ("finger nail") → Pkt. *ṇaha*

◇ OI *mukha* ("mouth") → Pkt. *muha*

◇ OI *mêgha* ("cloud") → Pkt. *mēha*

◇ OI *vadhū* ("bride") → Pkt. *vahū*

But *ph* may be retained at the beginning of a second member of a compound:

◇ OI *citra-phalaka* ("painting") → Pkt. *citta-phalaa*

In the OI root *bhū*, observe MI *h* for *bh*:

◇ OI and Pa. *bhav-a-ti* ("he is") versus Pkt. *hō-ti* or even *hō-ï*

◇ OI *bhav-i-ṣy-a-ti* ("he will be") → Pkt. *hav-i-ss-a-di* (see pp. 65)

Consonants: initial palatalisation

In the beginning of words, palatal sounds evolve in Middle Indic through different avenues. The sound law

$$\text{OI } y \rightarrow \text{MI } j$$

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*

Consider these examples:

◇ OI *tyāga* ("abandonment") → Pa. *cāga*

◇ OI *dyūta* ("gambling") → Pa. *jūta*

◇ OI *dhyāna* ("meditation") → Pa. *jhāna*

Consonants: other peculiarities

OI *p* may develop into *v* or may be dropped:

◇ OI *rūpa* ("form, beauty") → Pkt. *rūa*

OI *y* tends to be dropped:

◇ OI *priya* ("dear, pleasant") → Pkt. *pia*

◇ OI *vi-yôga* ("disjunction, separation") → Pkt. *vi-ōa*

Clusters: Backward assimilation for non-palatal plosives

If two non-palatal plosives meet, the first is assimilated to the second as in the sound law

OI *pt*	→	MI *tt*

It is easy to find examples, such as

◇ 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. It turns out that a hierarchy of sounds provides a generalisation of many different sound laws. This is the hierarchy:

$$P^{\texttt{-pal}} \;>\; S \;>\; N \;>\; P^{\texttt{+pal}} \;>\; l \;>\; v \;>\; y \;>\; r$$

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.

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 *tri-lôka* ("three worlds") → Pkt. *ti-lōa*

◇ OI *dur-bala* ("weak") → Pkt. *dub-bala*

◇ OI *dṛṣ-ṭi* ("sight") → Pkt. *diṭ-ṭhi*

◇ OI *dṛś-ya* ("visible") → Pkt. *das-sa*

◇ OI *dvi-ja* ("twice born") → Pa. *di-ja*

◇ OI *pakva* ("cooked, ripe") → Pa. *pakka*

◇ OI *bharta* → MI *bhatta*

◇ OI *yôg-yā* ("exercise") → Pa. *yŏg-gā* (law of morae)

◇ OI *rātri* ("night") → Pa. *ratti* (law of morae)

◇ OI *śak-nô-ti* ("he is able") → Pa. *sak-kō-ti*

Palatals are weaker than nasals:

◇ OI *ā-jñā-p-aya-ti* ("he orders") → Pkt. *ā-ṇā-v-ē-di*

◇ OI *yaj-ña* ("sacrifice") → Pkt. *jaṇ-ṇa*

Sibilants occupy second position in hierarchy:

◇ OI *īśvara* (“lord”) → Pa. *issara*

◇ OI *dṛś-ya* (“visible”) → Pkt. *das-sa*

◇ OI *varṣa* (“year”) → 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 *tr̄*, see p. 127) → Pkt. *ō-iṇṇa*

◇ OI *karṇa* (“ear”) → Pa. *kaṇṇa*

◇ OI *priya* (“dear, pleasant”) → Pa. *pia*

◇ OI *grāma* (“village”) → Pa. *gāma*

◇ OI *cakra* (“wheel”) → Pa. *cakka*

◇ OI *dur-labha* (“difficult to obtain”) → Pa. *dul-labha*

◇ 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 *dhyāna* ("meditation") → Pa. *jhāna*
2. Cluster *kṣ* may 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 *mantra* ("spell") → Pa. *manta*

B.4.4. A few New Indic developments

Building on MI features, the modern Indic languages developed. With respect to Hindi (Hi.), three major developments occurred:

1. Middle Indic double consonants are simplified with two effects:
   a) The preceding vowel is lengthened (compensatory lengthening).
   b) In Hindi, 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.
3. In Apabhraṃśa, Middle Indic final long vowels are shortened. In New Indic, final short vowels are lost.

Together, these three developments clearly show in these examples.

◇ Double consonants simplified without nasalisation:
- OI *dug-dha* ("milk") → Pa. *dud-dha* → Hi. *dūdh*
- OI *rātri* ("night") → Pa. *ratti* → Hi. *rāt*
- OI *sapta* ("seven") → Pa. *satta* → Hi. *sāt*

◇ Double consonants simplified with nasalisation (where $\widetilde{a}$ stands for nasalised $\bar{a}$):
- OI *akṣi* n. ("eye") → Pkt. *akkhi* → Hi. $\widetilde{a}kh$

- OI *sarpa* (“serpent”) → Pa. *sappa* → Hi. *sã͡p*

◇ Nasal lost under nasalisation and compensatory lengthening:

- OI *aṅka* (“mark, sign”) → Pa. *aṅka* → Hi. *ā̃͡k*
- OI *kampa* (“tremble”) → Pa. *kampa* → Hi. *kā̃͡p*
- OI *danta* (“tooth”) → Pa. *danta* → Hi. *dā̃͡t*
- OI *pañca* (“five”) → Pa. *pañca* → Hi. *pā̃͡c*

B.5. Sound laws of other IE languages

Linking Sanskrit words to words in English or German, or to Latin and Old Greek foreign words is helpful in learning the abundant Sanskrit vocabulary. Therefore, a summary of the important sound laws involving these languages is in order. Many of the sound laws for Old Indic have already been considered in the previous sections.

B.5.1. Vowels and diphthongs

The most dramatic vowel change in the Indo-European language family concerns the Indo-Iranian shift towards *a* and *ā*. Sometimes one can reconstruct Indo-European words by taking the Sanskrit consonants and the Greek vowels. For example,

$$\text{IE } {}^*bher \quad \rightarrow \quad \begin{cases} \text{OI } bhar\text{-} \\ \text{OGr. } pher\text{-} \\ \text{Lat. } fer\text{-} \\ \text{E } bear \end{cases}$$

Concentrating on a few vowel changes, note, for Latin, the sound law:

LAT_V	IE *e* before *u* or *v*	→	Lat. *o*
	OLat. *ei*	→	Lat. *ī*

With respect to the first line, consider the example of 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 *Neo-lithic*.

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, a few sound laws that will become important later on are explained. Germanic unstressed syllables tend to be dropped or turned into the “schwa”-sound (which is nicely called “Murmelvokal” in German). Examples are E *seven* versus NHG *sieben* and E *eat* versus NHG *essen*.

On top, consider these developments for New High German:

$$\begin{array}{lll} \textbf{NHG\_\_}\boldsymbol{V} & \text{IE } a/o & \rightarrow \text{ NHG } a \\ & \text{IE } \bar{a}/\bar{o} & \rightarrow \text{ NHG } \bar{u} \\ & \text{IE } e & \rightarrow \text{ NHG } i \end{array}$$

For the first line, consider

◇ IE **oktō* → Lat. *octō* ∼ NHG *acht*

◇ Lat. *toga* ∼ NHG *Dach*

◇ Lat. *mon*ere ∼ NHG *mahn*en

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

◇ Lat. *cārus* (“dear”, Fr. *cher*) ∼ E *whore* ∼ NHG *Hure*

◇ IE **bhrātēr* → Lat. *frāter* ∼ NHG *Bruder*

And here two examples for the third line:

◇ IE **bhendh* → OI *bandh* ∼ NHG *binden*

◇ IE **esti* → Lat. *est* ∼ OI *asti* ∼ NHG *ist*

B.5.2. Syllabic Indo-European nasals and liquids

Here come the sound laws for short 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 or word-initial before consonant: *a-gatika* (“without way out”), *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*

◇ OGr. B English *a-theist*, *an-archy*

◇ Lat. B English *in-effective*, *im-perfect*

Sometimes, mixtures are encountered such as

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

◇ German *un-effektiv* (German-Latin)

The past participle is built 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:

$$\textbf{IE\_\_SY\_\_}\boldsymbol{L} \qquad \text{IE } \underset{\circ}{r}/\underset{\circ}{l} \quad \rightarrow \quad \begin{cases} \text{OI} \begin{cases} \underset{\cdot}{r} \text{ or } \underset{\cdot}{l}\ (!) & \text{between cons.} \\ ur/ur & \text{before vowels, after labials} \\ ir/ir\ (?) & \text{before vowels, not after labials} \end{cases} \\ \text{OGr.} \begin{cases} ar/al & \text{bef. vowel} \\ (ra,\ ar)/(la,\ al) & \text{otherwise} \end{cases} \\ \text{Lat.} \begin{cases} (or,\ ur)/(ol,\ ul) & \text{betw. cons.} \\ er/el & \text{otherwise} \end{cases} \\ \text{E } or/ol \sim \text{NHG } or/ol \end{cases}$$

Consider a few examples:

◇ IE $^*w\underset{\circ}{r}k^w \rightarrow$ OI $v\underset{\cdot}{r}ka \sim$ E *wolf* $\sim$ NHG *Wolf*

◇ IE $^*d\underset{\circ}{r}\acute{k} \rightarrow$ OI $d\underset{\cdot}{r}\acute{s}$

◇ IE $^*g^w\underset{\circ}{r}u \rightarrow$ OI *guru* $\sim$ OGr. *baru* as in the B *baro-meter*

◇ IE $^*p\underset{\circ}{l}h_1u \rightarrow$ OI *puru*

Note the remaining word-initial *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, weak and strong verbs are distinguished. 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 NHG *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"), *o* as in NHG *Wolf* above

According to this pattern, the following forms might be due to sound laws or analogy:

◇ *werben, warb, geworben*

◇ *werfen, warf, geworfen*

◇ *bergen, barg, geborgen*

◇ *sterben, starb, gestorben*

◇ *helfen, half, geholfen*

With *n* instead of *r*, compare

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

$$\text{IE } p/t/k \quad \text{and} \quad \text{IE } b/d/g$$

remain the same in Greek and Latin as in Indo-European. That part is easy. Here are the more interesting sound laws:

OGR	IE *bh/dh/gh*	→	OGr. *ph/th/ch* (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*

The first line is responsible for the fact that Old Greek foreign words (B stands for borrowing) are recognisable by *ph/th/ch*:

◇ *ph*: B *philosophy, phobia*

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

◇ *ch*: B *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. For example, g^wh before *e* finally turns into *th* as in OGr. B *thermic* (s.v. gharma).

For the fifth line of **OGR** compare

◇ Lat. *vox* with OGr. B *epic* (s.v. *vac*)

◇ Lat. B *vicinity* with OGr. B *economics*

◇ OI *kravis* with OGr. *kreas* ← IE $^*kreuh_2s$-

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

Lat. *sex*	∼	OGr. *hex* (as in *hexagon*)
Lat. *septem*	∼	OGr. *hepta* (as in *heptagon*)
it. B *sal-to*	∼	OGr. *hal-ma* (also a board game)
E *same*	∼	OGr.-Lat. B *homo-sexual*

Lat. B *semi-final* ∼ OGr. B *hemi-sphere*
Lat. B *serpent* ∼ OGr. 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 $C^{+\text{asp}}\,VC^{+\text{asp}} \rightarrow$ OI $C^{-\text{asp}}\,VC^{+\text{asp}}$

In Latin, the development IE *bh/dh/gh* is complicated. It pays to remember

LAT_*f* IE *bh/dh/gh* word-initial → Lat. *f*

For example, IE **bhreg* leads to the Lat. Bs *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. *jīv*).

An IE *s* between vowels regularly turned into Lat. *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 *bh/dh/gh* → 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*
- It. *gelato* ("ice") ∼ E *cold*

◇ Voiced aspirated sounds lose the aspiration as in IE **bhreg* → Lat. B *frag-ile* ∼ E *break*.

B.5.5. Consonants: From Germanic 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 Germanic 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* (written *z*) 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, English (rather than Germanic or Gothic) can be fruitfully compared 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* ("fence")	E *timber* ∼ NHG *Zimmer* ("room")
E *tide* ∼ NHG *Zeit* ("time")	E *tongue* ∼ NHG *Zunge*
E *tear* ∼ NHG *zerren*	E *fif-ty* ∼ NHG *fünf-zig*
E *till* ∼ NHG *Ziel* ("aim")	E *ten* ∼ NHG *zehn*

The second line of **NHG_C** concerns Germ. *k*. A word-initial change is observed in Switzerland. For other High German speakers, a change occurs only "after vowel":

E *weak* ∼ NHG *weich* ("soft")	E *break* ∼ NHG *brechen*
E *duck* ∼ NHG *tauchen* ("to dive")	E *seek* ∼ NHG *suchen*
E *lock* ∼ NHG *Loch* ("hole")	E *spoke* ∼ NHG *Speiche*
Lat. *cocus* → B *cook* ∼ NHG *Koch*	Lat. *sīcilis* → B *sickle* ∼ NHG *Sichel*

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

Now turn to the remaining unvoiced unaspirated sound, *p*. Similar to *t*, there are 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 a clear Latin-Germanic equation involving the second consonant shift exists, the borrowing occurred after the first consonant shift, but before the second consonant shift as in

◇ Lat. *planta* → B English *plant* ∼ NHG *Pflanze*

◇ Latin *piper* → B English *pepper* ∼ NHG *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, 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 *oath* ∼ NHG *Eid*
E *think* ∼ NHG *dünken* (mich *dünkt*)	E *path* ∼ NHG *Pfad*
E *brother* ∼ NHG *Bruder*	E *smith* ∼ NHG *Schmied*
E *earth* ∼ NHG *Erde*	E *that* ∼ NHG *das/dass*
E *three* ∼ NHG *drei*	E *thief* ∼ NHG *Dieb*
E *through* ∼ NHG *durch*	E *thing* ∼ NHG *Ding*
E *thorn* ∼ NHG *Dorn*	E *leather* ∼ NHG *Leder*
E *thirst* ∼ NHG *Durst*	

Finally, for Germanic and English *d* consider these examples:

E *bed* ∼ NHG *Bett* ("bed")	E *drink* ∼ NHG *trinken*
E *bed* ∼ NHG *Beet* ("bed, patch")	E *duck* ∼ NHG *tauchen* ("to dive")
E *board* ∼ NHG *Brett*	E *deer* ∼ NHG *Tier* ("animal")
E *ride* ∼ NHG *reiten*	E *lead* ∼ NHG *leiten*
E *day* ∼ NHG *Tag*	E *mood* ∼ NHG *Mut* ("courage")
E *deep* ∼ NHG *tief*	E *daughter* ∼ NHG *Tochter*

E *door* ∼ NHG *Tür*	E *tide* ∼ NHG *Zeit* (“time”)
E *do* ∼ NHG *tun*	E *under* ∼ NHG *unter*
E *spade* ∼ NHG *Spaten*	E *wide* ∼ NHG *weit*
E *good* ∼ NHG *gut*	E *widow* ∼ NHG *Witwe*
E *red* ∼ NHG *rot*	E *dear* ∼ NHG *teuer*
E *ladder* ∼ NHG *Leiter*	E *shoulder* ∼ NHG *Schulter*
E *dead* ∼ NHG *tot*	E *need* ∼ NHG *Not*
E *seed* ∼ NHG *Saat*	E *fold* ∼ NHG *falten*

Exceptions

Of course, no rules without exception (leading to new, refined rules):

1. Germ. *t* remains after *f, s,* or *ch*:
   - ◇ Lat. *captivus* ∼ NHG *Haft*
   - ◇ E *stone* ∼ NHG *Stein*, but not u.at. *stsein* (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)
   - ◇ E to *fight* ∼ NHG *fechten* (“to fence”)
   - ◇ E *eight* ∼ NHG *acht*
2. Germ. *t* remains before *r*: E *tree*, *true* ∼ NHG *Treue* (“loyalty”), *Trost* (“consolation”) (*t* → *ts* is repressed—just try to pronounce u.at. *tsreue* or u.at. *tsrost*)
3. Germ. *d* remains after *n*: E *hound* ∼ NHG *Hund*
4. Germ. *k* or *t* are not shifted if *r* follows immediately
   - ◇ E *acre* ∼ NHG *Acker* (“field”)
   - ◇ E *bitter* ∼ 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* (“body”)	E *live* ∼ NHG *leben*
E *deaf* ∼ NHG *taub*	E *dove* ∼ NHG *Taube*
E *loaf* ∼ NHG *Laib*	E *leaf* ∼ NHG *Laub* (“foliage”)
E *have* ∼ NHG *haben*	E *seven* ∼ NHG *sieben*
E *love* ∼ NHG *lieben*	E *starve* ∼ NHG *sterben* (“to die”)
E *believe* ∼ NHG *glauben*	E *evil* ∼ NHG *übel*

The second and third lines of **NHG_E** show how velar sounds turn mute in English:

E to *fight* ∼ NHG *fechten* (“to fence”)	E *night* ∼ NHG *Nacht*
E *knight* ∼ NHG *Knecht* (“farmhand”)	E *weight* ∼ NHG Ge-*wicht*
E *plight* ∼ NHG *Pflicht* (“duty”)	E *eight* ∼ NHG *acht*

and

E *rain* ∼ *Regen*	E *way* ∼ *Weg*
E to *lie* ∼ *liegen*	E *many* ∼ *mannig*-faltig (“manifold”)
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*

E *g* is also found 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**), the loss *n* or *m* in E can be observed:

E *five* ∼ NHG *fünf*	E *tooth* ∼ NHG *Zahn*
E *wish* ∼ NHG *wünschen*	E *other* ∼ NHG *anderer*
E *us* ∼ NHG *uns*	E *goose* ∼ NHG *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*

◇ OGr. 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*

◇ OGr. 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, one obtains

$$\begin{array}{ll} \textbf{VER} & \text{IE } p/t/k/s \text{ not word-initial, not immediately after IE accent} \\ \rightarrow & \text{Germ. } b^{\texttt{fric}}/d^{\texttt{fric}}/g^{\texttt{fric}}/r \\ \rightarrow & \left\{ \begin{array}{l} \text{E } v/th/g/r \\ \text{NHG } b/t/g/r \end{array} \right. \end{array}$$

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 NHG *t* that goes back to either Germ. *d* or Germ. $d^{\texttt{fric}}$:

NHG_C	Germ. *d*	→	E *d* (example *red*)	∼	NHG *t* (ex. *rot*)
VER	Germ. $d^{\texttt{fric}}$	→	E *th* (ex. *father*)	∼	NHG *t* (ex. *Vater*)

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

Otherwise, observe the (more common) development

NHG_*C*		IE *p/t/k/s* word-initial or 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 $^*bhr\acute{\bar{a}}t\bar{e}r$ yields E *brother* $\sim$ NHG *Bruder*.

C. Word formation

C.1. Roots

This chapter is on how roots, transformed or added to, are used to form various grammatical forms. The forms covered in his chapter comprise infinitives, PPPs, desideratives, and others. The reader might also expect to learn about the word formation of aorists and perfects in this chapter. I decided to relegate that information to the next chapter, where formation and conjugation are dealt with in "one go".

Learners of Sanskrit are used to memorising

budh, bôdhati
vas, vasati
pat, patati
...

where

◇ *budh, vas*, and *pat* are referred to as OI roots and

◇ *bôdhati* etc. are the forms for the 3. pers. sg. pres. ind.

There is, of course, nothing wrong with memorising *pat, patati*. Note, however, that the OI root is nothing but a (helpful) grammatical fiction. It is regularly used to derive root nouns (pp. 115), the passive voice (pp. 132), and the past participle (pp. 117).

For verbs in the first class, the 3. pers. sg. pres. ind. is normally given in the full grade and the OI root in the zero grade, as shown by *budh, bôdhati* (see pp. 26). One does 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 as *pt*, the zero grade of *pat*, but neither *p* nor *t* can become syllabic. (But even here, consider 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 *us̥*.

In most textbooks, what we call "OI roots" are simply called "roots". Distinguish

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

◇ a root where IE *e* was lost, i.e., the zero-grade root (for Sanskrit see pp. 26)

Typically, IE roots are monosyllabic 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–SV–C	*deuk*	to lead

Nowadays, IE roots like **ed* are not accepted any more. Instead, laryngeals are thought to come before the *e*. Thus, one would reconstruct **h*$_1$*ed* instead of just **ed*. Similarly, IE **aǵ* with root vowel *a* is replaced by **h*$_2$*eǵ*, 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 semivowels) and the root vowel is *e*.

There exist two additional reasons why OI roots may not be in zero grade. Both concern IE roots ending in a laryngeal:

3. roots such as *mā* (second class) do not distinguish between strong forms (typically full grade) and weak forms (typically zero grade), but use *mā* throughout although *mā* ← IE root **meh*$_1$ is full grade.

4. given IE zero-grade root may give rise to two different OI verbs, 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, *C–e–H* results so that one obtains long *ā* as in

$\surd$ (f.g.)	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, OI roots sometimes come in two full-grade forms. It is helpful to distinguish three groups (according to Kulikov (2011, p. 310)). The first group features a resonant and a laryngeal (in that order) in the root. By a process called "schwebeablaut" (floating vowel gradation), one postulates two IE full grades:

$$\begin{array}{lcl} \text{IE } {}^*CeRH(V/C) & \rightarrow & \text{OI } CaRV/CaRiC \\ \text{IE } {}^*CReH & \rightarrow & \text{OI } CR\bar{a} \end{array}$$

Both of these IE full-grade roots have one and the same IE zero grade. For the zero grade, remember the effects of laryngeals according to **Lar_ *V***. The following table shows the most relevant examples of the first group.

√	f.g. IE root	√	f.g. IE root
jan (f.g.) ("to produce")	${}^*\acute{g}enh_1$	**not** *jñā* ("to know")	${}^*\acute{g}neh_3$
tr̥ ("to cross")	${}^*terh_2$	*trā* ("to protect, to save")	${}^*treh_2$
dham (f.g.) ("to exhale")	${}^*dhemH$	*dhmā* ("to exhale")	${}^*dhmeH$
dhī ("to think, to reflect")	${}^*dheiH$	*dhyā* ("to contemplate")	${}^*dhyeH$
pī ("to become fat")	${}^*peiH$	*pyā* ("to swell")	${}^*pyeH$
pr̥ ("to fill)	${}^*pelh_1$	*prā* ("to fill")	${}^*pleh_1$
mr̥ ("to crush")	${}^*merh_2$	*mlā* ("to wither")	${}^*mreh_2$
hū ("to call")	${}^*\acute{g}heuH$	*hvā* ("to call")	${}^*\acute{g}hveH$

The very first example does not fit etymologically because *jan* ← IE ${}^*\acute{g}enh_1$ and *jñā* ← IE ${}^*\acute{g}neh_3$ are produced from different laryngeals. Nevertheless, in the speakers' minds, the pair *jan*/*jñā* may have been considered analogous to other pairs such as *dham*/*dhmā*. Based on *dham,* there exists the full-grade instrumental noun *dhami-tram* which clearly shows *mit* for *RiC* ← ${}^*RHC$ in the sound law above.

The second and third groups do not feature laryngeals, but are produced according to a similar model. The second group is built by the rule

$$\text{zero-grade root} \quad + \quad \bar{a}$$

while the third group follows

$$\text{root-initial consonant (cluster)} \quad + \quad \bar{a}$$

The zero-grade (second group) is seen in the following table:

√	√
i (“to go”), *ê-ti*	*y-ā* (“to go out, to go forth”), *y-ā-ti*
ghṛ (“to sprinkle, to wet”), *ji-ghar-ti*	*ghr-ā* (“to smell”), *ghr-ā-ti*
ji (“to conquer, to overcome”), *jay-a-ti*	*jy-ā* (“to suppress, to grow old”), *jy-ā-ti*
dah (f.g.) (“to burn”), *dah-a-ti*	*kṣ-ā* (“to burn”) (see s.v. *dah*)
bhas (f.g.) (“to chew”)	*ps-ā* (“to devour”), *ps-ā-ti*
man (f.g.) (“to think”), *man-ya-tê*	*mn-ā* (“to remember, to praise”), *mn-ā-ti*

while the root-initial consonant (cluster) in the third group is present in the last table:

√	√
i (“to go”), *ê-ti*	*y-ā* (“to go out, to go forth”), *yā-ti*
gam (“to go”) (f.g.), *gacch-a-ti*	*g-ā* (“to go”), *gā-ti*
dru (“to run”), *drav-a-ti*, s.v. *dram*	*dr-ā* (“to run”), *drā-ti*
bhan (“to speak”), *bhan-a-ti*	*bh-ā* (“to shine”), *bhā-ti*

It is unclear whether *i/yā* belongs to the second or the third group. The very last example is semantically difficult.

According to Kulikov (2011), the first verb in the pairs of all three groups is more flexible with respect to transitivity, while the second verb is either transitive or intransitive. Unrelated to this observation, one might suggest that the long-*ā* 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*).

◇ He chews (root *bhas*) so that he devours (*psā-ti*).

C.2. Ten verbal classes, overview

C.2.1. Thematic versus athematic classes

Sanskrit is famous for its ten verbal classes, some of which are thematic, while others are athematic. In this chapter, a rough overview of these classes is presented. With many examples and much more detail, these classes are taken up again in the next chapter.

Verbs belonging to the thematic classes are characterised by a thematic vowel between OI root (which may be put into the full grade) and ending. Without such a vowel, athematic verbs show an alternation of strong forms (mostly full grade) and weak forms (zero grade). In order to provide examples, the 3. pers. sing. (which usually takes a strong form) and the 1. pers. pl. (where the weak form is expected) are often presented.

C.2.2. The four thematic classes

The first class

Four out of the ten verbal classes use the thematic vowel. One good example for the first class is given by

$\underbrace{budh}$	,	$\underbrace{bôdh}$	-	$\underbrace{a}$	-	$\underbrace{ti}$
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 indicative in full-grade) include:

$\surd$	3. pers. sg.	translation
kṛṣ	*karṣ-a-ti*	he ploughs
klp	*kalp-a-tê*	he is ready for
dyut	*dyôt-a-tê*	he shines
$bh\bar{u} \leftarrow {}^*bhuH$	*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:

$\surd$	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 recognisable.

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, one obtains *sīḍ-ati* 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* (**CpL*z*** 2. line), *see pīḍ*

whence finally *sīd-ati* 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, ti-ṣṭha-ti* ("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-ṣṭha-ti* is not an instance of Grassmann's law (although the final result does not contradict that law). Instead, the aspiration is a reflex of the laryngeal. Reduplicating with *i* and just the consonant immediately before *i* yields

IE *$ti\text{-}sth_2\text{-}eti$ (reduplication with *i* and zero grade)
→ *ti-sth-eti* (**Lar_*CH*:** h_2 aspirates *t*)
→ *ti-ṣth-ati* **(RUKI)**
→ *ti-ṣṭh-ati* (**Cer*D***)

The full grade form should be *$steh_2$ → *stā*, but 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"):

IE *$pi\text{-}ph_3\text{-}eti$ (reduplication with *i* and zero grade)
→ *pi-b-eti* (**Lar_*CH*:** h_3 makes *p* voiced)
→ *pi-b-ati*

The first class also contains verbs where

◇ both OI root and present indicative contain short *i* or short *u*:

√	3. pers. sg.	translation
cumb	*cumb-a-ti*	he kisses
bhikṣ	*bhikṣ-a-ti* (p. 140)	he begs

◇ both OI root and present indicative contain *ī*:

√	3. pers. sg.	translation
krīḍ	*krīḍ-a-ti*	he plays
ṭīk	*ṭīk-a-ti*	he trips

The fourth class

The fourth class also employs the thematic vowel. Both OI root and present indicative are in zero grade, as seen in this example:

$\underbrace{sidh}$	,	$\underbrace{sidh}$	–	$\underbrace{y}$	–	$\underbrace{a}$	-	$\underbrace{ti}$
OI root		root		suffix		thematic		ending
in zero grade		in zero grade				vowel		3. pers. sing.

Consider these cases (zero-grade OI root, present indicative in zero grade plus suffix *y*):

√	3. pers. sg.	translation
kup	*kup-y-a-ti*	he is angry
kṣubh	*kṣubh-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 resulting u.at. *ma-y-a-tê* would have been too difficult to understand:

√	3. pers. sg.	translation
man	*man-y-a-tê*	he thinks

Finally, consider verbs with laryngeals. A clear instance of full-grade OI root and zero-grade present indicative is given by

√	3. pers. sg.	translation
jan	*jā-y-a-tê* ← IE **ǵn̥H-y-e-toi*	he is born

where the laryngeal sound law **Lar_SY** (p. 30) is applied. The laryngeal in this case is clear from infinitive *jan-i-tum*. Laryngeals are also responsible for the following examples with full-grade OI root and zero grade (!) present indicative:

√	3. pers. sg.	translation
kram	*krām-ya-ti* ← IE **krm̥H-ye ti*	he strides
dam	*dām-ya-ti* ← IE **dm̥H-ye-ti*	he tames
śam	*śām-ya-ti* ← IE **ḱm̥H-ye-ti*	he gets quiet
śram	*śrām-ya-ti* ← IE **ḱrm̥H-ye-ti*	he toils

The sixth class

The sixth class is like the fourth class without *y*, see, for example,

$\underbrace{tud}$	,	$\underbrace{tud}$	-	$\underbrace{a}$	-	$\underbrace{ti}$
OI root		root		thematic		ending
in zero grade		in zero grade		vowel		3. pers. sg.

Look, first, at the following cases (zero-grade OI root, zero-grade present indicative):

√	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, observe the following verbs with nasal infix in the present indicative:

√	3. pers. sg.	translation
muc	*mu-ñ-c-a-ti*	he frees
lip	*li-m-p-a-ti*	he smears

√	3. pers. sg.	translation
lup	*lu-m-p-a-ti*	he bites off, he steals
vid	*vi-n-d-a-ti*	he finds

Third, consider the verbs which (from the Indo-European point of view) use *sḱ* to form the present indicative:

√	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 example is

cur	,	*côr*	–	*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 indicative. Another frequently cited example is provided by[7]

√	3. pers. sg.	translation
cint	*cint-ay-a-ti*	he thinks

Causatives look similar, but are treated elsewhere, on pp. 113.

C.2.3. The second class

Leaving the thematic group of verbs, the athematic classes 2, 3, 5, 7, 8, and 9 are now covered. In the third class, one finds reduplication, in the classes 5, 7, 8, and 9 a nasal infix occurs. The remaining class 2 contains many often-used verbs. For example, the zero grade of *ê* is *i* so that Sanskrit for "to go" is

i	,	*ê*	-	*ti*
OI root		root		ending
in zero grade		in full grade		3. pers. sg.

[7]Perhaps, a nasal infix (similar to *lup* just above) may be present here. Compare the OI root *cit*.

Consider:

√	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* (**DIPH**)
   → *lêǵ-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 is 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

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
śvas (f.g.)	*śvas-i-ti*	*śvas-i-mas*	to blow, to snuffle

Sometimes *âu* is found in sg. and *u* in pl. (so-called Narten present forms, see pp. 178):

√	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

They can be explained with a laryngeal. For *nu*, one can postulate the IE f.g. root **neHv*. One then obtains regularly formed

◇ f.g. (!) 3. pers. sg. IE **neHv-ti* → OI *nâu-ti* versus

◇ z.g. 3. pers. pl. IE **nHv-mes* → OI *nu-mas*

Finally, long-$\bar{a}$ 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

Remember the first-class verbs *sīd-a-ti* ("he sits") and *ti-ṣṭha-ti* ("he stands") that are formed by reduplication. (Reduplication is also used for perfect and for desiderative forms.) Consider now the third class which contains only reduplicating verbs. It does not have many representatives. The basic idea is that the former part of the root is repeated. The repeated root vowel is often "reduced" and *i* seems to be the preferred reduplication vowel. In particular, observe the following pattern:

OI root vowels	$\bar{a}$	$\bar{\imath}$	u	$\dot{r}$
	↓	↓	↓	↓
reduplication vowel	a	i	u	i

Thus, a telling example is given by the verb for "carry":

$\underbrace{bh\dot{r}}$	,	$\underbrace{bi}$	-	$\underbrace{bhar}$	-	$\underbrace{ti}$
OI root in zero grade		reduplication syllable		root in full grade		ending 3. pers. sg.

Grassmann's law (**DA**, pp. 39) is regularly applied. For example, the OI root *hu* ("to sacrifice") goes back to IE **ǵheu* and one derives

IE **ǵhu-ǵheu-ti*
→ *ǵu-ǵhô-ti* (**DA**)
→ *ju-hô-ti* (**PPal**, p. 37)

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
hu	*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 *yuj, 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

This first impression is misleading from a historical point of view.

The ninth class as a special instance of the seventh class

It was a close look at classes 7 and 9 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*	*yuj*	*yu-na-k-ti*	*yôk-ṣy-a-ti*	*yôk-tum*
9	*nā*	*pū*	*pu-nā-ti*	*pavi-ṣy-a-ti*	*pavi-tum*

The present indicative 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 hypothesised that both verbs are similarly constructed. If that hypothesis is correct, two differences need to be addressed:

1. The ninth class has long *nā*, rather than short *na* in the seventh class.

2. The future and the infinitive forms of *pū* show *i* which seems to come out of nowhere. Traditional Sanskrit grammarians call *pū* an OI sêṭ root (*sêṭ* ← *sa-iṭ*). The OI root does not exhibit *i*, but the latter shows up in some verbal forms.

De Saussure's brilliant idea was this: One sound (that is not to be seen any more) is responsible for both phenomena. 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*	**yeug-tum*
9	**ne*	**puH*	**pu-ne-H-ti*	**pev-H-sy-e-ti*	**pevH-tum*

Thus, the classes 7 and 9 turn out to obey the same pattern. The only remaining problem is long *ī* in the weak class sign, see *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").

One should understand this verb as one where, originally, the root-final consonant is the semivowel *v*. Then, before consonants, IE **ne-v* should regularly turn into Sanskrit *nô*. This is, indeed, what happens here. The pres. ind. sg. is best understood by this comparison:

class	*gaṇa sign	IE root	3. pers. sg.	gaṇa sign
7	**ne*	IE **yug*	IE **yu-ne-g-ti* → *yu-nak-ti*	*na*
5	**ne*	IE **ḱlu* → *śru*	IE **ḱl̥-ne-u-ti* → *śṛ-ṇô-ti*	*nô*

Thus, originally, one has the *na*-infix as in *yu-na-k-ti*. The speakers, however, imagined an OI root *śṛ* to which *nô* was added.

The eighth class as a special instance of the fifth class

Now, and this is the final step, the eighth 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	√	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	IE **ne*	IE **ḱl̥-ne-u-ti* → *śṛ-ṇô-ti*	*nô*
8	IE **ne*	IE **tn̥-ne-u-ti* → *ta-nô-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. 28).

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, the following pattern emerges:

class	strong gaṇa sign	3. pers. sg.	weak gaṇa sign	1. pers. pl.
5	*nô*	*śṛ-ṇô-ti*	*nu*	*śr-ṇu-mas*
7	*na*	*yu-na-k-ti*	*n*	*yu-ñ-j-mas*
8	*ô*	*tan-ô-ti*	*u*	*tan-u-mas*
9	*nā*	*pu-nā-ti*	*nī*	*pu-nī-mas*

If you like, you may also understand the weak signs of the classes 5, 7, and 8 from section B.2.4 (pp. 26). It is not clear why, in the 9. class, one finds *nī* from *nH* which should lead to *ni* instead.

Thus, historically, the four nasal classes all use *na* (going back to IE **ne*). Class 7 is the most basic one. Have a look at figure C.1 to see again how the other classes are derived.

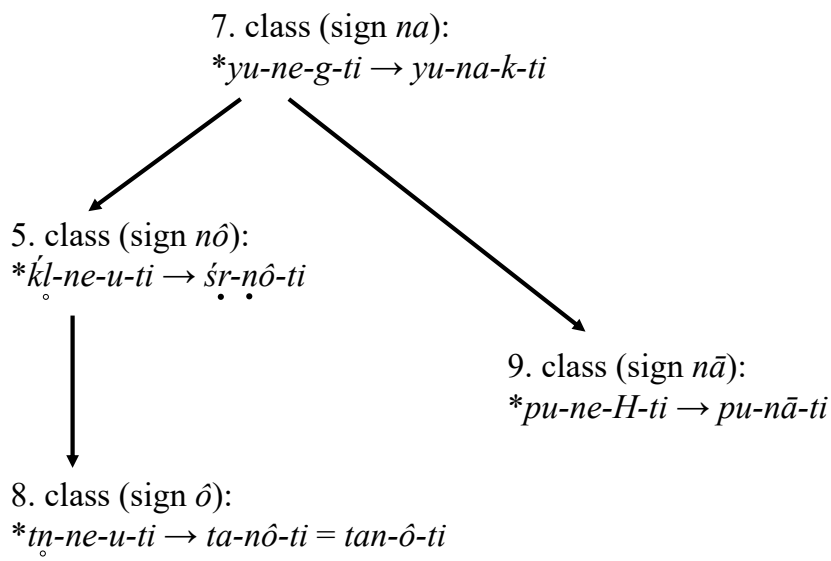

Figure C.1.: The nasal infix classes

C.2.6. The fifth class

Historically, the *nô* and *nu* signs of the fifth class developed from a "misunderstanding" with respect to *śṛ-ṇô-ti*. This was then generalised to other verbs. Here are a few examples, with strong gaṇa sign *nô* and weak gaṇa sign *nu*:

√	3. pers. sg.	1. 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.	1. pers. pl.	translation
chid	*chi-na-t-ti*	*chi-n-d-mas*	to cut
piṣ	*pi-na-ṣ-ṭi*	*pi-ṃ-ṣ-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") is traditionally counted among the 8. class verbs. Remember

√	3. pers. sg.	1. pers. pl.	translation
kṛ	*kar-ô-ti*	*kur-mas*	to make

While this root does not show a nasal infix, one might observe that

◇ *kar-ô-ti* is similar to *tan-ô-ti* and

◇ *kur-mas* 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 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* observe expected short *u*. 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:

√	3. pers. sg.	infinitive	translation
kṛ	*kar-ô-ti*	*kar-tum*	to make
bhṛ	*bhar-a-ti*	*bhar-tum*	to carry
mṛ	*mri-y-a-tê*	*mar-tum*	to die
vas (f.g.)	*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*:

√	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*:

√	3. pers. sg.	infinitive	translation
śru	*śṛ-ṇô-ti*	*śrô-tum*	to listen
stu	*stâu-ti* (Narten)	*stô-tum*	to praise
hu	*ju-hô-ti*	*hô-tum*	to sacrifice

Expected backward assimilation is often encountered:

√	3. pers. sg.	infinitive	translation
khid	*khid-y-a-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. 85)	*sat-tum*	to sit

C.3.2. OI roots ending in a nasal

The OI root is full grade in all the examples below. The labial nasal *m* becomes dental *n* before dental *t*:

√ in f.g.	3. pers. sg.	infinitive	translation
gam	*gacch-a-ti*	*gan-tum*	to go
tan	*tan-ô-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 cerebralisation

Applying aspiration laws

If an OI root ends in a voiced aspirate, the addition of *tum* necessitates the aspiration shift 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: Of two aspirated sounds, the first one becomes deaspirated:

DA IE $C^{\texttt{+asp}}VC^{\texttt{+asp}} \rightarrow$ OI $C^{\texttt{-asp}}VC^{\texttt{+asp}}$

Mixing these sound laws with the palatalisation laws **SPal** (pp. 38), one finds

√	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, the following developments are postulated:

IE **sneig^{w}h-tum* (full grade and infinitive marker *tum*)
→ *snêgh-tum* (**DIPH**, no **SPal** before consonant)
→ *snêg-dhum* (**ASh**)

and

IE **dheugh-tum* (full grade and infinitive marker *tum*)
→ *dhôgh-tum*
→ *dôgh-tum* (**DA**)
→ *dôg-dhum* (**ASh**)

Applying cerebralisation sound laws

In a few verbs, the infinitive comes with cerebralisation. In this subsection, several cerebralisation laws are needed. First, cerebralisation occurs not only after *ṣ*, but also after *ś*:

Cer*D* OI *ṣ/ś* + *t* → OI *ṣṭ*

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-ti* (z.g.!)	*daṃṣ-ṭum*	to bite
diś	*diś-a-ti*	*dêṣ-ṭum*	to show
dṛś	(*paś-y-a-ti*)	*draṣ-ṭum*	to see
dviṣ	*dvêṣ-ṭi*	*dvêṣ-ṭum*	to hate
naś (z.g.!)	*naś-y-a-ti* (z.g.!)	*naṃṣ-ṭum* ← IE **h*$_2$*nenḱ-tu*	to perish
puṣ	*puṣ-y-a-ti*	*pôṣ-ṭum*	to nourish
pracch (f.g.)	*pṛcch-a-ti*	*praṣ-ṭum*	to ask
vṛṣ	*varṣ-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. 26) and different from OI root *kṛ* with infinitive *kar-tum*, some verbs above exhibit *ra* rather than *ar*: *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 infinitive marker *tum*)
→ *yas-tum* (***sz*** before voiceless consonant)

Presumably, leveling (from the PPP) has done the rest (see p. 122):

	yas-tum	
influenced by	*iṣ-ṭa*	with cerebral *ṣ-ṭ*
turns into	*yaṣ-ṭum*	with cerebral *ṣ-ṭ*

... both aspiration and cerebralisation laws

Turning to a second variant of the above sound law, one obtains

$$\textbf{Cer}\boldsymbol{D} \qquad \text{OI } \dot{z} + d/dh \quad \rightarrow \quad \text{OI } \dot{z} + \dot{d}/\dot{d}h$$

The infinitive *vôḍhum* from *vah, vah-a-ti* ("to flow, to drive") goes back to IE **veǵh*. Cerebralisation has no sound-law justification. One should have obtained

IE **veǵh-tum* (full grade and infinitive marker *tum*)
→ *vaǵ-dhum* (**ASh**)
→ *vaz-dhum* (***sz*** before voiced consonant)
→ *vô-dhum* (**CpL*z*** 1. line, pp. 53)

Here, leveling from regularly formed PPP *ū-ḍha* is responsible for *vôḍhum*, with cerebral *ḍh*. In contrast, the following two examples show regular cerebralisation. First, consider the infinitive of *guh, gūhati* ("to hide"):

IE **gheuǵh-tum* (full grade and infinitive marker *tum*)
→ *geuǵ-dhum* (**DA**, **ASh**)
→ *geuz-dhum* (***sz*** before voiced consonant)
→ *geuż-dhum* (**RUKI**)
→ *gôż-ḍhum* (**DIPH**, **Cer*D***)
→ *gô-ḍhum* (**CpL*z*** 5. line, where *ô* is already long)

Second, a very parallel development leads to the infinitive *lê-ḍhum* of *lihati* ("he licks"):

IE **leiǵh-tum* (full grade and infinitive marker *tum*)
→ *leiǵ-dhum* (**ASh**)
→ *leiz-dhum* (***sz*** before voiced consonant)
→ *leiż-dhum* (**RUKI**)
→ *lêż-ḍhum* (**DIPH**, **Cer*D***)
→ *lê-ḍhum* (**CpL*z*** 5. line, where *ê* is already long)

There exist additional examples of cerebral sounds which are not justified by sound laws, but by analogy. The infinitive of *ruh, rôhati* ("to climb") is *rôḍhum*, but the IE root is **h*$_1$*leudh* (IE *dh* can produce OI *h* according to subsection B.3.6, pp. 50), which should have lead to *rôddhum* (similar to *dôgdhum* or *bôddhum*) instead. Also, observe *sah, sahati* ("to tolerate") with infinitive *sô-ḍhum* although the sound laws show a different result:

IE **seǵh-tum* (full grade and infinitive marker *tum*)
→ *saǵ-dhum* (**ASh**)
→ *saz-dhum* (***sz*** before voiced consonant)
→ *sô-dhum* (**CpL*z***)

Here, the analogy with verbs like *guh* above is responsible for cerebralisation.

C.3.4. Laryngeals

The infinitive of quite a few number of verbs can be explained by laryngeal theory, either in line with 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 the infinitive marker *tum*.

√	3. pers. sg.	infinitive	translation
av (f.g.)	**h*$_2$*evH-e-ti* → *av-a-ti*	**h*$_2$*ev-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-toi* → *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	**bhevH-e-ti* → *bhav-a-ti*	**bhev-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. This *i* prevents sandhi between the (normal-grade or, more rarely, zero-grade) root and the infinitive marker *tum*: *paṭh-i-tum*, *pat-i-tum, cumb-i-tum*, *bhāṣ-i-tum*, *êṣ-i-tum*, *côray-itum, kôp-i-tum, kart-i-tum, kathay-i-tum, lêkh-i-tum*

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:

√ in f.g.	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 place
pā	*pi-b-a-ti* (p. 86)	**peh*$_3$*-tum* → *pā-tum*	to drink
śās	*śās-ti*	**ḱeHs-tum* → *śās-tum*	to teach
sthā	*ti-s̤th-a-ti*	**steh*$_2$*-tum* → *sthā-tum* (levelling!)	to stand

C.3.5. Agent nouns, instrument nouns, and action nouns

Masculine action nouns in *a*

Turning to masculine action nouns, many examples can be found with OI *a* added to the full-grade root. The simplest examples are those without semivowels:

√	translation	m. action/agent noun in f.g.	translation
ar (f.g.)	to fit, to connect	*ar-a*	spoke (of a wheel)
kṛ	to make	*kar-a*	doing, hand
		bhās-kar-a	light-maker → sun
gam (f.g.)	to go	*sam-ā-gam-a*	meeting
bhañj (f.g.)	to break	*bhaṅg-a*	breaking, defeat
vṛ	to choose	*var-a*	boon

and

√	translation	m. agent noun in l.g.	translation
kṛ	to make	*kumbha-kār-a*	pot-maker → potter

If the roots contain the semivowels *i* or *u*, the diphthongs *ê* or *ô* show up:

√	translation	m. action noun in f.g.	translation
khid	to be depressed	*khêd-a*	tedium
diś	to show	*dêś-a*	country
bhid	to split	*bhêd-a*	separation, split
vid	to know	*vêd-a*	sacred knowledge

and

√	translation	m. action noun in f.g.	translation
kup	to be angry	*kôp-a*	anger
krudh	to be angry	*krôdh-a*	anger
lubh	to be desire	*lôbh-a*	greed

If a root ends in *i*, note the operation of ***SV*** before the thematic vowel *a*:

√	translation	m. action noun in f.g.	translation
ji	to conquer	*jay-a*	victory

Similarly for *i* ("to go"), where the meanings vary with the prepositions:

√	translation	action noun in f.g.	translation
ati-i	to excel	*aty-ay-a*	transgression
adhi-i	to study	*adhy-ay-a* (also: *adhyāya*)	chapter, section
anu-i	to follow	*anv-ay-a*	succession, progeny
abhi-i	to arrive	*abhy-ay-a*	arrival (of darkness)
ud-i	to go up	*ud-ay-a*	appearance (of a star)
upa-i	to go towards	*upa-ay-a* → *upāy-a*	means, approach
ny-ā-i	to come down	*ny-ā-ay-a* → *nyāy-a*	rule, method
pra-i	to set off	*pra-ay-a* → *prāy-a*	departure from life
vi-i	to disappear	*vy-ay-a*	loss, cost
		a-vy-ay-a	invariant
		a-vy-ay-a-m n. (!)	indeclinable
		a-vy-ay-a	the eternal one, Viṣṇu

Since laryngeals are lost without trace between a consonant (here: the semivowel *y* or *v*, respectively) and a vowel, they affect the root vowel, but not the action noun:

√	translation	action noun in f.g.	translation
bhī ← **bhiH*	to fear	*bhay-a-m* n. (!) ← **bheyH-o-m*	fear, danger
bhū ← **bhuH*	to be	*bhav-a* m. ← **bhevH-o*	being, state

Consider

√	3. pers. sg.	translation	m. action noun in f.g.	translation
yuj	*yu-ñ-j-a-tê* ← IE **yung-e-toi*	he yokes	*yôg-a* m. ← IE **yeug-o*	joining

Secondary palatalisation (**SPal**) lies behind

◇ palatal consonant *j* in *yu-ñ-j-a-tê* (here, the IE thematic vowel is *e*) versus

◇ non-palatal consonant *g* in *yôg-a* (the vowel *a* goes back to IE *o*)

This pattern can also be seen in

√	3. pers. sg.	translation	m. action noun in f.g.	translation
arc (f.g.)	*arc-a-ti*	he shines	*ark-a*	sun
bhaj (f.g.)	*bhaj-a-ti*	he divides	*bhag-a*	wealth

√	3. pers. sg.	translation	m. action noun in f.g.	translation
bhuj	*bhu-na-k-ti*	he enjoys	*bhôg-a*	enjoyment
mih	*mêh-a-ti*	he urinates	*mêgh-a*	rain
yuj	*yu-na-k-ti*	he yokes	*yôg-a*	joining
vi-vic	*vi-vi-na-k-ti*	he sifts	*vi-vêk-a*	discrimination
śuc	*śôc-a-ti*	he grieves	*śôk-a*	grief
sṛj	*sṛj-a-ti*	he releases	*sarg-a* (but see p. 122)	letting go

Neuter nouns in *ana*

Many neuter action nouns in *ana* are found. The first *a* seems to go back to an IE front vowel, i.e., IE **eno* → OI *ana*. Otherwise secondary palatalisation in *bhôj-ana-m* or *vac-ana-m* in the following table could not be explained:

√	translation	n. action noun in f.g.	translation
kṛ	to make	*kar-aṇa-m*	producing
gam (f.g.)	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 (f.g.)	to speak	*vac-ana-m*	speech
vad (f.g.)	to speak	*vad-ana-m*	speaking (→ mouth)
vi-as (f.g.)	to dissipate	*vy-as-ana-m*	vice
śru	to hear	*śrav-aṇa-m*	hearing
su	to press	*sav-ana-m*	pressing, Soma
sū	to beget	*sav-ana-m*	childbirth

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*	approaching
pra-i	to set off, to die	*pra-ay-ana-m* → *prāy-aṇa-m*	going forth, beginning

Remember also *rāma-ay-ana-m* → *rāmāy-aṇa-m*.

Some common laryngeal roots also use the *ana* suffix which looks like a *na* suffix. For example, from *dā* ("to give"), one obtains

$$dā\text{-}ana \quad \rightarrow \quad \text{OI } dā\text{-}na$$

and similarly

√ in f.g.	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 in *ana*

Rarely, the suffix *ana* may also point to an agent noun:

√	translation	m. (!) agent (!) noun in f.g.	translation
nand	to delight	*nand-ana*	delighter
pū	to purify	*pav-ana*	purifyer → wind

Neuter nouns in *as*

Very common neuter words take the suffix *as*. Here is a list:

√	translation	n. action noun in f.g.	translation
cit	to observe	*cêt-as*	thought
tap (f.g.)	to burn	*tap-as*	austerity
tij	to make sharp	*têj-as*	sharpness, heating
nam (f.g.)	to bow	*nam-as*	bowing, homage
pī	to become fat	*pay-as*	milk
man (f.g.)	to think	*man-as*	thought
vac (f.g.)	to speak	*vac-as*	speech

Neuter nouns in *is*

Neuter nouns in *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 in *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
budh	*bôd-dhum*	to be awake	*bôd-dhar*	one who knows
bhṛ	*bhar-tum*	to carry	*bhar-tar*	husband
vac	*vak-tum*	to speak	*vak-tar*	speaker
vah	*vô-ḍhum*	to drive	*vô-ḍhar*	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 $^*khen\text{-}H$ 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* ← $^*khen\text{-}H\text{-}tor$.

Instrument nouns in *tra*

The instruments used by the agents from the previous subsection are characterised by the suffix *tra* + neuter ending *m*. For example, the "drinker" *pā-tar* 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 (f.g.)	*gā-tum*	to go	*gā-tra-m*	body limb
chad (f.g.)	*chat-tum*	to cover	*chat-tra-m/chatra-m*	umbrella
duh	*dôg-dhum*	to milk	*dôg-dhra-m*	milk-pail
dham (f.g.)		to exhale	*dhami-tra-m* (p. 83)	kindling instr.
nī	*nê-tum*	to lead	*nê-tra-m*	eye
pat (f.g.)	*pat-i-tum*	to fly	*pat-tra-m/patra-m*	wing, leaf
pā (f.g.)	*pā-tum*	to drink	*pā-tra-m*	cup, vessel
yam (f.g.)	*yan-tum*	to hold up/back	*yan-tra-m*	band, instrument
vac (f.g.)	*vak-tum*	to speak	*vak-tra-m*	mouth
vas (f.g.)	*vas-i-tum*	to clothe	*vas-tra-m*	clothing
śas (f.g.)	*śas-tum*	to kill	*śas-tra-m*	weapon
śās (f.g.)	*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

Agent or action nouns in *tu*

There exist a few agent or action nouns in *tu*:

√	infinitive	translation	*tu* noun	translation
gā (f.g.)	*gā-tum*	to go	*gā-tu* m.	going, motion
vas (f.g.)	*vas-tum*	to dwell, to be	*vas-tu* n.	substance
hi	*hê-tum*	to send, to impel	*hê-tu* m.	reason, argument

Nouns in *man*

Nouns in *man* are also derived from the full grade. They seem to indicate the result of an action:

√	infinitive	translation	n. noun in f.g.	translation
kṛ	*kar-tum*	to make	*kar-man*	action
chad (f.g.)	*chat-tum*	to cover	*chad-man*	roof, protection
jan (f.g.)	*jan-i-tum*	to beget	*jan-i-man, jan-man*	birth

C.3.6. Comparative and superlative

Comparative and superlative forms are often formed with *tara* and *tama* 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 one finds the full grade in both comparative and superlative. This may hold for *uru* and *guru* above and is quite clear in the following table:

√	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 built from the zero grade plus *ra* (as shown on pp. 130). This *r* is not present in the comparative and superlative forms.

2. In contrast to *mard-ana-m* (p. 105) with *ar*, here one finds *ra* for unclear reasons.

C.3.7. Future in *sy*

Forms with and without RUKI

The future meaning has developed from a desiderative one. See 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 on pp. 136. 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 obvious examples:

$\sqrt{}$ 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*

Consider next full grade OI roots with vowel *a*:

$\sqrt{}$ in f.g.	translation	infinitive	future, 3. sg.
man	to think	*man-tum*	*maṃ-sy-a-ti* (***Ns***)
yaj	to sacrifice	*yaṣ-ṭum*	*yak-ṣy-a-ti*
ram	to enjoy	*ran-tum*	*raṃ-sy-a-tê* (***Ns***)
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* (***Ns***)

In all these examples, backward assimilation to the unvoiced *s* is operative. **RUKI** is encountered after *k* in *vak-ṣy-a-ti*. Also, *labh* and *lap-sy-a-tê* show that the *s* cannot become aspirated, i.e., the aspiration is shifted forward, but has no effect.

Roots with *i* lead to full grade *ê* and hence to

$\sqrt{}$	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

$\sqrt{}$	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	**bhev-H-tum* → *bhav-i-tum*	*bhav-i-ṣy-a-ti*

By analogy, this convenient quasi-thematic *i* spreads to other roots without any laryngeal justification:

√	translation	infinitive	future, 3. sg.
kṛ	to make	*kar-tum*	*kar-i-ṣy-a-ti*
gam (f.g.)	to go	*gan-tum*	*gam-i-ṣy-a-ti*
tan (f.g.)	to stretch	*tan-tum*	*tan-i-ṣy-a-ti*
budh	to be awake	*bôdh-i-tum*	*bôdh-i-ṣy-a-ti*
bhṛ	to carry	*bhar-tum*	*bhar-i-ṣy-a-ti*
man (f.g.)	to think	*man-tum*	*man-i-ṣy-a-ti/tê*
smṛ	to remember	*smar-tum*	*smar-i-ṣy-a-ti*
likh	to write	*lêkh-i-tum*	*lêkh-i-ṣy-a-ti*
vad (f.g.)	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*

One motivation for the use of "thematic" *i* is clear from the last two verbs in the table above. Without quasi-thematic *i*, they show identical future forms:

√	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*

Aspiration laws (revelation of aspirated root initial)

The aspiration laws lead to interesting future forms:

1. The aspiration shift **ASh** cannot affect *s* or *sy*.

2. Then, there is no need for root-initial deaspiration and IE aspiration becomes apparent:

√	translation	infinitive	future, 3. sg.
gāh (f.g.)	to dive	*gā-ḍhum*	*ghāk-ṣy-a-tê*
dah (f.g.)	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 (f.g.)	to bind	*bad-dhum* (z.g.!)	*bhant-sy-a-ti* ← **bhendh-s-*
budh	to be awake	*bôdh-i-tum*	*bhôt-sy-a-ti* ← **bheudh-s-*

Primary palatalisation (revelation of root-final)

Primary palatalisation is seen in the sound law

$$\text{IE } \acute{k} \rightarrow \text{OI } ś.$$

Now, IE $\acute{k}$ is still visible in OI future forms as OI k:

√	translation	infinitive	future, 3. sg.
daṃś (f.g.!)	to bite	*daṃṣ-ṭum*	*daṃk-ṣy-a-ti* ← **denḱ-s-*
diś	to show	*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:

$\sqrt{}$	translation	infinitive	future, 3. sg.
vas	to dwell	*vastum*	*vat-sy-a-ti*

C.3.8. Causatives

As a rule, causatives are built from the full grade. Let us first consider *i*-roots such as

$$\underbrace{viś}_{\text{OI root in zero grade}} \quad , \quad \underbrace{vêś}_{\text{root in full grade}} \quad - \quad \underbrace{ay}_{\text{suffix}} \quad - \quad \underbrace{a}_{\text{thematic vowel}} \quad - \quad \underbrace{ti}_{\text{ending 3. pers. sg.}}$$

and roots with *u*:

◇ *bôdh-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 → decorates”) ← *śubh* (“to shine”)

OI roots ending on long vowel $\bar{a}$ (full grade due to a 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 → makes pay”) ← *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”)

Since the IE root vowel is *o* for causatives, Brugmann’s law applies. Therefore, one often observes $\bar{a}$:

◇ *kār-ay-a-ti* (“causes to do → orders”) ← *kṛ* (“to make”)

◇ *tyāj-ay-a-ti* (“causes to abandon → expels”) ← *tyaj* (“to abandon”)

◇ *pāṭh-ay-a-ti* (“causes to read → teaches”) ← *paṭh* (“to read”)

◇ *mār-ay-a-ti* (“causes to die → kills”) ← *mṛ* (“to die”)

◇ *vāc-ay-a-ti* (“makes [a text] speak → read”) ← *vac* (“to speak”)

◇ *śrāv-ay-a-ti* (“causes to hear → proclaim”) ← *śru* (“to hear”)

◇ *sād-ay-a-ti* (“causes to sit → places”) ← *sad* (“to sit”)

Application of Brugmann’s law is regularly prevented by laryngeals. In the first of these examples, the two consonants *n* and *H* follow IE *o*:

√	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* (s.v. *dam*)	he tames

In contrast, observe “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***,

◇ *cumb-aya-ti* (“causes to kiss”) ← *cumb* (“to kiss”), where the two consonants following *u* might be responsible for the zero grade.

C.3.9. Gerunds in *am* and *yam*

There exists a rare gerund that is formed with *am*. It mostly uses the full grade:

√	translation	gerund in *am*, full grade
kṣip	to throw	*kṣêp-am*
dṛś	to see	*darś-am*
bandh (f.g.)	to bind	*bandh*-am
bhuj	to enjoy	*bhôj-am*

By **L*o***, one often witnesses long *ā* in open syllables:

√	translation	gerund in *am*, lengthened grade
kṛ	to make	*kār-am*
grah (f.g.)	to grab	*grāh-am*
taḍ (f.g.)	to hit	*tāḍ-am*
dah (f.g.)	to burn	*dāh-am*
paṭh (f.g.)	to read	*pāṭh-am*

√	translation	gerund in *am*, lengthened grade
vah (f.g.)	to carry	*vāh-am*
śru	to hear	*śrāv-am*
smṛ	to remember	*smār-am*

Verbs like *dhyâi* (but see p. 82) regularly lead to *dhyāy-am*:

√	translation	gerund in *am*, full grade
gâi	to sing	*gāy-am*
trâi	to protect	*trāy-am*
dhyâi	to meditate	*dhyāy-am*

The root *dhyâi* seems to be a misunderstanding in the sense that *dhyāy-a-ti* was considered a 1. class verb from root *dhyâi*. Historically, it might be more correct to consider the root *dhyā*. Of course, *dhyā-am* → *dhyām* would hardly be recognisable. In any case, *dhyāy-am* might (on the basis of the root *dhyā*) be segmented as *dhyā-yam*. And hence a gerund marker *yam* came into being:

√	translation	gerund in *yam*, 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, the so-called root nouns are presented. Here, 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. Since nom. sg. m. and f. are usually characterised by *s*, the latter would have been lost here due to **CCl**. The root-final consonant is characterised by loss of both voice and aspiration as explained on pp. 47.

Dental root-final consonant

In the case of dental root-final consonant, the "no voice, no aspiration" rule yields the obvious results:

◇ nom. sg. *yut* (stem *yudh*) ("battle")

◇ nom. sg. *mṛt* (stem *mṛd*) ("clay")

◇ nom. sg. *vidyut* (stem *vidyut*) ("flash of lightning")

Full grade

The root may sometimes be in full grade, for pretty obvious reasons (see pp. 81):

◇ nom. sg. *upa-ni-ṣat* (stem *upa-ni-ṣad*) ← IE **sed* (post-Vedic, preclassical literature)

◇ nom. sg. *saṃ-sat* (stem *saṃ-sad*) ("assembly") ← IE **sed*

◇ nom. sg. *pari-ṣat* (stem *pari-ṣad*) ("assembly") ← IE **sed*

◇ nom. sg. *ā-pat* (stem *ā-pad*) ("calamity") ← IE **ped*

k or *ṭ* as root-final consonants

When the root ends in OI *ś*, one should not be suprised to see OI *k* instead because OI *ś* goes back to IE palatal *ḱ* (p. 37):

◇ nom. sg. *dṛk* (stem *dṛś*) ("sight") ← IE root **derḱ*

But one also finds *ṭ*:

◇ nom. sg. *viṭ* (stem *viś*) ("house, people") ← IE root **veiḱ*

Examples for root-final velars are

◇ nom. sg. *bhuk* (stem *bhuj*) ("enjoyment, utility") ← IE root **bheug*

◇ nom. sg. *miṭ* (stem *mih*) ("mist, haze, fog") ← IE root **meigh*

◇ nom. sg. *śuk* (stem *śuc*) ("flame, grief") ← IE root **ḱeuk*

See subsection B.3.5, pp. 47 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:

$$\text{zero-grade root} \quad + \quad ta \text{ (IE } {}^{*}to)$$

Consider these examples with syllabic *ṛ* in both OI root and PPP:

√	3. pers. sg.	PPP	translation
kṛ	*kar-ô-ti*	*kṛ-ta*	made
bhṛ	*bhar-a-ti*	*bhṛ-ta*	carried
mṛ	*mri-ya-tê*	*mṛ-ta*	dead
smṛ	*smar-a-ti*	*smṛ-ta*	remembered
hṛ	*har-a-ti*	*hṛ-ta*	taken

Roots with *i* preserve this *i* in the PPP:

√	3. pers. sg.	PPP	translation
i	*ê-ti*	*i-ta*	gone
kṣip	*kṣip-a-ti*	*kṣip-ta*	thrown
ji	*jay-a-ti*	*ji-ta*	defeated

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*	liberatee
yuj	*yu-na-k-ti*	*yuk-ta*	joined
vac (f.g.)	*vak-ti*	*uk-ta*	spoken
vap (f.g.)	*vap-a-ti*	*up-ta*	sowed
śru	*śṛ-ṇô-ti*	*śru-ta*	listened
stu	*stâu-ti* (Narten)	*stu-ta*	praised
hu	*ju-hô-ti*	*hu-ta*	sacrificed

Instead of the *ta* marker, a few verbs use *na*. All the roots in the table below end in *d* so that the expected backward assimilation results:

√	3. pers. sg.	PPP	translation
ud	*u-na-t-ti*	*un-na*	wet
khid	*khid-ya-ti*	*khin-na*	depressed
tud	*tud-a-ti*	*tun-na*	hurt
nud	*nud-a-ti*	*nun-na*	pushed
pad	*pad-ya-tê*	*pan-na*	fallen, gone
bhid	*bhi-na-t-ti*	*bhin-na*	broken
vā	*vāyati*	*ū-na* ← IE $^*h_1uh_2$*-no*	less, deficient
sad (f.g.)	*sīd-a-ti*	*san-na*	set down

But stems that end in OI *j* also use the *na* marker:

√ in f.g.	3. pers. sg.	PPP	translation
bhañj	*bha-na-k-ti*	*bhag-na*	broken
majj	*majj-a-ti*	*mag-na*	sunk

In contrast to the PPP, the infinitive (pp. 97) is normally formed by adding OI *tum* to the full-grade root. Since the suffixes begin with *t* in both cases, there are quite a number of similarities as will become obvious in the following subsections.

Basically, gerunds ending with *tvā* use the zero-grade root as does the PPP. However, in many verbs, the infinitive seems to have influenced the formation of the gerund. Hence, there exist 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. An important class concerns the OI roots ending in a nasal. According to subsection B.5.2 (pp. 69), a nasal that becomes syllabic turns into OI *a*. Consider these examples:

√ in f.g.	3. pers. sg.	PPP	translation
gam	*ga-cch-a-ti*	IE **gm̥-to* → *ga-ta*	gone
tan	*ta-nô-ti*	IE **tn̥-to* → *ta-ta*	stretched

and this list:

√ in f.g.	3. pers. sg.	PPP	translation
nam	*nam-a-ti*	*na-ta*	bent
man	*man-ya-tê*	*ma-ta*	believed
yam	*yacch-a-ti*	*ya-ta*	restrained
ram	*ram-a-tê*	*ra-ta*	pleased
han	*han-ti*	*ha-ta*	struck

The last example goes back IE **g*^{w}*hen* ("to kill, to hit"), where secondary palatalisation (before IE *e*) produces *han-ti*. Secondary palatalisation cannot be invoked for the zero grade, where one should have obtained **g*^{w}*hn̥-to* → *gha-ta*. *ha-ta* is easily explained by proportional analogy:

tan	with root-initial consonant *t*:	*ta-ta*
just as		
han	with root-initial consonant *h*:	*ha-ta*

C.4.4. Aspiration and cerebralisation

Applying aspiration laws

If an OI root ends in a voiced aspirate, the addition of *ta* necessitates the aspiration shift **ASh** (see section B.3.3, pp. 39):

√	3. pers. sg.	PPP	translation
kṣubh	*kṣubh-ya-ti*	*kṣub-dha*	upset
yudh	*yudh-ya-tê*	*yud-dha*	fought
labh (f.g.)	*labh-a-tê*	*lab-dha* (f.g.!)	obtained
vṛdh	*vardh-a-tê*	*vṛd-dha*	grown

Note that *lab-dha* is full grade. While *l* might become syllabic, the resulting u.at. *l̥b-dha* would be unusual.

Sometimes, Grassmann's law is also applied. Nice examples are provided by these PPP:

√	future 3. pers. sg.	PPP	translation
bandh (f.g.)	*bhant-sy-a-ti* ← **bhendh-s-*	*bad-dha* ← **bhn̥dh-to*	bound
budh	*bhôt-sy-a-ti* ← **bheudh-s-*	*bud-dha* ← **bhudh-to*	awake

where

◇ the root initial *bh* becomes deaspirated (**DA**)

◇ the root final *dh* undergoes the aspiration shift (**ASh**) due to Bartholomae.

Consider, now, OI f.g. root *dah* that leads to the PPP

IE **dheg*^{w}*h-to* (f.g. with PPP marker *to*)
→ *dhegh-to* (no **SPal** before consonant *t*)
→ *dhag-dha* (***aā***, **ASh**)
→ *dag-dha* (**DA**)

OI z.g. root *snih* leads to

IE **snig*^{w}*h-to* (z.g. with PPP marker *to*)
→ *snigh-to* (no **SPal** before *t*)
→ *snig-dha* (**ASh**, ***aā***)

Consider these examples:

√	3. pers. sg.	PPP	translation
dah (f.g.)	*dah-a-ti*	**dheg*^{w}*h-to* → *dag-dha* (f.g.!)	burned
dih	*dêg-dhi*	**dhigh-to* → *dig-dha*	smeared

√	3. pers. sg.	PPP	translation
duh	*dôg-dhi*	**dhugh-to* → *dug-dha*	milked
snih	*snih-y-a-ti*	**snig*^{w}*h-to* → *snig-dha*	loved

A small mystery is provided by *nah* ("to bind") with PPP *nad-dha*. Presumably, *nadh* is the "correct" OI full-grade stem from which *nah* was produced as a dialectal variant (see pp. 50). 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 u.at. *addha* is not found in the dictionaries. Also unattested is a hypothetic full-grade root *nandh* which could have produced the PPP *nad-dha* just like *bandh* ("to bind") leads to *bad-dha.*

Applying cerebralisation sound laws

In a number of verbs, the PPP involves cerebralisation, 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* with

IE **dn̥ḱ-to* (z.g. with PPP marker *to*)
→ *daś-to* (syllabic *n̥* → *a*, **PPal**)
→ *daṣ-ṭa* (**Cer*D***, ***aā***)

◇ *dṛś* ("to see") ← IE **derḱ* with

IE **dr̥ḱ-to* (z.g. with PPP marker *to*)
→ *dṛś-to* (**PPal**)
→ *dṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *pracch* ("to ask") ← IE **preḱ-sḱ* with

IE **pr̥ḱ-to* (z.g. with PPP marker *to*)
→ *pṛś-to* (**PPal**)
→ *pṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *viś* ("to enter") ← IE **veiḱ* with

IE **viḱ-to* (z.g. with PPP marker *to*)
→ *viś-to* (**PPal**)
→ *viṣ-ṭa* (**Cer*D***, ***aā***)

A second important cerebralisation 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 PPP marker *to*)
→ *iṣ-to* (**RUKI**)
→ *iṣ-ṭa* (**Cer*D***, ***aā***)

◇ *kṛṣ* (“to plough”) ← IE **kers* with

IE **kr̥s-to* (z.g. with PPP marker *to*)
→ *kṛṣ-to* (**RUKI**)
→ *kṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *dviṣ* (“to hate”) ← IE **dveis* with

IE **dvis-to* (z.g. with PPP marker *to*)
→ *dviṣ-to* (**RUKI**)
→ *dviṣ-ṭa* (**Cer*D***, ***aā***)

◇ *vṛṣ* (“to rain”) ← IE **vers* with

IE **vr̥s-to* (z.g. with PPP marker *to*)
→ *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 marker *to*)
→ *is-to* (***sz*** before voiceless cons.)
→ *iṣ-to* (**RUKI**)
→ *iṣ-ṭa* (**Cer*D***, ***aā***)

One might think that the PPP of *sṛj* (“to throw, to create”) functions similarly:

IE **sr̥ǵ-to* (z.g. with PPP marker *to*)
→ *sṛs-to* (***sz*** before voiceless cons.)
→ *sṛṣ-to* (**RUKI**)
→ *sṛṣ-ṭa* (**Cer*D***, ***aā***)

But the contrast

◇ *sṛj-a-ti* ← IE **sr̥g-e-ti*

◇ *sarg-a* ← IE **serg-o*

points to IE velar *g* and secondary palatalisation in *sṛj-a-ti*. This discrepancy of IE palatal *ǵ* in *sṛṣṭa* versus IE velar *g* in *sarga* is a serious difficulty.

Interestingly, *iṣ-ṭa* is the regularly formed PPP of both

◇ OI *iṣ* ("to wish") ← IE full grade **h₂eis* (see p. 122) and

◇ OI *yaj* ("to sacrifice") ← IE full grade **yeǵ* (see above)

... both aspiration and cerebralisation 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* (***SV***) so that one obtains

IE **uǵh-to* (z.g. with PPP marker *to*)
→ *uǵ-dho* (**ASh**)
→ *uz-dho* (***sz*** before voiced stop)
→ *uẓ-dho* (**RUKI**)
→ *uẓ-ḍha* (**Cer*D***, ***aā***)
→ *ū-ḍha* (**CpL*z*** 3. line)

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 PPP marker *to*)
→ *liǵ-dho* (**ASh**)
→ *liz-dho* (***sz*** before voiced stop)
→ *liẓ-dho* (**RUKI**)
→ *liẓ-ḍha* (**Cer*D***, ***aā***)
→ *lī-ḍha* (**CpL*z*** 2. line)

Similarly, but with Grassmann's law, *guh* ("to hide") goes back to IE **gheuǵh* and one gets

IE **ghuǵh-to* (z.g. with PPP marker *to*)
→ *guǵ-dho* (**DA** and **ASh**)
→ *guz-dho* (***sz*** before voiced stop)
→ *guẓ-dho* (**RUKI**)
→ *guẓ-ḍha* (**Cer*D***, ***aā***)
→ *gū-ḍha* (**CpL*z*** 3. line)

Also, with root vowel $\underset{\circ}{l}$ rather than *i* or *u*, one finds IE **delǵh* ("to be fix") with PPP

IE **d*$\underset{\circ}{l}$*ǵh-to* (z.g. with PPP marker *to*)
→ *dṛǵ-dho* (***rl*** and **ASh**)
→ *dṛz-dho* (***sz*** before voiced stop)
→ *dṛẓ-dho* (**RUKI**)
→ *dṛẓ-ḍha* (**Cer*D***, ***aā***)
→ *dṛ-ḍha* (loss of voiced *ẓ* without expected **CpL*z***)

As in similar infinitive cases, 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.3.6, pp. 50) 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 PPP marker *to*)
→ *seǵ-dho* (**ASh**)
→ *saz-dha* (***sz*** before voiced stop, ***aā***)
→ *sô-dha* (**CpL*z*** 1. line)

Here, as in *rūḍha* above, 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:

IE 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 $C^{\texttt{+lab}}\underset{\circ}{r}$	IE $C^{\texttt{+lab}}\underset{\circ}{r}H \rightarrow C\bar{u}r$
after $C^{\texttt{-lab}}\underset{\circ}{r}$	IE $C^{\texttt{-lab}}\underset{\circ}{r}H \rightarrow C\bar{\imath}r$
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 $\bar{u}$:

$\surd$	3. pers. sg.	PPP	translation
$n\bar{\imath}$	$^*neyH\text{-}e\text{-}ti \rightarrow nay\text{-}a\text{-}ti$	$^*ni\text{-}H\text{-}to \rightarrow n\bar{\imath}\text{-}ta$	led
$bh\bar{\imath}$	$^*bhi\text{-}bheiH\text{-}ti \rightarrow bi\text{-}bh\hat{e}\text{-}ti$	$^*bhiH\text{-}to \rightarrow bh\bar{\imath}\text{-}ta$	afraid
$bh\bar{u}$	$^*bhevH\text{-}e\text{-}ti \rightarrow bhav\text{-}a\text{-}ti$	$^*bhu\text{-}H\text{-}to \rightarrow bh\bar{u}\text{-}ta$	been
$p\bar{u}$	$^*pu\text{-}ne\text{-}H\text{-}ti \rightarrow pu\text{-}n\bar{a}\text{-}ti$	$^*pu\text{-}H\text{-}to \rightarrow p\bar{u}\text{-}ta$	purified

Now come PPP formed with the marker *na* rather than *ta*:

$\surd$	3. pers. sg.	PPP	translation
$l\bar{\imath}$	$^*liH\text{-}y\text{-} \rightarrow l\bar{\imath}\text{-}ya\text{-}t\hat{e}$	$^*liH\text{-}no \rightarrow l\bar{\imath}\text{-}na$	attached
$l\bar{u}$	$^*lu\text{-}ne\text{-}H\text{-}ti \rightarrow lu\text{-}n\bar{a}\text{-}ti$	$^*luH\text{-}no \rightarrow l\bar{u}\text{-}na$	cut off

Rather difficult is

$\surd$ in f.g.	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. 86)	$^*ph_3i\text{-}to \rightarrow {}^*pih_3\text{-}to \rightarrow p\bar{\imath}\text{-}ta$	drunk

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 $CHC \rightarrow CiC$":

$\surd$ in f.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)	given
$dh\bar{a}$	$^*de\text{-}dheh_1\text{-}ti \rightarrow da\text{-}dh\bar{a}\text{-}ti$	$^*dhh_1\text{-}to \rightarrow hi\text{-}ta$ (2)	set, placeed
$sth\bar{a}$	$ti\text{-}\dot{s}\dot{t}h\text{-}a\text{-}ti$	$^*sth_2\text{-}to \rightarrow sthi\text{-}ta$ (3)	stood

1. *dā* 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 *dhā* sometimes turns into *h* (see p. 50).

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.

Laryngeals can lengthen syllabic nasals:

√ in f.g.	3. pers. sg.	PPP	translation
kam	no present tense	$^*kmH$*-to* → *kān-ta* (2)	loved
kram	$^*krmH$*-ye-ti* → *krām-ya-ti* (1)	$^*krmH$*-to* → *krān-ta* (1)	walked
khan	$^*khenH$*-e-ti* → *khan-a-ti*	$^*khnH$*-to* → *khā-ta*	dug
jan	$^*ǵnh_1$*-ye-toi* → *jā-ya-tê*	$^*ǵnh_1$*-to* → *jā-ta*	born
dam	$^*dmH$*-ye-ti* → *dām-ya-ti* (1)	$^*dmH$*-to* → *dān-ta* (1)	tamed
śam	$^*ḱmH$*-ye-ti* → *śām-ya-ti* (1)	$^*ḱmH$*-to* → *śān-ta* (1)	quiet
śram	$^*ḱrmH$*-ye-ti* → *śrām-ya-ti* (1)	$^*ḱrmH$*-to* → *śrān-ta* (1)	tired

1. *krām-ya-ti* belongs to the 4. class, i.e., it is built on the zero-grade root. Here, "IE CmH → *Cām*" (**Lar_SY**) is regularly applied.

2. *kān-ta* is readily explained by this laryngeal rule and by **BA.**

In contrast, *jñā-ta* from the root *jñā* (IE $^*ǵneh_3$) can only be explained by levelling. See the dictionary.

Finally, some comments on a group of verbs where long vowels *ī* or *ū* go back to rH:

$$\begin{aligned} \text{IE } C^{+\text{lab}}rH &\rightarrow C\bar{u}r \\ \text{IE } C^{-\text{lab}}rH &\rightarrow C\bar{\imath}r \end{aligned}$$

All these forms have *na* as the PPP marker (as do *lī-na* and *lū-na* above):

√	3. pers. sg.	PPP	translation
kṝ	IE root $^*kerH$ (no **SPal**!)	$^*krH$*-no* → *kīr-ṇa*	scattered

√	3. pers. sg.	PPP	translation
jr̥̄	**ǵr̥H-ye-ti* → *jr̄-ya-ti*	**jr̥-H-no* → *jr̄-ṇa*	wasted away
tr̥̄	**terH-e-ti* → *tar-a-ti*	**tr̥-H-no* → *tr̄-ṇa*	passed
dr̥̄	**dr̥-ne-H-ti* → *dṛ-ṇā-ti*	**dr̥-H-no* → *dr̄-ṇa*	torn
pr̥̄	**pl̥-ne-H-ti* → *pṛ-ṇā-ti*	**pl̥-H-no* → *pūr-ṇa*	filled

It seems that *stṛ, stṛṇôti* ("to spread") also belongs to this list because one has the PPP *stīr̥-ṇa* similar to *tīr̥ṇa.* Presumably, the IE root is **sterH.* But note the second PPP *stṛta.*

As a final (almost regular) example, turn to

√	3. pers. sg.	PPP	translation
div	**diHv-ye-ti* → *dīv-ya-ti*	**dyHv-to* → **dyuH-to* → *dyū-ta*	to play

Here, starting with IE **deiHv*, the zero-grade present indicative *dīv-ya-ti* is regular. Sound-law **Lar_MTh** yields the PPP.

Note that many verbs show quasi-thematic vowel *i* between the root (zero or even full grade) and the infinitive marker *ta*: *paṭh-i-ta*, *cumb-i-ta*, *bhāṣ-i-ta*, *uṣ-i-ta* (from *vas* with **RUKI**). Inserting *i* makes the forms more transparent.

C.4.6. Nouns and adjectives

Feminine action nouns in *ti*

Having dealt with feminine action nouns with zero suffix above (see pp. 115), consider now derivations with suffixes. For many verbs, the PPP provides a model of how to form the noun in *ti*. Pretty obvious cases are

√	PPP	translation	noun in *ti*	translation
kṛ	*kṛ-ta*	to make	*kṛ-ti*	doing, deed
kṣip	*kṣip-ta*	to throw	*kṣip-ti*	throwing
bhṛ	*bhṛ-ta*	to carry	*bhṛ-ti*	support
muc	*muk-ta*	to liberate	*muk-ti*	liberation
mṛ	*mṛ-ta*	to die	*mṛ-ti*	death
yuj	*yuk-ta*	to join	*yuk-ti*	connection
vac (f.g.)	*uk-ta*	to speak	*uk-ti*	speech
vap (f.g.)	*up-ta*	to sow	*up-ti*	sowing seeds

√	PPP	translation	noun in *ti*	translation
śru	*śru-ta*	to listen	*śru-ti*	vedic text
stu	*stu-ta*	to praise	*stu-ti*	praise, hymn
smṛ	*smṛ-ta*	to remember	*smṛ-ti*	tradition

Furthermore, *s-ti* ("being (close to a master) → dependent, vassal") is the regular noun in *ti* from *as* ("to be"). One also finds Ved. *sti-pā* ("protecting the dependents"). The very common root *i* ("to go") is contained in these nouns in *ti*:

√ *i*	PPP	translation	noun in *ti*	translation
adhi-i	*adhī-ta*	to study	*adhī-ti*	study
anu-i	*anv-i-ta*	to follow	*anv-i-ti*	following after
abhi-i	*abhī-ta*	to arrive	*abhī-ti*	attack
ud-i	*ud-i-ta*	to go up	*ud-i-ti*	sunrise
upa-i	*upê-ta*	to go towards	*upê-ti*	approach
pra-i	*prê-ta*	to set off	*prê-ti*	escape

OI roots ending in a nasal lead to the feminine noun in *ti* seen in the following table:

√ in f.g.	PPP	translation	noun in *ti*	translation
gam	*ga-ta*	to go	*ga-ti*	path
tan	*ta-ta*	to stretch	*ta-ti*	mass, crowd
nam	*na-ta*	to salute	*na-ti*	salutation
man	*ma-ta*	to think	*ma-ti*	thought
yam	*ya-ta*	to restrain	*ya-ti*	control
ram	*ra-ta*	to enjoy	*ra-ti*	pleasure
han	*ha-ta*	to hit	*ha-ti*	killing

As is the case for PPP, the aspiration shift **ASh** leaves its expected traces. For example, *vṛdh* ("to grow") has PPP *vṛd-dha* and the feminine noun *vṛd-dhi*. Funnily, *vṛd-dhi* ("growth, lengthened grade") is in zero grade! Cerebralisation is involved in these examples:

√	PPP	translation	noun in *ti*	translation
iṣ	*iṣ-ṭa*	to wish	*iṣ-ṭi*	wish
kṛṣ	*kṛṣ-ṭa*	to plough	*kṛṣ-ṭi*	ploughing, harvest
dṛś	*dṛṣ-ṭa*	to see	*dṛṣ-ṭi*	sight
yaj (f.g.)	*iṣ-ṭa*	to sacrifice	*iṣ-ṭi*	sacrifice
vah (f.g.)	*ū-ḍha*	to flow, to carry	*ū-ḍhi*	carrying
viś	*viṣ-ṭa*	to enter	*viṣ-ṭi*	compulsory work
vṛṣ	*vṛṣ-ṭa*	to rain	*vṛṣ-ṭi*	rain
sṛj	*sṛṣ-ṭa*	to create	*sṛṣ-ṭi* (see p. 122)	creation

Furthermore, consider these two groups of laryngeal roots. The first one is without a nasal:

√	PPP	translation	noun in *ti*	translation
jī̱r	*jīr-ṇa*	to waste away	*a-jīr-ti*	indigestibleness
dā (f.g.)	*di-ta*	to give	*di-ti*	offering, largess
	dat-ta	to give	*dat-ti*	giving, gift
dā (f.g.)	*di-ta*	to bind	*a-di-ti*	freedom, name of a goddess
dhā (f.g.)	*hi-ta*	to set, to place	*hi-ti*	mission, mandate
nī	*nī-ta*	to lead	*nī-ti*	conduct, policy
pā (f.g.)	*pī-ta*	to drink	*pī-ti*	drinking, tavern
pū	*pū-ta*	to purify	*pū-ti*	purity
pū̱r	*pūr-ṇa*	to fill	*pūr-ti*	filling, reward
bhī	*bhī-ta*	to be afraid	*bhī-ti*	fear, danger
bhū	*bhū-ta*	to be	*bhū-ti*	existence, welfare
sthā (f.g.)	*sthi-ta*	to stand	*sthi-ti*	rule, standing

The second group contains a nasal together with a laryngeal. Observing the sound laws

IE $C\overset{\circ}{n}H \rightarrow C\bar{a}$
IE $C\overset{\circ}{m}H \rightarrow C\bar{a}m$

one obtains:

√ in f.g.	PPP	translation	noun in *ti*	translation
kam	*kān-ta*	to love	*kān-ti*	desire, female beauty
kram	*krān-ta*	to walk	*krān-ti*	going, attacking
khan	*khā-ta*	to dig	*khā-ti*	digging
jan	*jā-ta*	to be born	*jā-ti*	birth, caste
dam	*dān-ta*	to tame	*dān-ti*	self-restraint, subjection
śam	*śān-ta*	to get quiet	*śān-ti*	quietness, ease
śram	*śrān-ta*	to toil	*śrān-ti*	fatigue, weariness

Adjectives with *ra*

Quite a few adjectives exist that are built by adding *ra* to the zero grade of the verb:

√	PPP	translation	adjective in *ra*	translation
ukṣ or *vaj*		to get strong	*ug-ra*	powerful
ud	*un-na*	to make wet	*ud-ra*	otter
kṛś or *kṛṣ*?	*kṛṣ-ṭa*	to moan	*kṛcch-ra* (**SIB**?)	painful
krū (1)		to form a crust	*krū-ra*	bloody
kṣip	*kṣip-ta*	to throw	*kṣip-ra*	fast, quick
kṣud	*kṣun-na*	to crunch	*kṣud-ra*	mean
gṛdh	*gṛd-dha*	to be greedy	*gṛdh-ra*	greedy, vulture
cit	*cit-ta*	to observe	*cit-ra*	bright
			cit-ra-m	picture
chid	*chin-na*	to cut	*chid-ra*	leaky, hole
dhī	*dhī-ta*	to reflect	*dhī-ra*	steady
nādh (f.g.)		to be needy	*ādh-ra* (2)	poor, weak
miś	*miṣ-ṭa*	to mix	*miś-ra*	diverse
rud	*rud-i-ta*	to roar	*rud-ra*	terrific
vip		to tremble	*vip-ra*	excited, wise
śvit		to be white	*śvit-ra*	whitish
sidh	*siddha*	to succeed	*sidh-ra*	perfect, good
sthā (f.g.)	*sthi-ta*	to stand	*sthi-ra*	steady, durable

√	PPP	translation	adjective in *ra*	translation
sphāy (f.g.)		to grow fat	*sphi-ra*	abundant, vast
hiṃs	*hiṃs-i-ta*	to hurt	*hiṃs-ra*	hurting, vicious

1. See *kravis* in dictionary chapter.

2. **nHdh-ro* → *ādh-ra* (**Lar__SY**)

If the OI root begins with *a*, one observes the full grade instead. Thus, *asra* ("throwing, painful") is built 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, consider these adjectives in *ra* from full grades:

√ in f.g.	translation	adjective in *ra*	translation
as	to throw	*as-ra*	throwing, painful
dabh	to destroy	*dabh-ra*	little, deficient
		also *dah-ra* (see pp. 50)	small, tender
vak	to go crookedly	*vak-ra*	crooked, curved
vaj	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.

Masculine nouns in *āna*

According to an as-yet unpublished paper by Kulikov, sound law **L*o*** may underlie the following very few masculine agent nouns in *āna*, i.e., IE **ono* → OI *āna*.

√	translation	m. (!) agent (!) noun in f.g.	translation
budh	to be awake	*budh-āna*	prudent, spiritual guide
yudh	to fight	*yudh-āna*	warrior → enemy

See s.v. *ghṛ* and s.v. *carman.*

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 recognised:

	√	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*	*iṣ-y-a-tê*	to wish
	kliś	*kliś-y-a-tê* (1)	*kliś-y-a-tê* (1)	to suffer
	kṣip	*kṣip-a-ti*	*kṣip-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 be awake
	mud	*môd-a-ti*	*mud-y-a-tê*	to rejoice

1. *kliś-y-a-tê* is an example where ātmanêpada forms of the 4. class (with *ya*) cannot be told apart from the passive voice.

The zero grade is also obvious for some OI roots with initial *ya* or *va*:

√ in f.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 compile
bandh	*badh-nā-ti*	*badh-y-a-tê*	to bind
manth	*math-nā-ti*	*math-y-a-tê*	to stir, to shake

From subsection B.2.2 (pp. 22), remember the *mr-iy-a-tê* rule:

$$CryV \quad \rightarrow \quad CriyV$$

The following passive forms fall under this rule:

√	3. pers. sg. active	3. pers. sg. passive	translation
kṛ	*kar-ô-ti*	*kr-iy-a-tê*	to make
bhṛ	*bhar-a-ti*	*bhr-iy-a-tê*	to carry
mṛ	*mr-iy-a-tê* (1)	*mr-iy-a-tê* (1)	to die
vṛ	*vṛ-ṇā-ti*	*vr-iy-a-tê*	to choose
sṛ	*sar-a-ti*	*sr-iy-a-tê*	to flow, to move
hṛ	*harati*	*hr-iy-a-tê*	to take, to rob

1. Same forms in ātmanêpada and passive.

Let us now turn to laryngeal verbs where both PPP and passive use the zero grade:

√	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 (here with *ta*) is also very helpful for these laryngeal words:

√	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

Observe

√	PPP	3. pers. sg. passive	translation
pā (f.g.)	*pī-ta*	*pī-y-a-tê*	to drink

where long *ī* might be explainable by metathesis $^*ph_3i \rightarrow {}^*pih_3$.

Passive forms like *nī-y-a-tê* or *pī-y-a-tê* with long *ī* are responsible for those forms where long *ī* is not, etymologically, justified:

√ in f.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-y-a-tê*	to stand
hā (f.g.)	*hī-na/hā-ta*	*hī-y-a-tê*	to abandon

It seems that long *ū* that is expected in *pūr-y-a-tê*, *pū-y-a-tê*, or *bhū-y-a-tê* above might also be responsible for the following forms by analogy:

√	PPP	3. pers. sg. passive	translation
stu (see pp. 178)	*stu-ta*	*stū-y-a-tê*	to praise
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

√	PPP	3. pers. sg. passive	translation
paṭh (f.g.)	*paṭh-i*-ta (2, 3)	*paṭh-y-a-tê* (3)	to read
pat (f.g.)	*pat-i-ta* (2, 3)	*pat-y-a-tê* (3)	to fall
tyaj (f.g.)	*tyak-ta* (4a)	*tyaj-y-a-tê* (4a)	to abandon
labh (f.g.)	*lab-dha* (4b)	*labh-y-a-tê* (4b)	to obtain
sad (f.g.)	*san-na* (3)	*sad-y-a-tê* (3)	to sit
smṛ	*smṛ-ta*	*smar-y-a-tê* (5)	to remember

1. U.at. zero grades *ghuṣ-y-a-tê* or *cur-y-a-tê* would not pose any problem.

2. Some verbs like *pat* use *i-ta* as the PPP marker without etymological justification.

3. In roots like *pat*, neither the root-initial nor the root-final consonant can become syllabic. Therefore, the full grade cannot be avoided.

4. Sometimes, the regularly formed PPP and the passives would be difficult to understand:
   a) While possible, *tik-ta* or *tij-y-a-tê* would have been confused with the corresponding forms from the root *tij*, *têjati* ("to be sharp, to become sharp").
   b) In root *labh*, *l* might become syllabic. Levelling might have rectified the u.at. outcomes *l̥b-dha* and *l̥bh-y-a-tê*.

5. At a first glance, u.at. *smṛ-ya-tê* seems possible. However, it would violate the *mr-iy-a-tê* rule (pp. 22):

$$CryV \quad \rightarrow \quad CriyV$$

   which would then lead to u.at. and difficult to recognise *smr-iy-a-tê* → *sar-iy-a-tê*.

Full grades are consistently present in nasal roots:

√ in f.g.	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	*na-ta*	*nam-y-a-tê*	to salute
man	*ma-ta*	*man-y-a-tê*	to think
yam	*ya-ta*	*yam-y-a-tê*	to restrain
ram	*ra-ta*	*ram-y-a-tê*	to enjoy
han	*ha-ta*	*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-y-a-tê* but *na-y-a-tê* ← **nm̥-* (where *a* derives from syllabic *m̥*). And this *na-y-a-tê* might easily be understood as *nay-a-tê* from *nī* ("to lead").

C.4.8. Desideratives

Reduplication

Desideratives use reduplication. Additionally, reduplications are found in four other grammatical instances as well:

- ◇ The reader is invited to compare the verbs of the third class (pp. 92), which also function with reduplication.
- ◇ Sanskrit perfect forms are mostly formed in a reduplicative fashion (see pp. 203).
- ◇ One of the aorist formations is by way of reduplication (see pp. 213).
- ◇ Frequentative verbs also use reduplication (see pp. 148).

Simple examples from the zero grade or, occasionally, the full grade

Roughly speaking, desideratives are built according to this rule:

IE root	→	OI desiderative
C_1FgC_2	→	$C_1Zg\text{-}C_1ZgC_2\text{-}s\text{-}$

Consider the quite transparent example of *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*, one finds reduplication with *i*, which is more common. This is the rule:

Desiderative reduplication	with *u* if *u* is the root vowel
	with *i* otherwise

Similarly, but with some difficulties here and there, compare

√	3. pers. sg.	adjective	noun
jñā (f.g.)	*ji-jñā-s-a-tê* (1) he wants to know	*ji-jñā-s-u* inquisitive	*ji-jñā-s-ā* curiosity
tij	*ti-tik-ṣ-a-tê* he wants to become sharp	*ti-tik-ṣ-u* enduring patiently	
tyaj (f.g.)	*ti-tyak-ṣ-a-ti* (1a) he wants to abandon		
pā (f.g.)	*pi-pā-s-a-tê* (1) he wants to drink	*pi-pā-s-u* thirsty	*pi-pā-s-ā* thirst
man (f.g.)	*mi-māṃ-s-a-tê* (1c) he examines		*mī-māṃ-s-ā*
miś		*mi-mik-ṣ-u* 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 (f.g.)	*vi-vak-ṣ-a-ti* (1b) he wants to say	*vi-vak-ṣ-u* (1) wanting to say	*vi-vak-ṣ-ā* (1) desire to speak
vṛt	*vi-vṛt-s-a-ti* (2) he wishes to turn		
	vi-vart-i-ṣ-a-ti (3) he wishes to turn		
vṛdh	*vi-vṛt-s-a-ti* (2) he wants to grow		
vardhay (4)	*vi-vardhay-i-ṣ-a-ti* (1, 3) he wants to augment	*vi-vardhay-i-ṣ-u* (1, 3) wishing to augment	

1. In order to bring out the root most clearly, one sometimes sees the full grade. For example:

a) *ti-tik-ṣ-a-tê* is desiderative from *tij*, *têjati* ("to be sharp, to become sharp"), but would also be the regularly formed desiderative from *tyaj*.

b) *vi-vak-ṣ-a-ti* follows the pattern of $C_1Zg\text{-}C_1FgC_2\text{-}s\text{-}$. 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**.

c) *mi-māṃ-s-a-tê* is irregular with long *ā*. The zero-grade desiderative of *man* is u.at. *mi-ma-s-a-tê*, where syllabic *n̥* would have turned into *a*. See p. 144. If built with the full grade, one should expect u.at. *mi-maṃ-s-a-tê*, similar to the future *maṃ-sy-a-ti* by ***Ns***.

2. The desideratives from roots *vṛt* and *vṛdh* coincide (backward assimilation, *s* not aspiratable).

3. In order to avoid difficult forms, quasi-thematic *i* is sometimes introduced.

4. Causative of *vṛdh*

Applying Grassmann's deaspiration

A close look look at a few desiderative examples is in order. The following desideratives involve Grassmann's deaspiration. From OI *bhid* ← 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 OI *bhuj* ← 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 OI *bhū* ← IE **bheuH:*

*bhu-bhuH-s-
→ *bu-bhū-s-* (**DA**, **Lar_V**)
→ *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

Consider now a few examples that involve root-final velars and palatals, such as *lih* ← IE **leiǵh*:

	**li-liǵh-s-*			
→	*li-lik-s-* (**ASh**, **BA**)			
→	*li-lik-ṣ-* (**RUKI**)	→	*li-lik-ṣ-a-ti*	he wishes to lick

OI *guh* ← 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

and *duh* ← 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

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.*

From IE **ghrebh*$_2$ → OI *grah* (**Lar__*CH***) one obtains the desiderative *ji-ghṛk-ṣ-u* which is a bit difficult because the IE root-final is labial:

	**ghi-ghr̥̊h-s-*			
→	*gi-ghr̥̊h-s-* (**DA**)			
→	*ji-ghr̥̊h-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

Merging of the reduplication syllable with the zero-grade root

In contrast to these examples, deaspiration in the reduplication syllable does not take place for *bhaj* ("to allot, to divide") ← IE **bheǵ*:

*bhi-bhǵ-s-
→ bhi-bj-s- (**ASh**, but *s* not aspiratable)
→ 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 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 (a reduplicated present form, see dictionary) ← IE **h*1*ep*:

**h*1*i-h*1*p-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

akṣi n. ("eye") ← IE **h*3*ek*^{w}:

**h*3*i-h*3*k*^{w}*-s-*
→ *īk*^{w}*-s-* (IE *iH* → OI *ī*)
→ *īk-s-* (see pp. 37)
→ *īk-ṣ-* (**RUKI**) → *īk-ṣ-a-tê* he watches over
→ *īk-ṣ-ā* sight

IE **h*2*neḱ*:

**h*2*i-h*2*nḱ-s-*
→ *īak-s-* (**Lar__*V***, **SY__*N***, **SY__Conf**, **SIB**)
→ *iyak-s-* (***V*+*SV***)
→ *iyak-ṣ-* (**RUKI**) → Ved. *iyak-ṣ-a-ti* he wishes to reach

an ("to breath") ← IE **h*$_2$*enh*$_1$:

**h*$_2$*i-h*$_2$*nh*$_1$*-s-*
→ *īni-s-* (twice **Lar_ *V***)
→ *īni-ṣ-* (**RUKI**)
→ *anini-ṣ-* (by levelling with *an*) → *anini-ṣ-a-ti* he wishes to breathe

dā ← IE **deh*$_3$:

**di-dh*$_3$*-s-*
→ *di-d-s-* (**Lar_ *V***: just loss of laryngeal)
→ *di-t-s-* (**BA**) → *dit-s-a-ti* he wishes to give
→ *dit-s-u* desirous of giving
→ *dit-s-ā* desire to give

dhā ← IE **dheh*$_1$:

**dhi-dhh*$_1$*-s-*
→ *dhi-dh-s-* (**Lar_ *V***: just loss of laryngeal)
→ *dhi-th-s-* (**BA**)
→ *dhi-t-s-* (**ASh**) → *dhit-s-a-ti* he wishes to set

and *dabh* ← IE **dhebh*:

**dhi-dhbh-s-*
→ *dhi-bh-s-* (**CCl**)
→ *dhi-ph-s-* (**BA**)
→ *dhi-p-s-* (**ASh**) → *dhip-s-a-ti* he wishes to injure

(besides levelled *dipsati*)

And the three final examples *daś* (see s.v. *daśas*) ← IE **deḱ* :

**di-dḱ-s-*
→ *dīḱ-s-* (**CpL *dḱ***)
→ *dīk-ṣ-* (**SIB**) → *dīk-ṣ-a-tê* he consecrates
→ *dīk-ṣ-ā* consecration

pad ← 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

and *labh* ← IE **lebh*

**li-lbh-s-*
→ *li-bhs-* (**CCl**)
→ *li-ph-s-* (**BA**)
→ *li-p-s-* (**ASh**) → *lip-s-a-ti* he wishes to obtain
→ *lip-s-u* desirous of obtaining
→ *lip-s-ā* desire to obtain

Secondary palatalisation

Some desideratives are instances of secondary palatalisation:

√	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 *ti-tīr-ṣ-u* in the next table).
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** line 1

Laryngeal roots ending on *rH*

Roots with long syllabic *r̥̄* ← IE *rH* form the desiderative from the full grade or from the zero grade.

√ *CerH*	3. pers. sg.	adjective
kr̥̄	*ci-kar-i-ṣ-a-ti* (1, 2) he wants to pour out	*ci-kar-i-ṣ-u* (1, 2) desirous to pour out
tr̥̄	*ti-tīr-ṣ-a-ti* ← IE **ti-tr̥°H-s* (3) he wants to cross	*ti-tīr-ṣ-u* (3) desirous of crossing
dr̥̄	*di-dīr-ṣ-a-ti* (3) he wants to tear	*di-dīr-ṣ-u* (3) desirous of tearing
pr̥̄	*pi-par-i-ṣ-a-ti* (2) he wants to spend completely (time)	
	pu-pūr-ṣ-a-ti ← IE **pu-pr̥°H-s* (4) he wants to spend completely (time)	

1. **SPal**
2. Full grade plus *i*, reflecting a laryngeal
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:

√	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
mr̥	*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
sr̥	*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*. In *pu-pūr-ṣ-a-ti* above, the laryngeal stems from the root. Here, the laryngeal would originate in the suffix. In both cases, 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 *r̥Hs*, 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 explanation.

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 **gʷhen*, depending on the suffix. On the one hand, one finds the *Hs*-desiderative:

	**gʷhi-gʷhn̥-Hs-*			
→	*gʷhi-gʷhā-s-* (laryngeal after syllabic *n̥*)			
→	*gʷi-gʷhā-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:

	$^*g^whi\text{-}g^whn\text{-}s\text{-}$			
→	$hi\text{-}g^whn\text{-}s\text{-}$ (**SPal**)			
→	*hi-n-s-* (**CCl**)			
→	*hi-ṃ-s-* (***Ns***)	→	*hiṃ-s-a-ti*	he injures
		→	*hiṃ-s-ā*	injury

C.4.9. Compound-final "zero grades"

At the end of compounds, forms like *dvi-ja* or *kha-ga* vaguely resemble zero grades. Some can be understood as employing only the root-initial consonant. Remember the consequentials of the second subgroup (pp. 82) that are derived in a similar fashion. Let us call the forms to be presented now ultra-zero grades. A few might indeed be 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-dhi* 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")
- *sênā-nīs* m. ("army leader, general")
- *grāma-ṇīs* m. ("village leader")
- *agra-ṇīs* m. ("leader")

◇ *vid, vêt-ti* ("to know") with PPP *vit-ta, vid-i-ta*

- *vêda-vit* ("*Veda* knowing")
- *ātma-vit* ("knower of the self")

Three odd examples add *t* (perhaps in analogy to *vêda-vit*):

◇ *ji, jayati* ("to conquer") with PPP *ji-ta*

- *indra-jit* m. ("conqueror of *Indra*")
- *apsu-jit* ("conquering in the region of the clouds, i.e., Indra"), with loc. pl. of *ap* ("water") instead of stem form (see also *apsu-ja* below)

◇ *bhṛ, bharati* ("to bear") with PPP *bhṛ-ta*

- *śastra-bhṛt* (“weapon bearer → warrior”)

◇ *kṛ, karôti* with PPP *kṛ-ta*

- *duṣ-kṛt* (“acting in an evil manner”) ← *dus* (“bad, evil”)

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 a sandhi rule), also a common Hindi word as *a-cchā*

◇ *jan, jāyatê* (“to beget, to be born”) with PPP **ǵn̥-h*$_1$*-to* → *jā-ta*

- *dvi-ja* (“twice-born”) with *dvi-ja* m. (“brahmin, bird, tooth”)
- *ātma-ja* (“self-produced, son”) and *ātma-jā* (“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 f.g. (!) PPP IE **ǵneh*$_3$*-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, *Brahmā*”)
- *ab-da* (“water giver → cloud”, “when clouds reappear → year”) ← *ap* (“water”) by **BA**

◇ *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-ta*

- *pra-jā-pa* (“protecting the subjects → king”)
- *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”)
- *grantha-stha* (“(knowledge) present in a book”)
- *kaṇṭha-stha* m. (“(knowledge) present in the throat → known by heart”)

One might try to explain

◇ *pra-bhu* m. (“lord, master”)

◇ *a-bhv-a* (“not being (good) → monstrous, powerful”)

by positing the zero grade of IE root **bheuH* 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. Rare lengthened grade in action nouns

On pp. 103, some derivatives on *a* are mentioned like

◇ *jay-a* (“victory”) ← *ji* (“to conquer”)

◇ *bhav-a* (“being, state”) ← IE **bhevH-o* (OI z.g. root *bhū*)

Building on the same verbal roots, one also finds 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 lengthened 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. In the latter forms, the reduplicated syllable is "emphasised" 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 might exhibit 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. *car* ("to go, to stir") ← IE $^*k^w el$ has the frequentative adjective *ca-kr-a* ("unsteady → wheel").

First construction

For each of the six constructions, the general model is described together with a few examples. The first construction involves semivowels:

1. construction		IE root	→	OI 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, consider

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
budh	*bô-budh-ya-tê*	*bô-budh-ī-ti*	to be awake
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

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
svap (f.g.)	*sô-ṣup-ya-tê*	see 2. construction	to sleep

Second construction

The first construction uses the sequence *Fg-Zg*, the second construction employs higher grades, namely *Lg-Fg*:

2. construction		IE root	→	OI 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 pretty transparent. But note: as in desideratives like *śu-śrū-ṣ-u*, only the first root-initial consonant gets reduplicated in *jval* and *svap,* (i.e., resonants as second root-initial consonants are not reduplicated) in contrast to *smṛ*:

√ in f.g.	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
jval	*jā-jval-ya-tê*	*jā-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 (z.g.)	*smā-smar-ya-tê*	*smā-smar-ī-ti*	to remember
svap	see 1. construction	*sā-svap-ī-ti*	to sleep

Third construction

In contrast to the first and second construction, the third one repeats the full-grade root:

3. construction		IE root	→	OI 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, 3)	*caṅ-kram-ī-ti* (1, 2, 3)	to walk
gam	*jaṅ-gam-ya-tê* (2, 3)	*jaṅ-gam-ī-ti* (2, 3)	to go
car		*car-car-ī-ti* (2)	to walk
bhram	*bam-bhram-ya-tê* (1, 4)	*bam-bhram-ī-ti* (1, 4)	to roam

1. Regularly, only the first word-initial consonant gets reduplicated. The resonant *r* as the second root-initial consonant is not reduplicated. Therefore: *caṅ-kram-ya-tê* and *bam-bhram-ya-tê*.

2. Secondary palatalisation seems behind *caṅ-kram-ya-tê* and *jaṅ-gam-ya-tê*. But the evidence is far from clear. Perhaps, other explanations using analogy might be more convincing.

3. The verbs that end in a nasal show expected backward assimilation where the suitable class nasal (here: the velar one) is used.

4. 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	→	OI 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*

That is, omitting the root-final consonant, a nasal is infixed after the reduplication syllable. This is relevant for understanding frequentatives like

√	3. sg. ātm. (*ya* suffix)	3. sg. par. (*ī* suffix)	translation
cal	*ca-ñ-cal-ya-tê*		to stir, to quiver
jap	*ja-ñ-jap-ya-tê*	*ja-ñ-jap-ī-ti*	to recite
dah	*da-n-dah-ya-tê*	*da-n-dah-ī-ti*	to burn

Fourth construction

In the fourth construction, long *ī* is inserted after the reduplication syllable:

4. construction		IE root	→	OI frequentative
	ya marker	$C_1 erC_2$	→	$C_1 ar\text{-}\bar{\imath}\text{-}C_1 \underline{r} C_2\text{-}ya$ + ātm.
	$\bar{\imath}$ marker	$C_1 erC_2$	→	$C_1 ar\text{-}\bar{\imath}\text{-}C_1 \underline{r} C_2\text{-}\bar{\imath}$ + par.
example	*ya* marker	*serp*	→	*sar-ī-sṛp-ya-tê*
	$\bar{\imath}$ marker	*serp*	→	*sar-ī-sṛp-ī-ti*

Consider these examples that are exactly formed like *sar-ī-sṛp-ya-tê*:

√	3. sg. ātm. (*ya* suffix)	3. sg. par. ($\bar{\imath}$ suffix)	translation
nṛt	*nar-ī-nṛt-ya-tê*	see 5. 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 $\bar{\imath}$ suffix:

5. construction	IE root	→	OI frequentative
	$C_1 erC_2$	→	$C_1 ar\text{-}\bar{\imath}\text{-}C_1 arC_2$- + par.
examples	*vert*	→	*var-ī-vart-ti*
	nert	→	*nar-ī-nar-ti*

Sixth construction

The sixth construction is applied to long $\bar{a}$ roots with laryngeal origin:

√	3. sg. ātm. (*ya* suffix)	3. sg. par.	translation
dā	*dê-dī-ya-tê*	*dā-dā-ti*	to give
pā	*pê-pī-ya-tê*	*pā-pā-ti*	to drink

Similarly, compare *jê-jīr-ya-tê* from root *jṝ* (to decay).

C.5.4. Gerundives

Gerundives are formed with *tavya*, *anīya*, or *(t)ya*. They occur in all grades:

√	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-anīya*, *gam-ya*		

√	translation	f.g.	z.g.	l.g.
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 in *tum* or the agent nouns in *tar* (pp. 97).
2. *jê-ya* versus *jay-ya* is not totally clear. Since the *ya*-form begins with a consonant, *jê-ya* is expected by **DIPH**. In contrast, *jay-ya* is difficult.
3. *bhav-i-tavya* is regular as is the infinitive *bhav-i-tum* due to the laryngeal root IE **bheuH*.

Some gerundives surprisingly exhibit *ê*, such as

√	translation		
dā	to give	*dê-ya*	*ā-dê-ya* (“to be taken”)
dhā	to set, to place	*dhê-ya*	*vi-dhê-ya* (“to be determined, 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:

* *peh*$_3$*i-yo*
→ *pāi-ya* (**Lar_ *V***)
→ *pê-ya* (like *vêṭ* according to **VS** 2. line, pp. 32)

while the other long *ā* verbs do not exhibit *i* in the root and are built by analogy with *pê-ya*.

C.6. Miscellanea

C.6.1. 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. 147) but the first syllable. Consider these examples:

lengthened 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:

lengthened form	translation	origin
ā-kasmika	unforeseen	*a-kasmāt* (“without a why or a wherefore”)
ā-jasr-ik-a	perpetual	*a-jasra* (“perpetual”)

Lengthened forms also occur in neuter nouns in *ya* indicating “-ness” or “-ity”.

lengthened 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	*jaḍ-a* (“stupid”)
trâiguṇ-ya	pertaining to the three *guṇa*s	*triguṇ-a* (“with 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”)
mādhur-ya-m	sweetness	*madhur-a* (“sweet”)
mâitr-ya-m	friendship	*mitr-am* (“friend”)
vāṇij-ya-m	trade	*vaṇij* (“merchant”)
śaur-ya-m	valor	*śūr-a* (“brave”)
svā-sth-ya-m	health	*sva-stha* (“well at ease”) ← *sthā*

C.6.2. Ātmanêpada present-tense participles

The ātmanêpada present-tense participles vary according to whether thematic or athematic verbs are concerned.

◇ For athematic verbs, the ending *āna* is attached to the weak present stem. For example, the present participle from *duh, duh-mas* ("to milk") is *duh-āna.*

◇ For thematic verbs, the thematic vowel OI *a* and the ending *māna* is attached to the present stem. For example, the present participle from *man, man-y-a-tê* ("to think") is *man-y-a-māna.*

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 stem causing m to become syllabic. Then **Lar_SY** (IE $C\underset{\circ}{m}HC \rightarrow C\bar{a}C$) regularly produces *āna.*

◇ By **Lar_*V***, thematic verbs should have produced *a-mina* (a Prakrit form *mina* does indeed exist). Analogy was then responsible for producing OI and even Ved. *a-māna*:

	a-mina	
influenced by	*āna* in athematic verbs	with long $\bar{a}$ before n
turns into	*a-māna* in thematic verbs	with long $\bar{a}$ before n

The suffix *āna* may have a second (confounded?) origin, see p. 131.

D. Conjugations

D.1. Thematic and athematic verbs

D.1.1. Thematic verbs

Short introduction

The reader is invited to revisit section C.2 on pp. 84. 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: $\surd bhṛ$	athematic: $\surd bhī$	
1	*bhar-ā-mi*	*bi-bhê-mi*	present
2	*bhar-a-si*	*bi-bhê-ṣi*	indicative
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 indicatives of present and future tenses. 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* (5)	*mas* (1)	present
2	*si* (1, 2)	*thas*	*tha*	indicative
3	*ti* (1, 2)	*tas*	*n-ti* (1, 3)	(primary ending)
1	*m* (1)	*va* (5)	*ma* (1)	imper-
2	*s* (1)	*tam*	*ta*	fect
3	*t* (1)	*tām*	*n* (3, 4)	(secondary ending)
1	*ni*	*va* (5)	*ma* (1)	imper-
2	∅ (6)	*tam*	*ta*	ative
3	*tu* (1)	*tām*	*n-tu* (1, 3)	(secondary ending)

1. *m, s*, and *t* characterise the 1., 2., and 3. pers. sg., 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* (impf.) or *mi* (pres. ind.) is also seen in OI gen. sg. *mama* and OI gen./dat. enclitic *mê* (and even in E *me*).
   b) pl. *mas* ← IE **mes* as the IE enclitic 1. pers. pl. pronoun (but *nas* is the OI enclitic 1. pers. pl. pronoun)
2. Both the thematic and athematic verbal classes show *i* in the pres. ind. 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. Impf. 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. 46).
5. Dual *vas* is still seen in OI gen./dat./acc. 2. pers. pl. (!) enclitic *vas*.
6. ∅ indicates the zero ending.

The thematic parasmâipada forms are built according to the formula

present stem
\+ thematic 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*	indicative
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 Indo-European, it is, of course, *a* in Sanskrit:

	√*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*	*bhar-a-tha*	indicative
3	*bhar-a-ti*	*bhar-a-tas*	*bhar-a-n-ti*	(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 thematic vowel *a*, note *ā* in *bhar-ā-mi*. Historically, IE **ō* indicates 1. pers. sg. for thematic verbs. See the table for IE forms above. At first, *mi* was present only in athematic verbs. From these athematic verbs, *mi* spread to thematic ones. Thus, the OI 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, the thematic vowel *a* is presented together with the thematic endings in the following table:

	thematic verbs ātmanêpada			
	sg.	dual	pl.	
1	*ê* (1, 2)	*ā-vahê* (3)	*ā-mahê* (1, 3)	present
2	*a-sê* (1, 2)	*êthê*	*a-dhvê*	indicative
3	*a-tê* (1, 2)	*êtê*	*a-n-tê* (1)	(primary ending)
1	*ê* (4)	*ā-vahi* (3)	*ā-mahi* (1, 3)	imper-
2	*a-thās*	*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, the ātmanêpada endings have *m, s* and *t* to characterise the 1., 2., and 3. pers., respectively. However, just *ê* is observed in the 1. pers. sg. pres. ind. and impf. (see 4.).
2. Similar to the parasmâipada endings, the "here and now" particle *i* is encountered in the pres. ind. sg.: *ê* goes back to IE *oi.*
3. As in the parasmâipada case, observe *ā* resulting from Brugmann's law.
4. Think of 1. pers. sg. impf. *ê* as *a-i* (just *i* in the athematic paradigm).

The corresponding paradigm reads

present stem
\+ thematic vowel *a* together with ending

One obtains

	$\sqrt{}$*labh* ātmanêpada			
	sg.	dual	pl.	
1	*labh-ê*	*labh-ā-vahê*	*labh-ā-mahê*	present
2	*labh-a-sê*	*labh-êthê*	*labh-a-dhvê*	indicative
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*	*labh-ā-mahâi*	imper-
2	*labh-a-sva*	*labh-êthām*	*labh-a-dhvam*	ative
3	*labh-a-tām*	*labh-êtām*	*labh-a-n-tām*	(secondary ending)

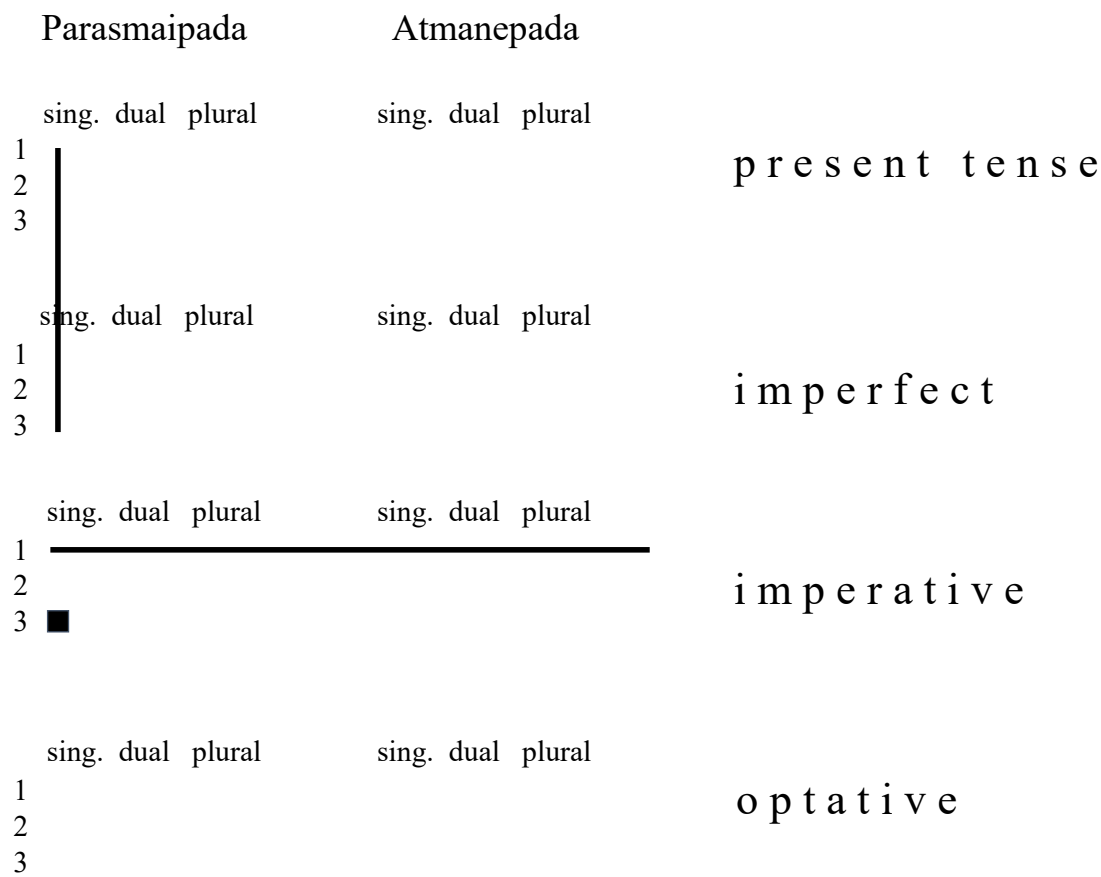

Figure D.1.: Strong forms in the present-system of athematic verbs

D.1.2. 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 figure D.1, where the strong forms are marked. The others are weak. Thus, strong forms are present

- ◇ in par. pres. ind. sg.
- ◇ in par. impf. sg.
- ◇ in 1. pers. imper., both par. and ātm.
- ◇ in par. 3. pers. sg. imper.

Weak and strong forms are important because

◇ weak forms are defined by the zero grade and

◇ strong form are defined by the normal grade.

Endings for athematic verbs, parasmâipada

The athematic endings are very similar to the thematic ones:

	them. verbs par.			athem. verbs par.			
	sg.	dual	pl.	sg.	dual	pl.	
1	*mi*	*vas*	*mas*	***mi***	*vas*	*mas*	present
2	*si*	*thas*	*tha*	***si***	*thas*	*tha*	indicative
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 the above paradigm concerns athematic verbs, the 1. pers. sg. impf. ending is always *am*. (This holds for Sanskrit, but in IE times, the ending was just *m*.) There is a good reason for this ending. With *m* instead of *am*, irrecognisable forms would arise due to $\underset{\circ}{m} \to a$:

	1. pers. sg. impf.	
	ending $\underset{\circ}{m} \to a$	ending *am*
$\sqrt{}$*yuj* (7. class)	u.at. *a-yu-na-j-a*	*a-yu-na-j-am*
$\sqrt{}$*vid* (2. class)	u.at. *a-vêd-a*	*a-vêd-am*

2. Spreading of the thematic *a* often occurs in par. 3. pers. pl. forms. This spreading occurs in all athematic classes, but not in the third class. In the 2. class, spreading is only present in the verb *śās* ("to rule").

3. The variant *us* is often seen in 3. pers. pl. impf.

4. The imper. 1. pers. endings do **not** differ between
   a) "lengthened thematic 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 some athematic verbs, where you find *kur-u* ("make!") or *su-nu* ("press!"). Otherwise, the parasmâipada imper. 2. pers. sg. for the athematic classes can be *dhi* or *hi*:

	√	class	translation	imperative
dhi	*yuj*	7	to join	*yu-ṅ-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	*pu-nī-hi*
	bhī	3	to be afraid	*bi-bhī-hi*
	yā	2	to go	*yā-hi*

In Old Greek, the suffix is *thi* (in *i-thi*, "go!"). Thus, OI *dhi* can be considered 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 u.at. *i-dhi* (see p. 50). 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. verbs ātm.			athem. verbs ātm.			
	sg.	dual	pl.	sg.	dual	pl.	
1	*ê*	*ā-vahê*	*ā-mahê*	*ê* (2)	*vahê* (1)	*mahê* (1)	present
2	*a-sê*	*êthê*	*a-dhvê*	*sê* (1)	*āthê* (3)	*dhvê* (1)	indicative
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. Observe *ê* and *âi* in both thematic and athematic 1. pers. sg., pres. ind. 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. impf. *i* (athematic) clearly corresponds to the thematic *ê* ← *a-i*.

5. The imper. 1. pers. endings do **not** differ between
   a) "(lengthened) thematic 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 (above). Thus, the thematic vowel has also spread in these cases.

The 2. and 3. person duals are confusing. It may be helpful to compare the present indicative (primary endings) with the imperfect (secondary endings):

	t h e m a t i c v e r b s						
	pres. ind.				impf.		
	par.		ātm.		par.		ātm.
2	*a-thas*	*a* → *ê*	*ê-thê*	2	*a-tam*	*a* → *ê*	*ê-thām*
	↓ no *h*		↓ no *h*				↓ no *h*
3	*a-tas*	*a* → *ê*	*ê-tê*	3	*a-tām*	*a* → *ê*	*ê-tām*
	↓ no vowel		↓ *ā* for *ê*		↓ no vowel		↓ *ā* for *ê*

	a t h e m a t i c v e r b s						
	↓ pres. ind. ↓				↓ impf. ↓		
	par.		ātm.		par.		ātm.
2	*thas*	∅ → *ā*	*ā-thê*	2	*tam*	∅ → *ā*	*ā-thām*
	↓ no *h*		↓ no *h*				↓ no *h*
3	*tas*	∅ → *ā*	*ā-tê*	3	*tām*	∅ → *ā*	*ā-tām*

For example, here are the dual forms for $\sqrt{bhṛ}$ and $\sqrt{kṛ}$:

	pres. ind.		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

D.1.3. The second class

Introductory remark and overview

The 3. pers. sg. is often characterised 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 indicative
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 indicative
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. 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-an-ti*	present indicative
a-vak ← u.at. *a-vak-t*	*a-vac-a-n* ← u.at. *a-vac-an-t*	imperfect
vak-tu	*vac-an-tu*	imperative

Second-class verbs produce many challenging forms where the verbal root directly gets into contact with the personal endings. The following verbs are considered in detail:

vac (“to speak”)

Our first verb, *vac* (“to speak”), is special in not distinguishing weak and strong forms. All the forms are strong:

	$\sqrt{}$*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)	indicative
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*, observe expected **BA** before *dhi*, the regular ending.

4. In the above paradigm, observe *c* (as in the OI root *vac*) in all forms where the endings start with a vowel or a resonant.

5. In the impf. sg., compare

   ◇ 3. pers. *a-vak* ← IE $^*vek^w$-*t* and

   ◇ 2. pers. *a-vak* ← IE $^*vek^w$-*s*

   by **CCl**, no **SPal**, and **AFP**.

6. In all verbs of the second class (except *śās* ("to rule, to instruct")), par. 3. pers. pl. forms borrow *a* from the thematic classes, as seen here with *vac-an-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. 82). *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***	indicative
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* uses the alternative ending *us* (instead of *(a)n*). And, observe *a-y-us*, not u.at. *a-yâus* (which would be difficult to understand).

3. Note the *hi* rather than the *dhi* imperative.

vid ("to know")

Now turn to *vid* ("to know") which shows the regular distribution of strong and weak forms:

	$\sqrt{}$*vid* ← IE **veid*, parasmâipada			
	sg.	dual	pl.	
1	***vêd-mi***	*vid-vas*	*vid-mas*	present
2	***vêt-si*** (1)	*vit-thas* (1)	*vit-tha* (1)	indicative
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 impf. sg., **CCl** and **AFP** are responsible for

   ◇ 3. pers. *a-vêt* ← IE **e-veid-t* and

   ◇ 2. pers. *a-vêt* ← IE **e-veid-s*

   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 $^*h_1 es$, parasmâipada			
	sg.	dual	pl.	
1	***as-mi***	*s-vas*	*s-mas*	present
2	***asi*** (1)	*s-thas*	*s-tha*	indicative
3	***as-ti***	*s-tas*	*s-an-ti*	(prim. end.)
1	***ās-am*** (2)	***ās-va*** (3)	***ās-ma*** (3)	imperfect
2	***ās-ī-s*** (4)	***ās-tam*** (3)	***ās-ta*** (3)	(sec. end.)
3	***ās-ī-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. 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 strong, in contradiction to figure D.1 (p. 159). Instead of strong *ās-ma* ← *a-as-ma* one should expect weak *a-s-ma*.

4. Originally, *ās-īs* and *ās-īt* are aorist forms that migrated to the imperfect.

5. One finds *ê-dhi* ← u.at. *as-dhi* (see *dê-dhi* on p. 52), a strong form in contradiction to figure D.1.

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)	indicative
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* (4)	with augm.
1	***ay-āni*** (1)	***ay-āva*** (1)	***ay-āma*** (1)	imper-
2	*i-hi* (2, 5)	*i-tam* (2)	*i-ta* (2)	ative
3	***ê-tu*** (1)	*i-tām* (2)	*y-an-tu* (2)	(sec. end.)

1. By **DIPH**, 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*) and *y* before a vowel (*y-an-ti*).

3. Imperfect forms seem to obey the prescribed distribution of weak and strong forms. Compare 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 **VS** 6. line (pp. 32).

5. *i-hi* from older **i-dhi* (p. 50). From forms like *i-hi* the new ending *hi* spread to other verbs.

duh **(“to milk”)**

Consider now OI root *duh* (“to milk”). The IE full-grade root is **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. 26). Here is the parasmâipada paradigm. The explanations also refer to the ātmanêpada paradigm below.

	√*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* (1b)	indicative
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. 39). In particular, three cases need to be distinguished:
   a) *gh-t* → *g-dh* (aspiration shift, forward assimilation) is seen in IE **dheugh-ti* → *dôg-dhi*.
   b) *gh-th* → *g-dh* (no double aspiration, forward assimilation) is seen in IE **dhugh-th* → *dug-th* (par. 2. pers. dual pres. ind. *dug-dhas* or ātm. 2. pers. sg. impf.)
   c) *gh-dh* → *g-dh* (no double aspiration, no forward assimilation) is seen in par. 2. sg. imper. IE **dhugh-dhi* → *dug-dhi* and in ātm. 2. pl. pres. ind. *dhug-dhvê*.

   dug-dhas is an example of either 1a (par. 3. pers. dual pres. ind.) or 1b (par. 2. pers. dual pres. ind.).

2. Grassmann's deaspiration is seen in most forms. But it has been undone (or, rather, has not been carried out in the first place) in these cases:
   a) before *s* as in par. pres. ind. 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. ind. 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, secondary palatalisation *gh* → *h* as seen in figure B.2 (p. 38) is applied. This is most clearly seen in ātm. 1. pers. sg. impf. *a-duh-i*. Apparently, *h* spread to many forms where an IE front vowel was not present. In the above paradigm, *h* (as in the OI root *duh*) features in all forms where the endings start with a vowel or a resonant.

4. In both thematic and athematic 3. pers. pl. forms, observe *a*:

   a) In par. 3. pers. pl. forms like *duh-an-ti*, see *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 par. impf. sg. forms *a-dhôk*, aspiration shift is not possible and the sound laws **CCl** and **AFP** operate. In the 2. pers., *s* has been dropped, and in the third, *t*.

6. In *dhôk-ṣi*, after the newly formed *k*, **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* (3)	*dhug-dhvê* (1c, 2b)	indicative
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"):

	$\sqrt{}$*lih* ← IE **leiǵh*, parasmâipada			
	sg.	dual	pl.	
1	***lêh-mi***	*lih-vas*	*lih-mas*	present
2	***lêk-ṣi*** (2)	*lī-ḍhas* (5b)	*lī-ḍha* (5b)	indicative
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)	indicative
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 par. 3. pers. sg. pres. ind. 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*** 5. line, where *ê* is already long)

2. The par. 2. pers. sg. pres. ind. is *lêk-ṣi* which has developed regularly (and similarly two z.g. ātm. forms):

IE **leiǵh-si* (full grade)
→ *lêǵ-si* (**ASh**, but *s* cannot be aspirated)
→ *lêk-si* (**BA**)
→ *lêk-ṣi* (**RUKI**)

3. Par. impf. sg. has *a-lêṭ* in both the 2. and 3. pers. For the 3. pers., observe

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*** 5. line, where *ê* is already long)
→ *a-lê-ṭ* (**AFP**, p. 47)

4. Remember *madhu-liṭ* ← IE **medhu-liǵh-s* on p. 47. The 2. pers. par. impf. sg. 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 cerebralisation of a dental ending. Distinguish between three cases:

   a) *iǵh-t* → *ī-ḍh* as, for example, the ātm. 3. pers. sg. pres. ind. *lī-ḍhê*:

IE **liǵh-toi* (z.g. with marker *toi*)
→ *liǵh-tê*
→ *liǵ-dhê* (**ASh**)
→ *liz-dhê* (***sz*** before voiced stop)
→ *liẓ-dhê* (**RUKI**)
→ *liẓ-ḍhê* (**Cer*D***)
→ *lī-ḍhê* (**CpL*z*** 2. line)

b) *iǵh-th* → *ī-ḍh* as, for example par. 2. pers. dual *lī-ḍhas*:

*liǵh-thas (z.g. with OI (!) marker *thas*)
→ liǵ-dhas (**ASh**, but no further aspiration)
→ liz-dhas (***sz*** before voiced stop)
→ liẓ-dhas (**RUKI**)
→ liẓ-ḍhas (**Cer*D***)
→ lī-ḍhas (**CpL*z*** 2. line)

c) *iǵh-dhv* → *ī-ḍhv* as, for example ātm. 2. pers. pl. pres. ind. *lī-ḍhvê*:

*liǵh-dhvê (z.g. with OI (!) marker *dhvê*)
→ 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. line)

Par. 2. and 3. dual pres. ind. 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, note *a*:

   a) In par. 3. pers. pl. forms like *lih-an-ti*, observe *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"):

	$\sqrt{}$*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)	indicative
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 **PPal** and **Cer*D***.

2. Similarly, but in zero grade, consider forms like *uṣ-ṭhas* (pres. ind. 2. pers. dual).

3. **SIB** line 3

4. Par. impf. sg. has *a-vaṭ* in both the 2. and 3. pers. For the 3. pers., consider

   IE **e-veḱ-t* (f.g. with IE impf. marker *e*)
   → *a-vaś-t*
   → *a-vaṣ-ṭ* (as in *vaṣ-ṭi*)
   → *a-vaṭ* (**CCL**, **AFP**)

5. The 2. pers. par. impf. sg. is also regular:

   IE **e-veḱ-s* (f.g. with IE impf. marker *e*)
   → *a-vaś-s*
   → *a-vaś* (**CCL**)
   → *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

   preterite augment *a* + *u*/*ū* → *âu*

   consider

   a) forms like *âuś-va* with *ś* from IE *ḱ* and

   b) forms like *âuṣ-ṭam*, where the rules **PPal** and **Cer*D*** have been applied again.

7. 3. pers. pl. forms show *an-*, the thematic *a* being borrowed from thematic classes.

8. *uḍ-ḍhi*, the imperative 2. pers. sg. is difficult, but explainable:

   IE **uḱ-dhi* (z.g. with imper. ending *dhi*)
   → *uǵ-dhi* (**BA**)
   → *uz-dhi* (***sz***)
   → *uẓ-dhi* (**RUKI**)
   → *uẓ-ḍhi* (**Cer*D***)
   → *ū-ḍhi* (**CpL*z*** 3. line)
   → *uḍ-ḍhi* (**LawOfMorae**)

han **("to hit, to kill")**

As another example, consider *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)	indicative
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* (4)	*ha-ta* (4)	ative
3	***han-tu*** (1)	*ha-tām* (4)	*ghn-an-tu* (3)	(sec. end.)

1. Secondary palatalisation (section B.5, pp. 37) produces *han-ti* from *g*^{w}*hen-ti*.

2. For the first person, the strong forms also migrated to pres. ind. and impf. both dual and pl., where they should not be seen according to p. 159.

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 palatalisation is not relevant because *g*^{w}*h* does not stand before a front vowel.

4. If the zero-grade stem came in immediate contact with a *t*-ending, the *n* had to become syllabic. Then, u.at. *gha-tas* (pres. ind., 3. pers. dual) and the like should have been expected. Instead, one finds *ha-tas*, undoubtedly due to leveling. This is similar to the (zero grade!) PPP *ha-ta* in subsection C.4.3 (p. 119).

5. Identical par. impf. 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 palatalisation. Perhaps, the *i* from the ending makes the syllabic nasal also a front vowel? In any case, the likely development is

   $^{*}g^{w}h\underset{\circ}{n}$-*hi* (z.g. with OI imper. marker *hi*)
   → g^{w}*a-hi* (**DA**)
   → *ja-hi* (difficult **SPal**)

brū **("to speak")**

For *brū* ("to speak"), the IE root is *breuH*, whence one finds

- ◇ the strong forms with *brav* (**DIPH**)
- ◇ the weak forms (***V+SV***)
  - before vowel endings *bruv*
  - before consonant endings *brū*

With these expected developments in mind, the conjugation pattern is not too surprising:

	$\surd$*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. Long *ī* in present sg. like *brav-ī-ti* is surely connected to the laryngeal, but one should have expected short *i* instead.

2. Imperfect sg. *a-brav-īs* and *a-brav-īt* are somewhat mysterious. One should expect u.at. *a-brô-s* and u.at. *a-brô-t*. These forms may have been too alien compared with the rest of the paradigm. Also, long *ī* is seen in the sg. These are aorist forms as *āṣ-īt* from *aṣ* ("to be", see pp. 167).

3. Par. *bruv-an-ti* versus ātm. *bruv-a-tê* is explained as in *duh* (4a and 4b, p. 170) above.

śās ("to rule, to instruct")

śās is the OI root in full grade. By **Lar_ *V***, IE $^*\acute{k}eHs$ leads to

◇ the strong forms with *śās*

◇ the weak forms *śis* and, after applying **RUKI**, finally *śiṣ*.

Consider

	$\surd$*śās* ← IE $^*\acute{k}eHs$, parasmâipada			
	sg.	dual	pl.	
1	***śās-mi***	*śiṣ-vas* (1)	*śiṣ-mas* (1)	present
2	***śās-si***	*śiṣ-ṭhas* (1, 2)	*śiṣ-ṭha* (1, 2)	indicative
3	***śās-ti***	*śiṣ-ṭas* (1, 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* (1, 2)	*a-śiṣ-ṭa* (1, 2)	(sec. end.)
3	***a-śāt*** (3)	*a-śiṣ-ṭām* (1, 2)	***a-śās-us*** (4, 6)	with augm.
1	***śās-āni***	***śās-āva***	***śās-āma***	imper-
2	***śā-dhi*** (5)	*śiṣ-ṭam* (1, 2)	*śiṣ-ṭa* (1, 2)	ative
3	***śās-tu***	*śiṣ-ṭām* (1, 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. u.at *a-śās* ← *a-śās-t*

   The forms *a-śāt* for both 2. and 3. pers. sg. are 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, imper. 2. pers. sg. *śādhi* is strong:

   IE **ḱeHs-dhi* (full grade with IE imper. marker *dhi*)
   → *śās-dhi*
   → *śāz-dhi* (***sz*** before voiced stop)
   → *śā-dhi* (**CpL*z*** 4. line, with *ā* long already)

6. Quite unusual for the 2. class, the thematic *a* in par. 3. pers. pl. forms does **not** show. Also the 3. pers. pl. forms are irregularly strong.

Narten verbs

The so-called Narten presents exhibit unusual forms:

	$\sqrt{}$*nu* ← IE **neHu*, parasmâipada			
	sg.	dual	pl.	
1	***nâu-mi*** (1)	*nu-vas* (3)	*nu-mas* (3)	present
2	***nâu-ṣi*** (1)	*nu-thas*	*nu-tha*	indicative
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 Indo-European reconstruction is far from certain. Assuming that IE **neHu* is correct, the full (!) grade before consonant endings like *ti* can be explained by IE **neHv-ti* → OI *nâu-ti* from **Lar_*V*** and **DIPH**.

2. The full grade before vowel ending would have produced forms like 1. pers. sg. impf. u.at. *a-nāv-am* ← IE **e-neHv-V-*. Instead, observe *a-nav-am*, perhaps by analogy with forms like *a-su-nav-am* from *su* ("to press").

3. From the postulate of IE **neHu*, the weak forms in *nu* like *nu-mas* are perfectly regular by **Lar_*CH*** and IE **nHu-mes* → OI *nu-mas*.

4. Forms like *nuv-an-ti* exhibit the intervening *v* according to the rule

				example
V+SV	*CRyV*	→	*CRiyV*	*mr-iy-a-tê*
	CRuV	→	*CRuvV*	*āp-nuv-an-ti*

Brief comments on two other verbs

Two verbs with a sêṭ-root are now mentioned. The *i* acts as a sort of thematic vowel in case of consonant endings. Compare

◇ *svap-i-ti* ("he sleeps") with *svap-an-ti* ("they sleep") with strong forms throughout the paradigm

◇ *rôd-i-ti* ("he weeps"), *rud-an-ti* ("they weep") with regular distribution of strong and weak forms

D.1.4. The third class

Introductory remark and overview

Third-class verbs are characterised by reduplication. Here, 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").

Take close looks at

◇ *bhṛ* ("to support, to hold") on pp. 180

◇ *bhī* ("to be afraid") on pp. 181

◇ *hu* ("to sacrifice") on pp. 183

◇ *hā* ("to abandon") on pp. 184

◇ *dā* ("to give") on pp. 184

◇ *dhā* ("to set") on pp. 186

bhṛ **("to support, to hold")**

First, consider *bhṛ* ("to support"). The strong froms build on *bi-bhar* and the weak ones on *bi-bhṛ*. One obtains the quite regular pattern:

	$\surd$*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*	indicative
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 par. 3. pers. pl. impf. *a-bi-bhar-us* is characterised 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 athematic classes, there is no borrowing of thematic vowel *a* in par. 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!

   observe

   $$bi\text{-}bhr\text{-}\underset{\circ}{n}\text{-}ti \quad \rightarrow \quad bi\text{-}bhr\text{-}a\text{-}ti$$

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 imper. 1. pers., the ātmanêpada forms are all weak (as they should be):

	$\sqrt{}$*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)	indicative
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. Observe syllabic *ṛ* in the weak forms before consonant endings, for example *bi-bhṛ-tê*.

2. Note *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"), the forms for *bhī*, *bi-bhê-ti* ("to be afraid") are not difficult. The IE root is *bheiH*. The full grade and the zero grade of both roots are formed regularly:

	$\sqrt{}$*bhṛ* ← IE **bher*	$\sqrt{}$*bhī* ← IE **bheih*$_2$
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:

	$\sqrt{}$*bhī* ← IE **bheih*$_2$, 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)	ind.
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)	imper.
2	*bi-bhī-hi* (4)	*bi-bhī-tam* (4)	*bi-bhī-ta* (4)	(sec.
3	***bi-bhê-tu*** (1)	*bi-bhī-tām* (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 testify for the sound law *ī* ← *iH* as *bi-bhī-vas*. 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, observe

   IE **bhi-bhih*$_2$-*n̥-ti* (reduplication, zero grade)
   → *bi-bhī-n̥-ti* (**DA**, **Lar_*V***)
   → *bi-bhy-a-ti* (**SY_Conf**)

6. Just as *a-bi-bhar-us*, par. 3. pers. pl. impf. *a-bi-bhay-us*
   a) uses the strong form in violation of figure D.1 and
   b) exhibits the ending *us*.

7. In spite of all the similarities between *bhī* and *bhṛ*, the impf. sg. 2. and 3. persons differ:

	imperfect singular	
	2. pers.	3. pers.
$\sqrt{}$*bhṛ* ← IE **bher*	*a-bi-bhar*	*a-bi-bhar*
$\sqrt{}$*bhī* ← 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* so that one finds the 3. pers. sg. pres. ind.

IE **ǵhu-ǵheu-ti* (reduplication, full grade)
→ *ǵu-ǵhô-ti* (**DA**, **DIPH**)
→ *ju-hô-ti* (**PPal**, pp. 37)

Consider the paradigm:

	$\sqrt{}$*hu* ← IE **ǵheu*, 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)	indicative
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, 7)	*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.)

Compare the forms for *bhī* ("to be afraid") and *hu* ("sacrifice"):

1. The pres. ind. 3. pers. sg *bi-bhê-ti* and *ju-hô-ti* are both full-grade forms.

2. The pres. ind. 2. pers. sg. *bi-bhê-ṣi* and *ju-hô-ṣi* show **RUKI**, while their impf. counterparts *a-bi-bhê-s* and *a-ju-hô-s* do not (at the end of words).

3. Before vowel endings, impf. 1. pers. sg. *a-bi-bhay-a-m* and *a-ju-hav-a-m* have *ay* and *av* rather than *ê* or *ô,* respectively.

4. Pres. ind. 1. pers. pl. *bi-bhī-mas* and *ju-hu-mas* use the zero grade (with laryngeal explanation of long $\bar{\imath}$).

5. Pres. ind. 3. pers. pl. *bi-bhy-a-ti* corresponds very nicely to *ju-hv-a-ti*, both showing the sound law $\underset{\circ}{n} \rightarrow a$ and the sandhi rule ***SV*** given on p. 22.

6. Impf. 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 **ǵheH* works similar to the one for *hu* ("to sacrifice"). This is how to derive the 3. pers. sg. pres. ind. of *hā*:

IE **ǵhe-ǵheH-ti* (reduplication with IE *e*, zero grade)
→ *ǵe-ǵhā-ti* (**DA**)
→ *ja-hā-ti* (**PPal**)

Consider the paradigm:

	$\sqrt{}$*hā* ← IE **ǵheH*, 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)	indicative
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 pres. ind. 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***).

3. The 2. pers. sg. imperative uses the *hi* marker.

4. The pres. ind. 3. pers. pl. *ja-h-a-ti* is yet another example of the sound law $\underset{\circ}{n} \rightarrow a$. The laryngeal regularly drops after a consonant and before a vowel.

5. Similarly, the laryngeal drops in impf. 3. pers. pl. *a-ja-h-us*. Note the regular zero grade in contrast to the irregular full grade *a-ju-hav-us* in the *hu* paradigm.

dā ("to give")

Let us now turn to *dā* ("to give"):

	$\sqrt{}$*dā* ← 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)	indicative
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 *ā* go back to a laryngeal. The IE full-grade root is *deh*$_3$ → *dā*. The reduplication vowel is OI *a* so that one obtains *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 pres. ind. 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. 126 for the PPP *dat-ta*.

3. Par. imper. 2. pers. sg. *dê-hi* is difficult, but quite regular:

   IE **de-dh*$_3$*-dhi*
   → *da-d-dhi* (**Lar_ *V***, no *i*)
   → *da-dzdhi* (**D*z*D**)
   → *da-zdhi* (**CCl**)
   → *daz-dhi*
   → *dê-dhi* (**CpL*z*** 1. line, before consonant + *i*)
   → *dê-hi* (analogy)

4. *da-d-a-ti* reflects the sound law *n̥* → *a*. If speakers assumed a full-grade root *dad*, the 3. pers. pl. (!) pres. ind. *dad-a-ti* is formed similar to the 2. class *śās-a-ti* (compare p. 178).

5. The impf. 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*), but *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 **dheh*$_1$, 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)	indicative
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, *da-dhā-ti* etc. result.

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. Par. imper. 2. pers. sg. *dhê-hi* may be regular:

   IE **dhe-dhh*$_1$*-dhi*
   → *dha-dh-dhi* (**Lar_ *V***: loss of laryngeal)
   → *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*** 1. line, before consonant + *i*)
   → *dhê-hi* (analogy)

   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, Grassmann's deaspiration could not work in the closed syllable *dha-d*, where an ending beginning with *t* or *th* follows. In all these forms, the non-application of **ASh** is difficult. Should one not expect aspiration shift and forward lenition **dha-dhh*$_1$*-t-* $\rightarrow$ **dha-d-dh-* instead of observed *dha-t-t-*? Perhaps, the laryngeal prevents **ASh**.

Finally, see the reduplicative verb *bhas* in the dictionary.

D.1.5. The fifth class

Introductory remark and overview

In subsection C.2.5 (pp. 93), the nasal classes 5, 8, and 9 have been explained as special subcases of the seventh class. Remember the class signs for strong and weak forms:

class	strong gaṇa sign	3. pers. sg.	weak gaṇa sign	1. pers. pl.
5	*nô*	*śṛ-ṇô-ti*	*nu*	*śṛ-ṇu-mas*
7	*na*	*yu-na-k-ti*	*n*	*yu-ñ-j-mas*
8	*ô*	*tan-ô-ti*	*u*	*tan-u-mas*
9	*nā*	*pu-nā-ti*	*nī*	*pu-nī-mas*

Before dealing with concrete verbs of the 5. class, three features are pointed out:

1. In line with sound law **DIPH** (pp. 24), the strong class sign *nô* turns into *nav* when a vowel follows:

$\sqrt{}$	1. pers. sg. pres. ind.	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*	*a-su-nav-am*	to press

2. The weak class sign *nu* shows predictable variations (see ***SV***) depending on whether a consonant or a vowel follows:

$\sqrt{}$	3. pers. dual pres. ind.	3. pers. pl. pres. ind.	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 u.at. *śak-nv-an-ti* would be quite impossible. *n* would by syllabified, with difficult-to-understand outcome u.at. *śak-av-an-ti* . Hence, the rule

				example
V+SV	*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 reduced to *n* in the 1. pers. dual and pl., present indicative and imperfect:

√	1. pers. pl. pres. ind.		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 u.at. *śak-n-mas* do not work. *n* would by syllabified.

Now consider some verbs of the 5. class, in particular

◇ those ending in *u* like

- *su* ("to press") on pp. 188 and
- *śru* ("to hear") on pp. 189

◇ those ending in a consonant like

- *āp* ("to get") on pp. 190 and
- *aś* ("to get, to enjoy") on pp. 191

su ("to press")

First, consider *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*	indicative
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 (**DIPH**).

2. The strong forms have the strong class sign *nav* before vowel endings (**DIPH**).

3. The weak forms before vowel endings are *nv* (***SV***).

4. In the four weak forms with *m* and *v* endings, alternatively *n* for *nu*, i.e., *su-n-vas* besides *su-nu-vas* etc.

5. Thematic parasmâipada paradigms show the stem as 2. pers. sg. imper., as in *bhara* ("carry!"). This holds for the 5. class verbs ending in *u*, but not for the 5. class verbs ending in a consonant:

   ◇ *su-nu* ("press!") and *śṛ-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. 94) once again. For the purpose of the following paradigm, assume *śṛ* ("to hear") rather than *śru*. The paradigm for *śṛ* closely follows the *su* paradigm above. Observe cerebralisation of the class signs after *ṛ*. For the numbers, see those under the *su* table above.

	√*śṛ/śru* ← IE **kleu*, 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*	indicative
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*:

	√*āp* ← IE **h*$_1$*ep*, parasmâipada			
	sg.	dual	pl.	
1	***āp-nô-mi*** (1)	*āp-nu-vas* (4)	*āp-nu-mas* (4)	present
2	***āp-nô-ṣi*** (1, 6)	*āp-nu-thas*	*āp-nu-tha*	indicative
3	***āp-nô-ti*** (1)	*āp-nu-tas*	*āp-nuv-an-ti* (3)	(prim. end.)
1	***āp-nav-am*** (2)	*āp-nu-va* (4)	*āp-nu-ma* (4)	imperfect
2	***āp-nô-s*** (1)	*āp-nu-tam*	*āp-nu-ta*	(sec. end.)
3	***āp-nô-t*** (1)	*āp-nu-tām*	*āp-nuv-an* (3)	with augm.
1	***āp-nav-āni*** (2)	***āp-nav-āva*** (2)	***āp-nav-āma*** (2)	imper-
2	*āp-ṇu-hi* (5)	*āp-nu-tam*	*āp-nu-ta*	ative
3	***āp-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+SV*** on pp. 23 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 no alternative forms. Indeed, while *āp-nu-ma* is quite transparent, *āp-n-ma* → u.at. *āp-a-ma* is not (see p. 188).

5. In contrast to *su*, observe the (nearly) regular 2. pers. sg. imper. marker of parasmâipada verbs *hi*.

6. **RUKI**.

aś ("to get, to enjoy")

Turn now 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)	indicative
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+SV*** (pp. 23).

3. A specific example of *nuv* before vowel endings is provided by pres. ind. 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**

D.1.6. 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. 93). Have a look at these verbs:

√	3. pers. sg.	1. pers. pl.	pp.
yuj	*yu-na-k-ti*	*yu-ñ-j-mas*	192
rudh	*ru-ṇa-d-dhi*	*ru-n-dh-mas*	193
bhid	*bhi-na-t-ti*	*bhi-n-d-mas*	195
hi-ṃ-s	*hi-na-s-ti*	*hi-ṃ-s-mas*	196

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. 145) 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 **yeug*, 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)	indicative
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*** (4)	*a-yu-ṅ-k-tam* (3)	*a-yu-ṅ-k-ta* (3)	(sec. end.)
3	***a-yu-na-k*** (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*, voiced *g* is seen before voiced dentals (**BA**).

3. Instead of *j*, nonvoiced *k* shows before nonvoiced consonants (**BA**).

4. The impf. sg. forms *a-yu-na-k* reflect sound laws **BA** and **CCl**, i.e., *a-yu-na-k* results from u.at. *a-yu-na-g-s* or u.at. *a-yu-na-g-t*, respectively. Alternatively, one would get the same result by applying **CCl** and **AFP**, in that order.

5. In 3. pers. pl. forms, *a* is present in both parasmâipada and ātmanêpada forms:
   a) In par. 3. pers. pl. forms like *yu-ñ-j-an-ti* (paradigm above), one finds *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-g-n̥-toi.*

And here you see the ātmanêpada paradigm, where the numbers are explained above:

	$\sqrt{}$*yuj* ← IE **yeug*, 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)	indicative
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), Bartholomae's law is applied. First, consider the parasmâipada paradigm:

	$\sqrt{}$*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)	indicative
3	***ru-ṇa-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. 39). In particular, distinguish between 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. ind. 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 par. pres. ind. 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. ind. 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, *a* is observed in both parasmâipada and ātmanêpada forms:

   a) In par. 3. pers. pl. forms like *ru-n-dh-an-ti* (paradigm above), *an* is present 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 *n̥*.

5. The impf. 3. pers. sg. can be explained by

   $$\begin{aligned} & {}^{*}a\text{-}ru\text{-}ṇa\text{-}dh\text{-}t \\ \rightarrow \quad & a\text{-}ru\text{-}ṇa\text{-}dh \ (\mathbf{CCl}) \\ \rightarrow \quad & a\text{-}ru\text{-}ṇa\text{-}t \ (\mathbf{AFP}) \end{aligned}$$

   This also works for the 2. pers., with ending *s* rather than ending *t*. However, the 2. pers. admits a variant *a-ru-ṇa-s*, which restores the usual marker *s*.

And here you see the ātmanêpada paradigm, where the numbers are explained above:

	$\sqrt{}$*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)	indicative
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")**

Turn now to *bhid* ("to break"):

	$\sqrt{}$*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-t-thas* (3)	*bhi-n-t-tha* (3)	indicative
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*** (4)	*a-bhi-n-t-tam* (3)	*a-bhi-n-t-ta* (3)	(sec. end.)
3	***a-bhi-na-t*** (4)	*a-bhi-n-t-tām* (3)	*a-bhi-n-d-an* (1, 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* (1, 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. Root-final *d* and ending-initial *dh* of par. 2. pers. sg. imper. and ātm. 2. pers. pl. are dental.

3. Instead of *d*, nonvoiced *t* shows 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* results from u.at. *a-bhi-na-d-s* or u.at. *a-bhi-na-d-t*, respectively. Alternatively, one would get the same result by applying **CCl** and **AFP.** However, the 2. pers. admits a variant which restores the usual marker *s*.

5. In 3. pers. pl. forms, *a* is again present in both parasmâipada and ātmanêpada forms:

   a) In par. 3. pers. pl. forms like *bhi-n-d-an-ti* (paradigm above), *an* is 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)	indicative
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. The derivation of *hiṃs* as a desiderative from *han* is shown on p. 145. Here, as a 7. class verb, the strong sign is *na*, while the weak sign is *ṃ* (by ***Ns*** expected *sandhi* before *s*):

	√*hiṃs* parasmâipada			
	sg.	dual	pl.	
1	***hi-na-s-mi***	*hiṃs-vas* (2)	*hiṃs-mas* (2)	present
2	***hi-na-s-si***	*hiṃs-thas* (2)	*hiṃs-tha* (2)	indicative
3	***hi-na-s-ti***	*hiṃs-tas* (2)	*hiṃs-an-ti* (2)	(prim. end.)
1	***a-hi-na-s-am***	*a-hiṃs-va* (2)	*a-hiṃs-ma* (2)	imperfect
2	***a-hi-na-s/a-hi-na-t*** (1)	*a-hiṃs-tam* (2)	*a-hiṃs-ta* (2)	(sec. end.)
3	***a-hi-na-t*** (1)	*a-hiṃs-tām* (2)	*a-hiṃs-an* (2)	with augm.
1	***hi-na-s-āni***	***hi-na-s-āva***	***hi-na-s-āma***	imper-
2	*hi-n-dhi* (3)	*hiṃs-tam* (2)	*hiṃs-ta* (2)	ative
3	***hi-na-s-tu***	*hiṃs-tām* (2)	*hiṃs-an-tu* (2)	(sec. end.)

1. For the impf. 2. pers. sg. observe

$$\begin{array}{rl} & {}^{*}\textit{a-hi-na-s-s} \\ \rightarrow & \textit{a-hi-na-s}\ (\mathbf{CCl}) \end{array}$$

   The same form should be produced in the 3. pers., u.at. *a-hi-na-s-t* → *a-hi-na-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. Sound law ***Ns***.

3. The form *hi-n-dhi* for expected **hi-ṃ-s-dhi* is mysterious.

D.1.7. 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. 94. The focus is on *tan* ("to stretch, to extend"). In presenting the *tan* paradigms, assume the gaṇa signs *ô* and *u*, respectively, in line with traditional Indian grammar. Additionally, the paradigm for the very frequent verb *kṛ* ("to do, to make") is presented on pp. 199.

tan ("to stretch, to extend")

First, the parasmâipada paradigm of *tan* ("to stretch, to extend"):

	√*tan* ← 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*	indicative
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 (borrowed from the thematic classes) have the weak class sign *v* (see ***SV***).
4. In the four weak forms with *m* and *v* endings, alternatively ∅ for *u*, i.e., *tan-mas* besides *tan-u-mas* etc.
5. Thematic parasmâipada paradigms show the stem as 2. pers. sg. imper., as in *bhara* ("carry!"). This holds here for *tan-u* ("stretch!") as for some verbs from the 5. class like *su-nu*.
6. **RUKI**.

Turn now 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)	indicative
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)	*tan-v-āthām* (2)	*tan-u-dhvam* (1)	ative
3	*tan-u-tām* (1)	*tan-v-ātām* (2)	*tan-v-a-tām* (2, 3)	(sec. end.)

1. Expectedly, the weak class signs before consonants are *u*, for example *tan-u-têˆ*.

2. The weak forms before vowels are *v*, for example *tan-v-êˆ* and *a-tan-v-i*.

3. Other examples of *v* before vowel endings are provided by 3. pers. pl. *tan-v-atêˆ* etc., where *a* goes back to *n*̊.

4. The strong forms have the class sign *av* before vowel endings (**DIPH**), for example *tan-av-âˆi*.

5. In the four weak forms with *m* and *v* endings, alternatively no class sign instead of class sign *u,* similar to some verbs from the 5. class (*su-n(u)-mahêˆ*).

6. **RUKI**

kṛ ("to do, to make")

kṛ ("to do, to make") has OI *k* throughout the paradigm, disregarding any secondary palatalisation. The paradigm differs somewhat from the paradigm for nasal verbs like *tan*:

	√*kṛ*, 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*	indicative
3	***kar-ô-ti*** (1a)	*kur-u-tas*	*kur-v-an-ti* (2)	(prim. end.)
1	***a-kar-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*. In contrast, other verbs like *tan* originally use the zero grade (see pp. 94). The class sign is

   a) *ô* before consonant endings.

   b) *av* before vowel endings.

2. The weak form is *kur-u*, but *v* before vowel endings (***SV***), for example *kur-v-an-ti*.

3. In the four weak forms with *m* and *v* endings, the zero marker is imployed. Thus,

   ◇ for *tan*, *tan-vas* contrasts with *tan-u-vas*

◇ but *kṛ* shows only *kur-vas*.

4. Similar to *su-nu* (5. class) and *tan-u* (8. class), note *kur-u* ("do!").

5. **RUKI**

Now consider the ātmanêpada paradigm:

	$\sqrt{kṛ}$ ← IE $*k^{w}er$, ātmanêpada			
	sg.	dual	pl.	
1	*kur-v-ê* (2)	*kur-vahê* (5)	*kur-mahê* (5)	present
2	*kur-u-ṣê* (1, 6)	*kur-v-āthê* (2)	*kur-u-dhvê* (1)	indicative
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* (5)	*a-kur-mahi* (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	***kar-av-âi*** (4)	***kar-av-ā-vahâi*** (4)	***kar-av-ā-mahâi*** (4)	imper-
2	*kur-u-ṣva* (1, 6)	*kur-v-āthām* (2)	*kur-u-dhvam* (1)	ative
3	*kur-u-tām* (1)	*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 *v*, for example *kur-v-ê*.

3. Forms like 3. pers. pl. *kur-v-atê* show $a \leftarrow \underset{\circ}{n}$.

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, observe the zero class sign.

6. **RUKI**

D.1.8. The ninth class

The class signs for the 9. class are *nā* (strong forms) and *nī* (weak forms). Revisit pp. 93. 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* ← 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*	indicative
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. Consider *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-an-ti*) have been modelled on the many other athematic forms like *duh-an-ti* (2. class) or *kur-v-an-ti* (8. class). The weak class sign is just *n*, not *nī*. This is expected by **Lar__*CH*** from IE **pu-n-H-on-ti.*
4. Observe imperative *pu-nī-hi* instead of **pu-nī-dhi.*

The ātmanêpada paradigm is also not spectacular:

	$\sqrt{}$*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*	indicative
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)	*pu-n-āthām* (2)	*pu-nī-dhvam*	ative
3	*pu-nī-tām*	*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. A similar reduction is obvious in weak forms like *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-a-tê*) 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 is just *n*, not *nī*.

4. *a-pu-n-i* is modelled on 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 resulting 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. 44) in all class signs: *krī-ṇā-ti* and *krī-ṇī-mas*

◇ irregular *krī* (with long *ī*) in forms with weak or strong class sign:

	$\sqrt{}$*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*	indicative
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 par. 2. pers. imper.:

$\sqrt{}$	pres. ind. 3. pers. sg.	imper., 2. pers. sg.	translation
aś (f.g.)	*aś-nā-ti* (f.g.)	*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* (z.g.)	*badh-āna* (z.g.)	bind!
muṣ	*muṣ-ṇā-ti*	*muṣ-āṇa*	rob!
stambh (f.g.)	*stabh-nā-ti* (z.g.)	*stabh-āna* (z.g.)	support!

D.2. Reduplicative perfect

D.2.1. General remarks

The reduplicative perfect is mainly attested for the 3. pers. sg. It is

◇ strong for par. sg.,

◇ weak for dual, pl., or ātm.

Reduplication for the perfect works similar to that of 3. class verbs (p. 179). Interestingly, the par. 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. 185)

In roots without semivowels, the initial consonant plus *a* ← IE *e* (!) is placed before the full-grade root (strong forms) or the zero-grade root (weak forms). Roots with semivowels use the semivowel for reduplication:

◇ *u* roots (such as *yuj*) always reduplicate with *u.*

◇ *i* roots (such as *lih*) always reduplicate with *i.*

D.2.2. Strong forms

Qualitative ablaut

First, consider the strong forms. They are built with the qualitative ablaut, the *o*-grade. Then, one obtains

◇ IE *o* → OI *a*

◇ IE *oi* → OI *ê*

◇ IE *ou* → OI *ô*

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 enter
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.

When the root initial is an aspirated consonant, Grassmann's law (**DA**) applies:

√	perfect, 3. pers. sg.	translation
chid	*ci-cchêd-a*	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 stative meaning and stands for a class of IE perfects without reduplication.

Brugmann's law

Remember Brugmann's law **L*o***:

L*o* OI *oCV* → OI *āCV*

In the above examples, this law was not applied. For example, *o* in **bhi-bhoid-e* is not in an open syllable because both the semivowel *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

In 1. pers. sg., the syllable is not open due to the IE ending so that **L*o*** does not apply there (pp. 35).

Samprasāraṇa

Now consider roots with initial vowel or initial semivowel. They reduplicate with this vowel or semivowel (samprasāraṇa), totally in line with our general reduplication rule above. Except for *iṣ*, the examples in the following table result from **L*o***:

√	perfect, 3. pers. sg.	translation
i	*iy-āy-a* (***V+SV***)	to go
iṣ	*iy-êṣ-a* (***V+SV***)	to wish
yaj (f.g.)	*i-yāj-a*	to sacrifice
vac (f.g.)	*u-vāc-a*	to say
vad (f.g.)	*u-vād-a*	to say
vap (f.g.)	*u-vāp-a*	to sow
vas (f.g.)	*u-vās-a*	to dwell
vah (f.g.)	*u-vāh-a*	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 result:

√ full grade	IE f.g. root	perfect, 3. pers. sg.	translation
aś	$^*HeḱH$ (f.g)	*āś-a* ← IE $^*He$-$Hoḱ$-*e*	to eat
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

Palatalisation

Primary palatalisation (**PPal**), secondary palatalisation (**SPal**), and analogical palatalisation are involved in the formation of the perfect forms. For *hu* ("to sacrifice"), see

IE $^*ǵhu$-$ǵhou$-*e* (reduplication, *o*-grade)
→ *ǵu-ǵhou-e* (**DA**)
→ *ju-hov-e* (**PPal**, ***SV***)
→ *ju-hōv-e* (**L*o***)
→ *ju-hāv-a* (***aā***)

Similarly,

√	perfect, 3. pers. sg.	translation
has (f.g.)	*ja-hās-a*	to laugh
hṛ	*ja-hār-a*	to take

You may have noticed that secondary palatalisation 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 the front vowel IE *e* (see figure B.2, p. 38). For the root-initial consonant, secondary palatalisation happens for the reduplication consonants *i* and *a* ← IE *e* (!). For *han* ("to hit"), consider

IE $^*g^whe\text{-}g^whon\text{-}e$ (reduplication, *o*-grade)
→ $g^we\text{-}g^whon\text{-}e$ (**DA**)
→ *je-ghon-e* (**SPal**)
→ *ja-ghōn-e* (**L*o***)
→ *ja-ghān-a* (***aā***)

Similarly, see

√	perfect, 3. pers. sg.	translation
kṛ	*ca-kār-a* ← IE $^*k^we\text{-}k^wor\text{-}e$	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 $^*g^we\text{-}g^wom\text{-}e$	to go
ji	*ji-ghāy-a* ← IE $^*ghi\text{-}ghoy\text{-}e$	to conquer

1. *khan* is a laryngeal root ← IE $^*khenH$ (see PPP *khā-ta*, p. 126). Hence, *ca-khān-a* ← IE $^*khe\text{-}khonH\text{-}e$ does not work because the syllable *khonH* ends in two consonants and is not open so that **L*o*** does not apply.

Apparently, secondary palatalisation 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, proportional analogy was operative, 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-povH-e*	to clean
bhī	*bi-bhāy-a*	*bi-bhay-a* ← IE **bhi-bhoyH-e*	to fear
bhū	*ba-bhūv-a*	*bu-bhav-a* ← IE **bhu-bhovH-e*	to be

where the conditions for **L*o*** (syllables need to be open) are not fulfilled. On top, *ba-bhūv-a* exhibits an 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*:

√	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.

D.2.3. Weak forms

Examples for root vowels *i*, *u* or *a*

The weak forms are built with the zero grade. First, consider 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*	*ci-cchid-us*	to cut
ji	*ji-ghāy-a*	*ji-ghy-us* (***SV***)	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+SV***)	to hear
su	*su-ṣāv-a* (**RUKI**, **Lo**)	*su-ṣuv-us* (**RUKI**, ***V+SV***)	to press
svap (f.g.)	*su-ṣvāp-a* (**RUKI**, **Lo**)	*su-ṣup-us* (**RUKI**)	to sleep

Finally, here are some examples for roots without semivowels:

√	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	*ja-hār-a* (**Lo**)	*ja-hr-us*	to take

Exceptionally, one finds irregular 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* (**L*o***)	*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 (**VS** 1. line).

√	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:

√	perfect, 3. pers. sg.	perfect, 3. pers. pl.	translation
āp (see dictionary)	*āp-a*	*āp-us*	to obtain
aś (f.g.)	*āś-a*	*āś-us* ("wrong")	to eat
as (f.g.)	*ās-a*	*ās-us* ("wrong")	to be
ah (f.g.)	*āh-a*	*āh-us* ("wrong")	to say

Difficult reduplications

Turn now to the sizable number of instances where the perfect seems to be formed without reduplication. A first group surprisingly has *ê* turn up in the root:

√ in f.g.	pf., 3. pers. sg., par.	pf., 3. pers. pl., par.	pf., 3. pers. sg., 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
sah			*sêh-ê*	to endure

Importantly, regular reduplication is indeed present in *yat*, *sad*, and *sah*. In that order, see

IE **ye-it-* (reduplication, zero grade)
→ *yêt-* (**DIPH**)

and

IE **se-sd-* (reduplication, zero grade)
→ *sa-zd-* (***aā***, ***sz*** before voiced consonant)
→ *sêd-* (**CpL*z*** 1. line, perhaps before consonant + *i*)

and

IE **se-sǵh-* (reduplication, zero grade)
→ *sa-zǵh-* (***aā***, ***sz*** before voiced consonant)
→ *sêh-* (**CpL*z*** 1. line, perhaps before consonant + *i*)

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*

Three additional difficult reduplications need to be tackled. First, the verbal root of the 2. class ***takṣ***, ***tāṣ-ṭi*** goes back to a reduplicated perfect from IE *root* **teḱ* (“to produce”):

IE **te-tḱ-V* (reduplication syllable + z.g. root)
→ *ta-kṣ-V* (***aā***, **SIB** line 6)

with perfect 3. pers. pl. Ved. *takṣus.* OI *ta-takṣ-a* is then the (strong) perfect of *takṣ*, a second-order perfect of u.at. *taś*. More difficult is *tāṣ-ṭi* which seems to have come about by

IE **te-tḱ-ti* (reduplication syllable + z.g. root)
→ *t-etḱ-ti*
→ *t-āḱ-ti* (***aā***, irregular application of **CpL*dḱ***)
→ *tāṣ-ti* (**PPal**)
→ *tāṣ-ṭi* (**Cer*D***)

Second, the verb of the 2. class ***dāś***, ***dāṣ-ṭi*** originates from a weak perfect that builds on IE root **deḱ* (“to receive, to embellish”):

IE **de-dḱ* (reduplication syllable + z.g. root)
→ *dāḱ* (***aā***, **CpL*dḱ***)
→ *dāś* (**PPal**)

The corresponding pf.P is *dāśva* which is corrupted from *dāś-va(n)s* (“liberal, a donor”). However, *da-dāś-a* might either be the strong perfect of u.at. *daś* or, alternatively, a second-order of *dāś* (s.v. *daśas*, p. 326).

Third, consider *sah, sahati* (“to tolerate”) with pf.P Ved. *sāh-va(n)s* which can be derived as follows:

IE **se-sǵh-v* (reduplication syllable + z.g. root + pfP marker)
→ *sas-ǵhv-* (***aā***)
→ *saz-ǵhv-* (***sz*** before voiced consonant)
→ *sā-ǵhv-* (**CpL*z*** 1. line, perhaps before consonant + *i*)
→ *sā-hv-* (**PPal**)

D.2.4. Conjugation

For *tud* (“to hit”), consider

	$\sqrt{}$*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 pres. ind. *bhar-ê* and *bhar-a-sê*.

4. Compare pres. ind. *bhar-ā-mahê* and *bhar-ā-vahê*.

5. Compare pres. ind. *bhar-a-dhvê*.

6. Compare pres. ind. *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*

D.3. Aorist

D.3.1. General remarks

Aorist is yet another form of past tense. The aorist formation does not use any present-stem 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, compare these aorist 3. sg. forms:

aorist	√	augm.	redupl.	root.	infix	them. vow./infix	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:

aorist		√	3. sg.	3. pl.	pp.
thematic		*yuj*	*a-yuj-a-t*	*a-yuj-a-n*	213
reduplicated		*pat*	*a-pa-pt-a-t*	*a-pa-pt-a-n*	214
root		*bhū*	*a-bhū-t*	*a-bhūv-an*	215
sigmatic	*s*	*yuj*	*a-yâuk-ṣ-ī-t*	*a-yâuk-ṣ-us*	217
	sa	*diś*	*a-dik-ṣ-a-t*	*a-dik-ṣ-a-n*	215
	iṣ	*vad*	*a-vad-ī-t*	*a-vad-iṣ-us*	216
	siṣ	*snā*	*a-snā-sī-t*	*a-snā-siṣ-us*	217

D.3.2. 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. 155).

Some of the aorists explained below also use the thematic *a*.

D.3.3. Reduplicated aorist

The reduplicated aorist is formed by this formula:

augment + reduplicated zero-grade root + *a* + ending

Consider these three examples for the 3. pers. 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 becomes *a-vôc-a-t* (**VS** 3. line).

The parasmâipada paradigm for *muc* 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*, note the thematic secondary ātmanêpada endings (p. 157).

	√*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-an-ta*

You need to replace *vôc* by *mū-muc* if you want to know the ātmanêpada for *muc*.

D.3.4. Root aorist

The root aorist obeys the simple formula of

augment + zero-grade or full-grade root + ending

Consider the three examples for the 3. pers. sg.:

root aorist	√	augm.	root	end.
	dā (f.g.!)	*a*	*dā*	*t*
	bhū	*a*	*bhū*	*t*
	sthā (f.g.!)	*a*	*sthā*	*t*

First, consider the parasmâipada for *dā*:

	√*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. 160, secondary athematic endings often have the variant *us* in 3. pers. pl. This is also the case here. After all, u.at. *dā-us* and hence *dôs* would have been unrecognisable. Instead, the actual form is *a-d-us*.

Consider, now, the root aorist for *bhū*. Before vowel endings (*am* and *an*, respectively, see 160), ***V+SV*** would lead us to expect *bhuv*, but not the attested *bhūv*:

	√*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*

D.3.5. Sigmatic aorist with *sa*

There are four sigmatic aorists. The *sa*-aorist is formed by

augment + zero-grade root + *s* + *a* + ending

For example, **SIB** yields these 3. pers. sg. examples:

sa-aorist	√	augm.	root	infix	them. vow.	end.
	diś	*a*	*dik*	*ṣ* (**SIB** 3. line)	*a*	*t*
	dviṣ	*a*	*dvik*	*ṣ* (**SIB** 2. line)	*a*	*t*
	viś	*a*	*vik*	*ṣ* (**SIB** 3. line)	*a*	*t*

The endings are the expected ones. The parasmâipada paradigm for *diś* is given by

	√*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*

D.3.6. Sigmatic aorist with *iṣ*

Next, consider the *iṣ*-aorist:

augment + full-grade root + *iṣ* + ending

Originally, *iṣ* has been used in sêṭ verbs, but this formation spread to other verbs, similar to the future tense. For example, see these 3. pers. sg. forms:

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 becomes *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 $\bar{\imath}$ by secondary ending
turns into	*a-bôdh-ī-t*	with $\bar{\imath}$

   These two singular forms with "$\bar{\imath}$ 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.

D.3.7. Sigmatic aorist with *siṣ*

A few 2. class roots ending in $\bar{a}$ use the *siṣ*-aorist and obey this formula:

augment + full-grade root + *siṣ* + ending

Consider these 3. pers. sg. 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 the *budh* paradigm above. Here, then, *sī* (rather than $\bar{\imath}$) plus par. secondary ending lead to forms like *a-yā-sī-t*, not expected u.at. *a-yā-siṣ-ṭ* which would then be subject to **CCl**. In any case, here comes the paradigm for *yā*:

	√*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*

D.3.8. Sigmatic aorist with *s*

Finally, turn to the *s*-aorist which follows this pattern for parasmâipada:

augment + lengthened root + *s* + ending

Consider these examples for 3. pers. pl.:

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 backward assimilation operates as expected. *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. 40).

In the above table, the 3. pers. pl. forms are listed. Contrasting the sg. and pl. forms yields

s-aorist	√	3. sg.	3. pl.
	kṛ	*a-kār-ṣ-ī-t*	*a-kār-ṣ-us*
	bandh (f.g.)	*a-bhānt-s-ī-t*	*a-bhānt-s-us*
	bhaj (f.g.)	*a-bhāk-ṣ-ī-t*	*a-bhāk-ṣ-us*
	tap (f.g.)	*a-tāp-s-ī-t*	*a-tāp-s-us*
	yuj	*a-yâuk-ṣ-ī-t*	*a-yâuk-ṣ-us*
	vas (f.g.)	*a-vāt-s-ī-t*	*a-vāt-s-us*
	vah (f.g.)	*a-vāk-ṣ-ī-t*	*a-vāk-ṣ-us*
	śap (f.g.)	*a-śāp-s-ī-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 u.at. *a-yâuk-s-t* would have produced u.at. *a-yâuk* by **CCl**.

The parasmâipada paradigm for *kṛ* is now easy:

	$\sqrt{}$*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 (full grade, not lengthened grade) for *śap* are

	$\sqrt{}$*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** 2. line

2. Regularly, the athematic ending 3. pl. is *a-ta* from IE *n̥-to* (or later analogy from similar cases).

E. Declensions

E.1. Nouns: categories

E.1.1. Distribution of weak and strong forms

A nominal "stem" is the basis from which (many) other forms are derived. As an example, consider the adjective with stem *bala-vant*. It can be used to build the accusative singular *bala-vant-am* (which is a "strong form") and the instrumental singular *bala-vat-ā* (a "weak form"). Here, "strong" and "weak" refer to suffixes, not to verbal roots. Nouns whose stem ends in a consonant often distinguish between weak and strong forms. Strong forms typically take the full grade of a suffix and weak forms the zero grade of the suffix. In particular, masculine (m.) and feminine (f.) nouns show strong forms in nominative (nom.), vocative (voc.), and accusative (acc.) with the exception of 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 figure E.1 the strong forms are marked.

E.1.2. Characteristics of vocalic and consonantal nouns

For the purposes of this book[8], I distinguish between vocalic and consonantal nouns in the following manner:

	stem ends in	weak/strong	acc. pl. m.	acc. pl. f.	gen. pl.
cons. nouns	a consonant	sometimes	*as*	*as*	*ām*
voc. nouns	a vowel *V*	never	$\bar{V}n$ (1)	$\bar{V}s$	$\bar{V}n\bar{a}m$ (2)

1. $\bar{V}n \leftarrow Vns$ (**CpL*s***)
2. $\bar{V}n\bar{a}m \leftarrow VHn\bar{o}m$ (**Lar_*V***)

It seems that the f. sg. endings are characterised by

	acc.	dative	abl./gen.	locative
cons. nouns	*am* (as also m. nouns)	*ê*	*as*	*i*
voc. nouns	*m* (as also m. nouns)	$\hat{a}i \leftarrow a + \hat{e}$	$\bar{a}s \leftarrow a + as$	*ām*

[8] Note, however, that Fortson IV (2004, chapter 6) and other Indo-European scholars use the term "thematic nouns" in the sense of *a* and *ā* stems (subsection E.3.10).

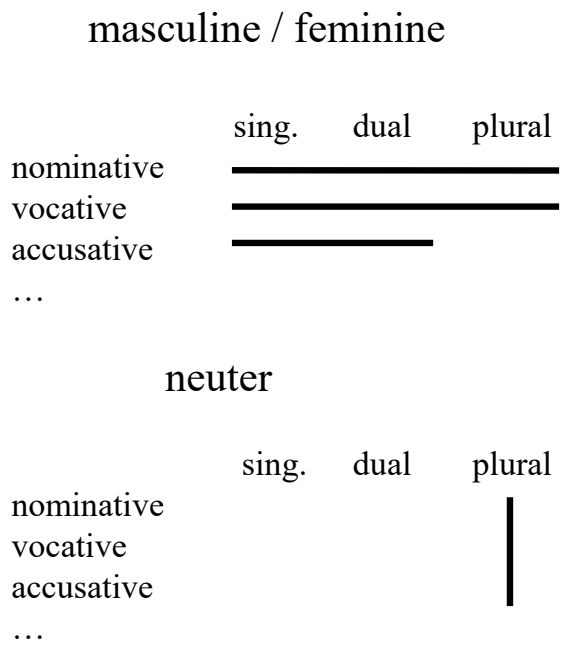

Figure E.1.: Strong forms in consonant-final nouns

E.1.3. Consonantal nouns

Quite a few classes of nouns have stems ending in consonants. Distinguish between consonantal nouns with

- ◇ one stem, such as *marut* (“wind”) (no weak-strong alternation)
- ◇ stems in *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 *râi* (“wealth”) and *glâu* (“moon”)

E.1.4. Vocalic nouns

Many classes of nouns exhibit stems ending in vowels or, very rarely, diphthongs. They do not show the weak-strong alternation indicated by the above figure. Remember the convention for citing nouns given in subsection A.7, pp. 9:

- ◇ *a* stems
  - *dêva*

- *phalam*

◇ *ā* stems, such as *sênā*

◇ *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*

E.1.5. Hybrid 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 consonantal and vocalic nouns:

	stem ends in	weak/strong	acc. pl. m.	acc. pl. f.	gen. pl.
cons. nouns	*C*: *pitar*	yes			
voc. nouns	*V*: *pitṛ*		*pitṝn*	*mātṝs*	*pitṝṇām*

E.2. Nouns: endings

E.2.1. A few general remarks

Endings found in all declensions

In all declensions, observe

any stem	case	sg.	dual	pl.
	nom.		iden-	iden-
	voc.			tical
	acc.		tical	

any stem	case	sg.	dual	pl.
	instr.		*-bhyām*	
	dat.		*-bhyām*	*-bhyas*
	abl.		*-bhyām*	*-bhyas*
	gen.		*-ôs*	*-ām*
	loc.		*-ôs*	*-su*

In the following subsections, similarities found across declensions are highlighted. Thus prepared, individual declensions can be dealt with.

Neutral endings NVA

With the exception of neuter *a* nouns (like *phalam*), 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, consider

jagat n. ("world")	case	sg.	dual	pl.
	nom.	*jagat*	*jagat-ī* (1)	***jagant-i***
	voc.	*jagat*	*jagat-ī* (1)	***jagant-i***
	acc.	*jagat*	*jagat-ī* (1)	***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* (2)	*van-ê* (1)	*van-āni*
	acc.	*van-a-m*	*van-ê* (1)	*van-āni*
	instr.	*van-êna*	*van-ā-bhyām*	*van-âis*

1. $\bar{\imath}$ from IE dual ending ih_2 is typical for dual NVA. Compare *jagat-ī* with *vanê* ← *vana-ī* (**VS** 2. line).

2. Voc. sg. *vana* equals the stem, but not nom. sg.

s in masculine and feminine nominative singular

Originally, *s* was the IE marker for nom. sg., both m. and f. When this *s* was joined to a final consonant, compensatory lengthening (**CpL*s***) could result. Note that n. sg. had no special ending. The following examples concern only m. nouns:

u.at. *bala-vant-s*	→	u.at. *bala-vann-s*	→	OI *bala-vān*
u.at. *su-man-as-s*	→	OI *su-man-ās*		
u.at. *gir-s*	→	OI *gīr*		

Unfortunately, this model does not always work:

u.at. *gach-ant-s*	→	OI *gach-an* (**CCl**)
u.at. *nêt-ar-s*	→	OI *nêt-ā* (**CpL__*an-in-ar***)
u.at. *rāj-an-s*	→	OI *rājā* (**CpL__*an-in-ar***)
u.at. *yôg-in-s*	→	OI *yôgī* (**CpL__*an-in-ar***)

E.2.2. Locative singular

Locative singular with *i*

Across many declensions, both vocalic and consonantal, the loc. sg. is expressed by *i* (the here-and-now particle). See

◇ stem *tvad* pers. pronoun ("you") with loc. sg. *tvayi*

◇ stem *mad* pers. pronoun ("I") with loc. sg. *mayi*

◇ stem *man-as* n. ("mind") with loc. sg. *man-as-i*

◇ 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., apply **VS** (line 2) and find

◇ *dêv-a* m. ("god") with loc. sg. *dêv-ê* ← u.at. *dêv-a-i*

◇ *van-a-m* n. ("forest") with loc. sg. *van-ê* ← u.at. *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 *mat-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. sg. ending *ām*:

◇ stem *nad-ī* f. (“river”) with loc. sg. *nad-y-ām*

◇ stem *lat-ā* f. (“vine”) with loc. sg. *lat-ā-y-ām*

◇ stem *vadh-ū* f. (“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*

E.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* f. (“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 *man-as* n. (“mind”) with loc. pl. *man-as-su*/*man-aḥ-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* f. (“vine”) with loc. pl. *lat-ā-su*

◇ stem *vadh-ū* f. (“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., note *ê* instead of *a*:

◇ *dêv-a* m. (“god”) with loc. pl. *dêv-ê-ṣu*

◇ *van-a-m* n. (“forest”) with loc. pl. *van-ê-ṣu*

E.2.4. Genitive plural

There two different genitive forms:

◇ *ām* for consonantal nouns

◇ *nām* for vocalic nouns including those on *ṛ*. Since *nām* lengthens the thematic vowels, *nām* may go back to IE *Hnōm* (**Lar_ *V***).

Thus, consider the consonantal genitive 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 vocalic genitive plurals

◇ stem *gur-u* m. (“teacher”) with gen. pl. *gur-ū-ṇām*

◇ stem *dêv-a* m. (“god”) with gen. pl. *dêv-ā-nām*

◇ stem *nad-ī* f. (“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* f. (“vine”) with gen. pl. *lat-ā-nām* (where *ā* is long anyway)

◇ stem *vadh-ū* f. (“bride”) with gen. pl. *vadh-ū-nām* (where *ū* is long anyway)

◇ *van-a-m* (“forest”) n. with gen. pl. *van-ā-nām*

Pronouns are often different:

◇ stem *tad* 3. pers. pronoun (“he, she, that”) with gen. pl.

- m. and n. *têṣām*
- f. *tāsām*

◇ stem *tvad* pers. pronoun ("you") with gen. pl. *yuṣmā-kam*

◇ stem *mad* pers. pronoun ("I") with gen. pl. *asmā-kam*

E.2.5. Accusatives with *m*

For the m. nouns, observe

	singular		plural	
	vocalic	consonantal	vocalic	consonantal
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 characterised by *s* which
   ◇ is clearly seen in vocalic nouns, such as *dêv-a-s*, but
   ◇ is often lost in consonantal nouns due to **CCl**, for example *marut-s* → *marut*

2. Acc. sg. m. (here) and f. are characterised by m. *marut-am* borrows thematic vowel in order to avoid unrecognisable u.at. *maruta* ← *marut*$\underset{\circ}{m}$. Just consider an analogy such as

vāt-a-s ("wind")	with acc. sg.:	*vāt-a-m*
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 $\underset{\circ}{n}$	+	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 *s* is still present in the sandhi rule described on p. 42.

E.3. Nouns: weak and strong forms

E.3.1. Introductory remark and overview

Most nouns in the list below differentiate between strong and weak forms:

◇ one-stem nouns with three categories:
- the most simple case like *marut* ("wind")
- nouns like *sam-rāj* ("ruler"), *vāc* ("voice, word"), *kāma-duh* ("wish-granting cow"), and *a-budh* ("fool") on pp. 231
- neuter *as* nouns like *man-as* on pp. 234

◇ stems in *ant* like *bala-vant* ("he who has strength"), *mahant* ("great"), *bhar-a-nt* (pres.P), *jagat* ("world"), and *bhav-ant* ("your honor") on pp. 237

◇ *an* stems like m. *rāj-an* ("king"), n. *nām-an* ("name"), and n. *karm-an* ("deed") on pp. 245

◇ *in* stems like *yôg-in* ("yogi") and *tapas-vin* ("ascetic") on pp. 249

◇ m. nouns like *nê-tar* ("leader") on pp. 251

◇ kinship nouns like *pitar* ("father") and *mātar* ("mother") on pp. 252

◇ stems in long diphthongs like *râi* ("wealth") and *glâu* ("moon") on pp. 254

◇ f. *ī*- and *ū* stems like *nad-ī* ("river"), *vadh-ū* ("bride"), *bhū* ("earth"), *dhī* ("intellect"), and *strī* ("woman") together with the two m. (!) compounds *su-dhī* ("intelligent") and *prati-bhū* ("guarantor") on pp. 256

◇ *i* and *u* stems like m. *mun-i* ("wise man"), f. *mat-i* ("mind"), m. *gur-u* ("teacher"), f. *dhên-u* ("cow"), n. *madh-u* ("honey"), and m. *pat-i* ("husband") on pp. 261

◇ n. *ṛ* stems like *gant-ṛ* on pp. 267

◇ *a* and *ā* stems like m. *dêv-a,* n. *phal-am*, and f. *sênā* on pp. 267

E.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., both m. and f., are usually characterised by *s*. Here, note *marut-s* → *marut* due to **CCl**.
2. As is the case here, the voc. sg. often equals the stem.
3. The acc. sg. marker is *m* in many declensions. Here, *a* is borrowed from vocalic declensions in order to avoid u.at. *marut-a*.
4. *ā* is the instr. sg. marker in many other declensions, too.
5. *ê* is the dat. sg. marker in many other declensions, too.
6. Observe *as* in
   - ◇ abl. and gen. sg. and
   - ◇ NVA pl.

   This is often the case in consonantal declensions, m. (as here) and f.
7. For the pl. *marut-as* forms, see pp. 228.
8. *i* is the typical loc. sg. marker in consonantal declensions for all three genders.
9. *âu* is the typical ending for NVA dual in consonantal declensions for m. and f. It also shows in m. *a* declension (*dêv-âu*) and in pronouns like *t-âu* and *sarv-âu*.
10. *t* is made voiced before voiced *bh* in some dual and pl. cases.
11. Some forms shown in *marut* are seen in every declension whatsoever (p. 223):
    - ◇ dual instr., dat., and abl. *bhyām*
    - ◇ dual gen. and loc. *ôs*
    - ◇ pl. dat. and abl. *bhyas*

- ◇ pl. gen. *ām* (for consonantal nouns, while *V̄nām* is seen in vocalic ones as in *phalānām*)
- ◇ 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* and *van-âis*. The same holds for most pronouns. *t-âis* and *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

samrāj etc. with soundlaw AFP

According to **AFP** (pp. 47), the following word-final consonants are disallowed:

- ◇ voiced stops
- ◇ aspirated stops
- ◇ palatals *c* (also 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, one obtains paradigms close to the one for *marut*.

Consider *samrāj* m. ("ruler") and *vāc* f. ("voice, word"). Both show astonishing long *ā*. One explanation may be

- ◇ compensatory lengthening for nom. sg. *s* together with
- ◇ spreading to the other forms.

For *samrāj*, consider

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)

samrāj m.	case	sg.	dual	pl.
	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 *samrāṭ-su* are instances of backward assimilation before consonantal endings.

Similar to *samrāj*, one obtains

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 lengthened from *vac* ← IE vek^w, perhaps due to **CpL*s***. 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 $c \to k$	*ṛc*	*ṛk*	*ṛg-bhis*	hymn, verse
	tvac	*tvak*	*tvag-bhis*	skin
	śuc	*śuk*	*śug-bhis*	grief
with $j \to k$	*vaṇij*	*vaṇik*	*vaṇig-bhis*	merchant
	bhiṣaj	*bhiṣak*	*bhiṣag-bhis*	doctor
with $ś \to k$	*diś*	*dik*	*dig-bhis*	direction

and

	stem	nom. sg.	instr. pl.	translation
with $d \to t$	*dṛṣad*	*dṛṣat*	*dṛṣad-bhis*	stone
	vêda-vid	*vêda-vit*	*vêda-vid-bhis*	Veda knower
with $ś/ṣ/h \to ṭ$	*dviṣ*	*dviṭ*	*dviḍ-bhis*	enemy
	pari-vrāj	*pari-vrāṭ*	*pari-vrāg-bhis*	mendicant
	prā-vṛṣ	*prā-vṛṭ*	*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 also seen in future forms on pp. 111. 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**, one obtains 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 or in word-final position. Hence, **DA** does not apply.
3. *k* in word-final position (**AFP**)
4. *g* before voiced endings (**BA**)
5. *k* before loc. pl. ending with voiceless *s* (**BA**) which would then turn into *ṣ* by **RUKI**

Turn to the second example where Grassmann's law and its undoing play a role:

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* (1, 2, 4)	*a-bhud-bhis* (1, 2, 4)
	dat.	*a-budh-ê* (1)	*a-bhud-bhyām* (1, 2, 4)	*a-bhud-bhyas* (1, 2, 4)
	abl.	*a-budh-as* (1)	*a-bhud-bhyām* (1, 2, 4)	*a-bhud-bhyas* (1, 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)

1. By **DA**, one obtains the stem *a-budh*, where the second part originates from IE **bheudh*. These forms closely follow the *marut* pattern.
2. IE *bh* is retained in forms where *dh* was replaced by unaspirated (!) dental before a consonant or where *dh* was in word-final position. Hence, **DA** does not apply.
3. *t* in word-final position (**AFP**)
4. *d* before voiced endings (**BA**). Aspiration shift, but *bh* aspirated already.

E.3.3. Neuter stems in *as*, *is*, and *us*

Similar to *marut* are neuter nouns like *manas* or *havis*. They are two-stem nouns and exhibit strong forms in the pl. forms of NVA cases.

manas n.	case	sg.	dual	pl.
	nom.	*manas* (1)	*manas-ī* (3)	***manāṃs-i*** (4)
	voc.	*manas* (1)	*manas-ī* (3)	***manāṃs-i*** (4)

manas n.	case	sg.	dual	pl.
	acc.	*manas* (1)	*manas-ī* (3)	***manāṃs-i*** (4)
	instr.	*manas-ā* (2)	*mano-bhyām* (2, 5)	*mano-bhis* (2, 5)
	dat.	*manas-ê* (2)	*mano-bhyām* (2, 5)	*mano-bhyas* (2, 5)
	abl.	*manas-as* (2)	*mano-bhyām* (2, 5)	*mano-bhyas* (2, 5)
	gen.	*manas-as* (2)	*manas-ôs* (2)	*manas-ām* (2)
	loc.	*manas-i* (2)	*manas-ôs* (2)	*manas-su/manaḥ-su* (2, 6)

1. The stem *manas* serves as NVA singular.
2. Building on the stem, many forms follow the *marut* pattern (p. 230).
3. Expected long *ī* in n. dual NVA
4. NVA pl. is difficult, but partly explainable by sound law ***Ns*** and by analogy with other n. pl. NVA forms like *karm-āṇ-i, gant-ṝṇ-i, tapas-vīn-i, phal-ā-ni, madh-ūn-i,* and *vid-vāṃs-i*, all of them with long vowel followed by nasal plus *i*. See also the analogical "nasal infix" on p. 242.
5. **CpL*z***, 1. line
6. Two sandhi variants.

With *su* prefixed, one obtains the bahuvrīhi *su-manas* ("good-hearted man/woman"). Most endings are the same, but some exhibit male/female, rather than neuter endings:

su-manas m./f.	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* (2, 3)	*su-mano-bhyām* (2, 3)	*su-mano-bhis* (2, 3)

1. Nom. sg. *su-manās* is from u.at. *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 the *manas* paradigm.

Now, turn to *havis*.

havis n.	case	sg.	dual	pl.
	nom.	*haviṣ* (1)	*haviṣ-ī* (3)	***havīṃṣ-i*** (4)
	voc.	*havis* (1)	*haviṣ-ī* (3)	***havīṃṣ-i*** (4)
	acc.	*havis* (1)	*haviṣ-ī* (3)	***havīṃṣ-i*** (4)
	instr.	*haviṣ-ā* (2)	*havir-bhyām* (2, 5)	*havir-bhis* (2, 5)
	dat.	*haviṣ-ê* (2)	*havir-bhyām* (2, 5)	*havir-bhyas* (2, 5)
	abl.	*haviṣ-as* (2)	*havir-bhyām* (2, 5)	*havir-bhyas* (2, 5)
	gen.	*haviṣ-as* (2)	*haviṣ-ôs* (2)	*haviṣ-ām* (2)
	loc.	*haviṣ-i* (2)	*haviṣ-ôs* (2)	*haviṣ-ṣu/haviḥ-su* (2, 6)

1. The stem *havis* serves as sg. NVA.
2. Building on the stem, many forms follow the *marut* pattern (p. 230). **RUKI**.
3. Expected long *ī* in n. dual NVA. **RUKI**.
4. NVA pl. is difficult, but partly explainable by sound law ***Ns*** and by analogy with other n. pl. NVA forms like *karm-āṇ-i, gant-ṝṇ-i, tapas-vīn-i, phal-ā-ni, madh-ūn-i, manāṃs-i*, and *vid-vāṃs-i*, all of them with long vowel followed by nasal plus *i*. **RUKI** despite of intervening *ṃ*. See also the analogical "nasal infix" on p. 242.
5. **Vis** or **CpL*z*** (2. line): compare *gatis nāsti* → *gatir nāsti*
6. Two sandhi variants, the first with forward assimilation

Consider, finally, *āyus,* where most forms follow the *havis* pattern above. The numbers are also from that pattern.

āyus n.	case	sg.	dual	pl.
	nom.	*āyus* (1)	*āyuṣ-ī* (3)	***āyūṃṣ-i*** (4)
	voc.	*āyus* (1)	*āyuṣ-ī* (3)	***āyūṃṣ-i*** (4)
	acc.	*āyus* (1)	*āyuṣ-ī* (3)	***āyūṃṣ-i*** (4)
	instr.	*āyuṣ-ā* (2)	*āyur-bhyām* (2, 5)	*āyur-bhis* (2, 5)
	dat.	*āyuṣ-ê* (2)	*āyur-bhyām* (2, 5)	*āyur-bhyas* (2, 5)
	abl.	*āyuṣ-as* (2)	*āyur-bhyām* (2, 5)	*āyur-bhyas* (2, 5)
	gen.	*āyuṣ-as* (2)	*āyuṣ-ôs* (2)	*āyuṣ-ām* (2)
	loc.	*āyuṣ-i* (2)	*āyuṣ-ôs* (2)	*āyuṣ-ṣu/āyuḥ-su* (2, 6)

E.3.4. Stems in *mant, vant, ant,* and *ans*

bala-vant etc.

Stems in *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-vant m.	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.,

   **bala-vant-s* → OI **bala-vānt* (**CpL*s***) → OI *bala-vān* (**CCl**)

2. Forms like *bala-vant-as* are regular strong forms.
3. The sg. voc. *bala-van* is the full-grade stem, simplified by **CCl**.
4. *bala-vad-bhis* exhibits backward assimilation.

The neuter 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***

bala-vant n.	case	sg.	dual	pl.
	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. = *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. Consider 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 the sound law **CpL*s*** on pp. 53). **CCl**.

2. Voc. sg. m. *mah-an* is regular: stem together with **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. Alternatively, the second regular long *ā* in *rāj-ān-as* may have provided a motivation.

The migration of *ā* just mentioned also holds for the neuter paradigm:

mah-ant 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 onward like masculine		

Note f. sg. nom. *mahat-ī* (like n. dual NVA).

Present participles, general remarks

The strong form of any present participle (pres.P) can be found by looking at the 3. person pl. present indicative:

			pres.P, m. nom.	
class	√	3. pers. pl. pres. ind.	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)

bhar-ant m.	case	sg.	dual	pl.
	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*).
2. Forms like *bhar-ant-as* are regular strong forms.
3. The sg. voc. *bhar-an* is the full-grade stem, simplified by **CCl**.
4. **BA**

Turn now to the neuter paradigm. Dual NVA are sometimes in the strong form although they should be weak according to the distribution indicated in figure E.1, p. 222:

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, observe

$$\text{f. sg. nom.} \quad = \quad \text{n. dual NVA} \quad = \quad \textit{bhar-ant-}\bar{\imath}$$

Present participles with *bala-vant* formation

Two interesting pres.P 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.P of *bhū* ("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.

A summary of the present-participle declension may be helpful:

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 *bhav-ān* which follows *bala-vān.*

2. The neuter forms tend to exhibit strong forms in dual NVA in the classes 1, 4, and 10, against figure E.1, p. 222. However, the regular weak dual NVA
   - ◇ is always seen in *ja-g-at-ī* from *jagat* n. ("world") and
   - ◇ is typically present in the athematic verbal classes 2, 3, 5, 7, 8, and 9
   - ◇ and sometimes occurs in pres.P of the 6. class, where one finds
     - weak *tudatī bālâu* ("the two hitting boys") beside
     - strong *tudantī bālâu.*

3. Feminine forms are derivable from neuter dual ones:

   f. sg. nom. = n. dual NVA

   as in

stem	category	nom. sg. m.	NVA 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.P	***bhar-an***	***bhar-ant-ī***	***bhar-ant-ī***
bhav-ant	pres.P	***bhav-an***	***bhav-ant-ī***	***bhav-ant-ī***
bhav-ant	honorific pronoun	***bhav-ān***	*bhav-at-ī*	*bhav-at-ī*

   The feminine declensions like *bala-vat-ī* or *bhav-at-ī* exactly follow *nad-ī* (pp. 256).

Analogical "nasal infix" in neuter plural NVA

Remember the n. pl. forms for NVA such as these

stem	category	nom. sg. m.	NVA pl. n.
bala-vant	*vant*-adjective	***bala-vān***	***bala-vant-i***
mati-mant	*mant*-adjective	***mati-mān***	***mati-mant-i***
bhar-ant	pres.P	***bhar-an***	***bhar-ant-i***

In the last column, *n* appears because of the full grade. However, to the speakers of Sanskrit this *n* seemed to signal NVA pl. n. in general. Using the analogy

bala-vat	= nom. sg. with NVA pl. n.:	*bala-vant-i*
just as		
manas	= nom. sg. with NVA pl. n.:	*manā**ṃ**s-i*

one obtains NVA pl. n. forms like

stem	nom. sg. n.	NVA pl. n.
asṛj	*asṛk* (**AFP**)	*asṛ**ñ**j-i*
āyus	*āyus*	*āyū**ṃ**ṣ-i* (**RUKI**)
havis	*havis*	*havī**ṃ**ṣ-i* (**RUKI**)

Similar to forms like *karm-āṇ-i, gant-ī́ṇ-i, tapas-vīn-i, phal-ā-ni, madh-ūn-i,* and *vid-vāṃs-i*, we witness long vowel here (see again figure E.1), except for *asṛ**ñ**j-i*. See the above patterns of *manas*, *havis*, and *āyus*.

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* (3, 4)	*kṣôd-īyô-bhis* (3, 4)
	dat.	*kṣôd-īyas-ê* (3)	*kṣôd-īyô-bhyām* (3, 4)	*kṣôd-īyô-bhyas* (3, 4)
	abl.	*kṣôd-īyas-as* (3)	*kṣôd-īyô-bhyām* (3, 4)	*kṣôd-īyô-bhyas* (3, 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* + CCl**, here from **kṣôd-īyans-s* with nom. sg. marker *s*.

2. Like in *mah-ant*, note migration of long *ā* from nom. sg. to all the other strong forms except for voc. sg. which is explained by the formula "stem + **CCl**". ***Ns***.

3. Weak forms like *kṣôd-īyas-ā* exhibit loss of vowel and expected **SY__*N***.

4. In weak forms like *kṣôd-īyô-bhis*, see expected **CpL*z*** (1. line) of *yas* before voiced consonant *bh*.

The neuter 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.

Now turn to the difficult forms of 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, 5)

1. *ca-kṛ-vān* builds on *ca-kṛ-vans-s* (with *n*) and **CpL*s* + CCl**.

2. As in *mah-ant* and *kṣôd-īyans*, 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* + **CCl**". ***Ns***.

3. Weak forms like *ca-kr-uṣ-ā* build on *cakṛvas* (without *n*), where the loss of vowel *a* forces *v* to become vocalic (***SV***).

4. Perhaps, forms like *ca-kṛ-vad-bhis* are best explained by analogy with forms like *bala-vad-bhis* or *bhav-ad-bhis*. And similarly *ca-kṛ-vat-su*.

5. One may surmise that *ca-kṛ-vat-su* is regular from *ca-kṛ-vas-su* by the sound law **SIB** (which produces *vat-sy-a-ti* from u.at. *vas-sy-ati*). And then, the cases explained in 4 are analogous from loc. pl.? However, this explanation does not seem valid in view of *manas-su* (p. 235).

The neuter 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.

Often, *vidva(n)s* ("learned person") is considered reduplicated perfect active, too, although there is no reduplication. This is also true for the 3. sg. perf. *vêda* (see p. 384).

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*** + **CCl**.

2. As in *mah-ant*, *kṣôd-īyans*, and *ca-kṛ-va(n)s*, 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* + **CCl**". ***Ns***.

3. Weak forms like *vid-uṣ-ā* build on *vid-vas* (without *n*), where the loss of vowel *a* forces *v* to become vocalic (***SV***).

4. Similar to forms like *ca-kṛ-vad-bhis*, one might explain forms like *vid-vad-bhis* and *vid-vat-su* by analogy (see *bhar-ad-bhis* or *mah-at-su*).

The neuter 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.

E.3.5. *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***. I summarise under the heading **CpL__*an-in-tar*** (see p. 54).

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 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*** (see *rāj-an*)

2. Nom. sg. *śv-ā* corresponds to *rāj-ā*. See **CpL__*an-in-tar*** on p. 54.

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 *u* for semivowel *v* before consonant *n* (***SV***).

5. By **SY__*N*** and **SY__Conf** one obtains weak forms like *śv-a-bhis,* but not u.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*** (see *rāj-an*)
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 (semi)vowel before consonant *n* (**VS** 1. line).
5. By **SY_*N*** and **SY_Conf** (see 29) one obtains weak forms like *yuv-a-bhis (*rather than u.at. *ivunbhis).*

The n. (!) noun *nām-an* ("name") can be explained similarly. Consider

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 IE $^*nom\text{-}\underset{\circ}{n}$.

2. *nām-a* is regular by the rule that NVA neuter are the same (with the exception of voc. sg. *phala* etc.), within sg., within dual, and within pl. In contrast, the voc. sg. alternative *nām-an* equals 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 *karm-an* ("action"), see below.

3. **Lo** (see *rāj-an*)

4. Before vowel endings, observe *n* as the weak suffix. The dual forms NVA are formed with the marker *ī* known from the consonantal paradigms.

5. Observe forms like *nām-a-bhis* that result from **SY__*N***.

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)	*ātm-an-ām* (4)
	loc.	*ātm-an-i* (4)	*ātm-an-ôs* (4)	*ātm-a-su* (5)

1. **Lo** (see *rāj-an*)

2. Nom. sg. *ātm-ā* is difficult, as is *rāj-ā*. See **CpL__*an-in-tar*** on p. 54.

3. Again, the strong form voc. sg. *ātm-an* equals the stem.

4. One might expect instr. sg. u.at. *ātm-n-ā*. However, *m* would become syllabic and u.at. *āta-n-ā* would have been the final result. In order to prevent this outcome, the suffix *an* is used.

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, observe alternative forms for voc. sg. The second one *karm-an* equals the stem as in the masculine paradigm.
3. **L*o*** (see *rāj-an*)
4. Before vowel endings, one would expect *n* as the weak suffix, for example instr. sg. u.at. *karm-n-ā.* However, *kara-ṇ-ā* could not have survived for long (compare *ātm-an-ā*) and would easily have been confused with *kar-aṇa-m* (pp. 105).
5. Observe forms like *karm-a-bhis* that result from **SY__*N*** and **SY__Conf.**

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*	*yôg-in-âu* (1)	*yôg-in-as*
	acc.	*yôg-in-am*	*yôg-in-âu* (1)	*yôg-in-as* (1)
	instr.	*yôg-in-ā*	*yôg-i-bhyām* (3)	*yôg-i-bhis* (3)
	dat.	*yôg-in-ê*	*yôg-i-bhyām* (3)	*yôg-i-bhyas* (3)
	abl.	*yôg-in-as*	*yôg-i-bhyām* (3)	*yôg-i-bhyas* (3)
	gen.	*yôg-in-as*	*yôg-in-ôs*	*yôg-in-ām*
	loc.	*yôg-in-i*	*yôg-in-ôs*	*yôg-i-ṣu* (3, 4)

1. 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* with loss of final *n*. See **CpL__*an-in-tar*** on p. 54.

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**

Some *in* stems are built on neuter *as* stems (p. 106), such as *tapas* ("heat"). However, the stem is *tapas-vin*, not *tapas-in*. Indeed, *tapas-in* would lead to confusing forms:

u.at. n. nom. sg. *tapas-i* ← u.at. *tapas-in*
loc. sg. *tapas-i* ← *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. Apart from the suffix *vin* instead of *in*, the masculine paradigm is the same as in *yôg-in* above. See the neuter *vin* paradigm for *tapas-vin*:

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. Note nom. sg. neuter *tapas-vi* versus nom. sg. masculine *tapas-vī*.

2. Again, observe 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*. Note that the 1. line of **CpL*z*** is not applied. It would have produced *tapô-vi-bhis* like *manô-bhis* and, indeed, throughout the paradigm (*tapô-vin-ā* etc.).

6. **RUKI**

E.3.6. Agent and kinship nouns like *nê-tar* and *pitar*

tar stems (*nê-tar*, *kar-tar*)

Now turn to hybrid nouns (p. 223), the (usually called) *ṛ* stems that I prefer to call *tar* 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*.

◇ The strong forms exhibit this suffix *tar*. 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, see *tr* before vowels or *tṛ* before consonants.

First consider 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-t-us* (4, 10)	*nê-tṛ-bhyām* (5)	*nê-tṛ-bhyas* (5)
	gen.	*nê-t-us* (4, 10)	*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, in line with **CpL__*an-in-tar***, the *r* is dropped after the long *ā* (similarly, observe *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, for example instr. sg. *nê-tr-ā*.

5. Before a consonant-initial ending, one obtains forms like *nê-tṛ-bhis*.

6. The vocalic IE acc. pl. marker *ns* is cerebralised after *r*-sounds, but not in a word-final position (see **Cer*n***). Syllabic *r̥̄* is long by **CpL*s*** or by analogy with forms like *dêv-ān*. See pp. 221.

7. *nê-tr̥̄-ṇām* has long *r̥̄* because the vocalic 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 **Lo*o***. Maybe, analogy is to blame, for example,

marut	with voc. sg.:	*marut-i*
just as		
nê-tar	with voc. sg.:	*nê-tar-i*

10. The ending *us* in abl. and gen. sg. *nê-t-us* seems to go back to *r̥s*, (see MI sound laws on pp. 59).

Be careful: *bhar-tar* ("husband") is best understood as agent nouns, and not as kinship nouns (see next subsection). Finally, two comments on the other two genders:

◇ Feminine agent nouns are formed with long *ī*, for example *nê-trī* ("woman leader"). They are declinated like *nad-ī* ("river"), see pp. 256.

◇ Neuter agent nouns are often used as neuter adjectives. They are treated on pp. 265.

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)

pit-ar m.	case	sg.	dual	pl.
	acc.	***pit-ar-am*** (1)	***pit-ar-âu*** (1)	*pit-r̥-n* (6)
	instr.	*pit-r-ā* (4)	*pit-r̥-bhyām* (5)	*pit-r̥-bhis* (5)
	dat.	*pit-r-ê* (4)	*pit-r̥-bhyām* (5)	*pit-r̥-bhyas* (5)
	abl.	*pit-us* (10)	*pit-r̥-bhyām* (5)	*pit-r̥-bhyas* (5)
	gen.	*pit-us* (10)	*pit-r-ôs* (4)	*pit-r̥̄-ṇām* (7)
	loc.	*pit-ar-i* (9)	*pit-r-ôs* (4)	*pit-r̥-s̥u* (5, 8)

1. In contrast to agent nouns, the suffix does not contain IE *o* so that Brugmann's law **L*o*** is not applied.
2. Nom. sg. *pit-ā* may be due to **CpL*s***: *er-s* → *ēr* → *ār*. Again, consult **CpL__*an-in-tar*** on p. 54.
3. As usual, voc. sg. *pit-ar* equals the stem.
4. The weak forms before vowel-initial endings build on the zero-grade suffix as in instr. sg. *pit-r-ā*.
5. Before a consonant-initial ending, one obtains forms like *pit-r̥-bhis* (pp. 20).
6. The vocalic IE acc. pl. marker *ns* is cerebralised after *r*-sounds, but not in a word-final position (see **Cer*n***). Syllabic *r̥̄* is long by **CpL*s*** or by analogy with forms like *dêv-ān*. See pp. 221.
7. *pit-r̥̄-ṇām* has long *r̥̄* because the vocalic 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* seems to go back to *r̥̊s*, (see MI sound laws on pp. 59).

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-r̥̄-s* (!)

māt-ar f.	case	sg.	dual	pl.
	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 *pit-ar* ("father"), the only difference in feminine *māt-ar* ("mother") concerns the acc. pl. *māt-ṝ-s*. Compare

	vocalic *a* declension	hybrid declension
masculine	*dêv-ā-n*	*pit-ṝ-n*
feminine	*dêv-ā-s*	*māt-ṝ-s*

Finally, *svas-ar* f. ("the female own one, sister") is declined as masculine *nê-tar* with the notable exception of acc. pl. *svas-ṝ-s*. Or, inversely, *svas-ar* follows *māt-ar*, but has *ār* (not *ar*) in the strong forms acc. sg. *svas-ār-am* through voc. pl. *svas-ār-as*.

E.3.7. Stems in diphthongs

In this secion, stems in short and long diphthongs are covered. They are consonantal, but do not reflect any IE weak-strong alternation. First, short-diphthong *gô* m./f. ("cow") is dealt with. Its pattern is very difficult:

gô m./f.	case	sg.	dual	pl.
	nom.	*gâu-s* (2)	*gāv-âu* (2)	*gāv-as* (2)
	voc.	*gâu-s* (2)	*gāv-âu* (2)	*gāv-as* (2)
	acc.	*gām* (1)	*gāv-âu* (2)	*gās* (1)
	instr.	*gav-ā* (3)	*gô-bhyām* (3)	*gô-bhis* (3)
	dat.	*gav-ê* (3)	*gô-bhyām* (3)	*gô-bhyas* (3)
	abl.	*gôs* (4)	*gô-bhyām* (3)	*gô-bhyas* (3)
	gen.	*gôs* (4)	*gav-ôs* (3)	*gav-ām* (3)
	loc.	*gav-i* (3)	*gav-ôs* (3)	*gô-ṣu* (3, 5)

1. OI *gô* goes back to IE $*g^wou/*g^wov$. It is surmised that

a) acc. sg. *gām* ← IE $^*g^w ovm$ and

b) acc. pl. *gās* ← IE $^*g^w ovms$

involve compensatory lengthening after the drop of *v*.

2. These long *ā* in the accusatives spread to nom. and voc. forms in the singular and plural and, furthermore, to the dual NVA forms.

3. Sound law **DIPH** can account for *av* before vowels and *ô* before consonants.

4. Difficult

5. **RUKI**

Turn now to long-diphthong stems like *râi* m./f. ("wealth") and *glâu* m. ("moon"). Beginning with the *âu* nouns, consider

glâu 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 *glâu* pattern is also followed by *nâu* f. ("boat"). Turning to the *âi* stem, consider the paradigm

râi 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 u.at. *râi-bhis* rather than *rā-bhis*.
3. Nom. sg. marker *s* is clearly observable
4. Voc. sg. irregularly differs from the stem.

E.3.8. Feminine *ī* and *ū* stems

nadī and *vadhū*

There exist two feminine 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 can be used for many f. *ī*-nouns, such as *bala-vat-ī* or *bhar-a-nt-ī*. For m. nouns, consider *sênā-nīs* m. ("army general") s.v. *nī* ("to lead"). The numbers in the *nadī* paradigm are the same as in 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 feminine 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*, observe the usual nom. sg. marker *s* in *vadhūs*. (Irregularly, marker *s* shows in nom. sg. *lakṣmīs*.)
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, ***SV*** leads to forms like *nad-y-ā* or *vadh-v-ā*.
5. Instr. sg. ending *ā* as usual for m. and f. consonantal declensions.
6. These two paradigms consistently use vocalic feminine endings in line with this table:

	singular			plural	
	dative	abl./gen.	locative	acc.	gen.
voc. f. nouns	*âi*	*ās*	*ām*	$\bar{V}s$	$\bar{V}nām \leftarrow {}^*VHnōm$

7. **RUKI**

dhī and *bhū*

Apart from *nadī* and *vadhū*, there exist monosyllabic stems in long *ī* and long *ū*, respectively. They 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, 5)
	instr.	*dh-iy-ā* (4)	*dh-ī-bhyām* (1)	*dh-ī-bhis* (1, 7)
	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, 6)

The numbers are explained below the *bhū* paradigm. The same pattern is followed by the feminine nouns

◇ *bh-ī* (“fear”)

◇ *śr-ī* (“wealth”)

◇ *hr-ī* (“shame”)

In a parallel fashion (replace *ī/i/y* by *ū/u/v*), observe *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 marker *s*.
3. The voc. sg. is not formed from the stem but equals the nom. sg.
4. Before vowel-initial endings, ***V+SV*** (pp. 23) leads to forms like *dh-iy-ā* or *bh-uv-ā*. Observe the variants in both the *dhī* and the *bhū* pardigms.
5. Consider this table for feminine endings of both consonantal and vocalic nouns:

	singular			plural	
	dative	abl./gen.	locative	acc.	gen.
cons. nouns	*ê*	*as*	*i*	*as*	*ām*
voc. nouns	*âi*	*ās*	*ām*	*V̄s*	*V̄nām* ← * *VHnōm* (**Lar_ *V***)

   Both *dhī* and *bhū* show the vocalic (*nadī*) endings except for acc. pl., where the consonantal ending prevails.
6. **RUKI**
7. *dh-ī-bhis* and *bh-ū-bhis* are peculiar in not reflecting **DA**. Perhaps, Grassmann's law was not operative any more when these forms were built. Levelling might also have come into play.

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*	*str-ī-ṣu*

After taking ***V+SV*** into account, the only difference to the *nadī* paradigm concerns the accusatives. The first one is consonantal, the second one is vocalic.

Finally, turn to *punar-bh-ū* f. ("remarried widow"), which belongs to *bhū* ("to be"). This noun does not apply ***V+SV*** by replacing *ū* by *uv* before vowel endings. Instead, one observes 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 the consonantal forms are *punar-bh-v-a-m* and *punar-bh-v-as*, similar to the first alternatives in the *str-ī* paradigm.

Related masculine compounds

There exist two compounds related with *dhī* ("intellect") and *bhū* ("earth"). Both are masculine:

◇ *su-dhī* ("intelligent") and

◇ *prati-bhū* ("guarantor")

Being masculine, they employ the first alternative in 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*

prati-bhū m.	case	sg.	dual	pl.
	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*

E.3.9. *i* and *u* stems

i stems (*mun-i*, *mat-i*)

Consider *i* stems, for example

◇ m. *muni*

◇ f. *mati*

◇ n. *vāri*

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 f.	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. From the sound law ***SV***, *i* before consonant versus *y* before vowel is expected.

2. Some forms are "strong" in the sense of having the strong declension signs in line with **DIPH**:

   a) *ê* before consonants or in word-final position (voc. sg.) and

   b) *ay* before vowels.

   The distribution of these "strong" forms has nothing to do with the strong forms in the sense of figure E.1, p. 222.

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. The ending *âu* occurs as the or as a loc. sg. It is not used in the dual forms NVA. There, observe the long thematic vowel instead, as in *mun-ī* or *mat-ī*. Compare dual NVA *jagatī* and *vanê* ← *vana-ī* (**VS**, 2. line).

6. Instr. sg. m. *mun-i-n-ā* exhibits additional *n*, presumably modelled on *in* stems, for example *yôg-in-ā*.

7. Compare acc. pl.

   ◇ *mun-ī-n* m. versus *mat-ī-s* f. with

   ◇ *dêv-ā-n* m. versus *sên-ā-s* f.

   Revisit subsection E.1.2, p. 221.

8. Gen. pl. are vocalic as might be expected. The long vowels are explained by the laryngeal in the IE ending *Hnōm.*

9. **RUKI**

10. The f. paradigm alternatively allows the vocalic *nadī* endings in dative through locative singular.

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. 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. 253)
   ◇ *tar* nouns like *nê-t-us* (pp. 251)
   where (as a MI development) the *ṛ* is replaced by *u* after labials (pp. 59).

4. Loc. sg.
   ◇ *pat-y-âu* still exhibits the semivowel *y*, 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 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 f.	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. ***SV***

2. **DIPH**, but strong declension signs unrelated to figure E.1, p. 222.
3. Familiar endings: instr. sg. *ā*, dat. sg. *ê* and 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. The ending *âu* occurs as the or as a loc. sg. It is not used in the dual forms NVA. There, observe the long thematic vowel instead: *gur-ū* or *dhên-ū*.
6. Instr. sg. m. *gur-u-ṇ-ā* exhibits additional *n*, presumably modelled on *in* stems, for example *yôg-in-ā*. It is parallel to *mun-i-n-ā*.
7. Compare acc. pl.
   - ◇ *gur-ū-n* m. versus *dhên-ū-s* f. with
   - ◇ *mun-ī-n* m. versus *mat-ī-s* f. and with
   - ◇ *dêv-ā-n* m. versus *sên-ā-s* f.
8. Gen. pl. are vocalic as might be expected. The long vowels are explained by the laryngeal in the IE ending *Hnōm*.
9. **RUKI**
10. Vocalic *nadī* and *vadhū* endings in dative through locative singular as alternatives
11. **Cer*n***

Neuter *i(n)*, *u(n)*, or *ṛ(ṇ)* stems

The neuter *u* stems like *madh-u* ("honey") have been strongly influenced by neuter *(v)in* stems like *tapas-vin* (p. 250). 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. 249).

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 m. 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*.

   where 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 are 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. 250).
6. The long vowel *ū* is easily explained by the laryngeal in the IE ending *Hnōm*.
7. **RUKI**

Neuter *i* stems like *vār-i* (“water”) or the adjective *śuc-i* are formed in the same manner. Similarly, one may introduce neuter agent nouns at this junction because their declension resembles neuter *madh-u* or *vār-i* very closely. Apply the copy-paste operations

- ◇ *u* by *i* (for *vār-i*) or by *ṛ* (for *gant-ṛ*),
- ◇ *un* by *in* or by *ṛṇ* and,
- ◇ *ūn* by *īn* or by *ṝṇ*

and refer to the numbers above. Observing **Cer*n*** after *r* yields

vār-i/*vār-in* n.	case	sg.	dual	pl.
	nom.	*vār-i* (1)	*vār-iṇ-ī* (2, 4)	*vār-īṇ-i* (4)
	voc.	*vār-i*/*ê* (1, 3)	*vār-iṇ-ī* (2, 4)	*vār-īṇ-i* (4)
	acc.	*vār-i* (1)	*vār-iṇ-ī* (2, 4)	*vār-īṇ-i* (4)
	instr.	*vār-iṇ-ā* (2)	*vār-i-bhyām* (5)	*vār-i-bhis* (5)
	dat.	*vār-iṇ-ê* (2)	*vār-i-bhyām* (5)	*vār-i-bhyas* (5)
	abl.	*vār-iṇ-as* (2)	*vār-i-bhyām* (5)	*vār-i-bhyas* (5)
	gen.	*vār-iṇ-as* (2)	*vār-iṇ-ôs* (2)	*vār-ī-ṇām* (6)
	loc.	*vār-iṇ-i* (2)	*vār-iṇ-ôs* (2)	*vār-i-ṣu* (7)

on the one hand and

gant-ṛ/gant-ṛṇ n.	case	sg.	dual	pl.
	nom.	*gant-ṛ* (1)	*gant-ṛṇ-ī* (2, 4)	*gant-ṝṇ-i* (4)
	voc.	*gant-ṛ/ar* (1, 3)	*gant-ṛṇ-ī* (2, 4)	*gant-ṝṇ-i* (4)
	acc.	*gant-ṛ* (1)	*gant-ṛṇ-ī* (2, 4)	*gant-ṝṇ-i* (4)
	instr.	*gant-ṛṇ-ā* (2)	*gant-ṛ-bhyām* (5)	*gant-ṛ-bhis* (5)
	dat.	*gant-ṛṇ-ê* (2)	*gant-ṛ-bhyām* (5)	*gant-ṛ-bhyas* (5)
	abl.	*gant-ṛṇ-as* (2)	*gant-ṛ-bhyām* (5)	*gant-ṛ-bhyas* (5)
	gen.	*gant-ṛṇ-as* (2)	*gant-ṛṇ-ôs* (2)	*gant-ṝ-ṇām* (6)
	loc.	*gant-ṛṇ-i* (2)	*gant-ṛṇ-ôs* (2)	*gant-ṛ-ṣu* (7)

on the other hand. In particular, the voc. singulars also fit. Taking the declension signs without the nasal, compare

	z.g. of declension sign	f.g. of declension sign
madh-u	*madh-u*	*madh-ô*
gant-ṛ	*gant-ṛ*	*gant-ar*
vār-i	*vār-i*	*vār-ê*

E.3.10. *a* and *ā* stems

Finally, turn to the most common paradigms. For the *a* stems, compare

dêva m.	case	sg.	dual	pl.
	nom.	*dêv-a-s* (1)	*dêv-âu* (6a)	*dêv-ā-s* (9a)
	voc.	*dêv-a* (2)	*dêv-âu* (6a)	*dêv-ā-s* (9a)
	acc.	*dêv-a-m* (3)	*dêv-âu* (6a)	*dêv-ā-n* (9a)
	instr.	*dêv-êna* (4)	*dêv-ā-bhyām* (7)	*dêv-âis* (10)
	dat.	*dêv-āya*	*dêv-ā-bhyām* (7)	*dêv-ê-bhyas* (11)
	abl.	*dêv-āt* (4)	*dêv-ā-bhyām* (7)	*dêv-ê-bhyas* (11)
	gen.	*dêv-a-sya* (4)	*dêv-ay-ôs* (8)	*dêv-ā-nām* (12)
	loc.	*dêv-ê* (5)	*dêv-ay-ôs* (8)	*dêv-ê-ṣu* (13)

with

phalam n.	case	sg.	dual	pl.
	nom.	*phal-a-m* (1)	*phal-ê* (6b)	*phal-ā-ni* (9b)
	voc.	*phala* (2)	*phal-ê* (6b)	*phal-ā-ni* (9b)
	acc.	*phal-a-m* (3)	*phal-ê* (6b)	*phal-ā-ni* (9b)
	instr.	*phala-êna* (4)	*phal-ā-bhyām* (7)	*phal-âis* (10)
	dat.	*phal-āya*	*phal-ā-bhyām* (7)	*phal-ê-bhyas* (11)
	abl.	*phal-āt* (4)	*phal-ā-bhyām* (7)	*phal-ê-bhyas* (11)
	gen.	*phal-a-sya* (4)	*phal-ay-ôs* (8)	*phal-ā-nām* (12)
	loc.	*phal-ê* (5)	*phal-ay-ôs* (8)	*phal-ê-ṣu* (13)

1. The nom. sg. marker is *s* for masculine forms and, singularly, *m* for neuter forms. The *s* is quite common for masculine **and** feminine, as in m. u.at. *su-manas-s* → *su-manās* and u.at. *marut-s* → *marut*, in f. *vadh-ū-s* and in the m. and f. nouns mentioned on pp. 261. *m* as a marker for nom. sg. neuter nouns can be explained by pointing to the acc. sg. which has to be identical. See 3.

2. The vocative is just the stem. Thus, neuter nom. sg. differs from voc. sg. Compare *gur-ô* and *mat-ê,* where the stem shows the strong declension sign.

3. Acc. sg. regularly shows *m* in most declensions (see *marut-am, bala-vant-am*).

4. From *tad*, compare *t-êna*, *tasm-āt*, and *t-a-sya*.

5. Locative sg. with marker *i* (here *ê* ← *a-i*) is quite common, see pp. 225.

6. Dual NVA differ between m. and n.:
   a) In masculine *a* stems, observe *âu* as, for example, in m. *nê-tār-âu, pit-ar-âu, bhar-ant-âu*, *yôg-in-âu,* and *rāj-ān-ân-âu* and in f. *nad-y-âu*. From *tad*, see also m. *t-âu.*
   b) In neuter *a* stems, note *ê* from thematic vowel *a* together with IE dual ending *ī*. The latter is quite common for dual NVA. See m. *pat-ī* and *mun-ī*, f. *mat-ī* and n. *karm-aṇ-ī, gant-ṛṇ-ī*, *jagat-ī*, *tapas-vin-ī,* and *madh-un-ī*. From *tad*, see also *t-ê* ← *t-aī*.

7. *bhyām* as in all declensions, but here with unexpected long *ā* before that marker

8. *ôs* as in all declensions, but here with *ay* before that marker, perhaps in order to prevent *a-ôs*

9. Turning to the plural forms,
   a) consult pp. 228 for masculine NVA,
   b) remember that neuter NVA are identical. *phal-ā-ni* with long vowel followed by nasal plus *i* is similar to forms like *karm-āṇ-i, gant-ṝṇ-i, tapas-vīn-i, madh-ūn-i, manāṃs-i*, and *vid-vāṃs-i*.
10. From *tad*, compare *t-âis*.
11. *bhyas* as in all declensions, but here with curious *ê* before that marker
12. *ām* as in all declensions, but here the vocalic variant *V̄n-ām*
13. *su* as in all declensions, but here with curious *ê* (perhaps from the here-and-now particle *i* joined to thematic *a*?) before that marker. **RUKI**

For the feminine *sênā*, consider the paradigm

sênā f.	case	sg.	dual	pl.
	nom.	*sên-ā* (1)	*sên-ê* (6)	*sên-ā-s* (9)
	voc.	*sên-ê* (2)	*sên-ê* (6)	*sên-ā-s* (9)
	acc.	*sên-ā-m* (3)	*sên-ê* (6)	*sên-ā-s* (9)
	instr.	*sên-ayā* (4)	*sên-ā-bhyām* (7)	*sên-ā-bhis* (10)
	dat.	*sên-ā-yâi* (5)	*sên-ā-bhyām* (7)	*sên-ā-bhyas* (11)
	abl.	*sên-ā-yās* (5)	*sên-ā-bhyām* (7)	*sên-ā-bhyas* (11)
	gen.	*sên-ā-yās* (5)	*sên-ay-ôs* (8)	*sên-ā-nām* (12)
	loc.	*sên-ā-yām* (5)	*sên-ay-ôs* (8)	*sên-ā-su* (13)

1. The nom. sg. marker is *s* for masculine and feminine nouns, but observe the exception of long *ā*.
2. Difficult vocative form, perhaps modelled on forms like *mat-ê*.
3. *m* is the acc. sg. marker not just for masculine, but also for feminine nouns.
4. From *tad*, compare *t-ayā*. Note unexpected short *a* before *y*.
5. Compare the corresponding forms of f. *nadī*: *nad-y-âi*, *nad-y-âs*, and *nad-y-ām*, respectively.
6. As in neuter *a* stems, note *ê* from thematic vowel *a* together with IE dual ending *ī*. Compare f. *mat-ī*.

7. *bhyām* as in all declensions, here with expected long *ā* before that marker
8. *ôs* as in all declensions, but here with unexpected *ay* before that marker, perhaps in order to prevent *a-ôs*
9. Turning to the plural forms, observe the NVA endings *ā-s.*
10. From *tad*, compare *t-ā-bhis.* The ending *bhis* is very common for instr. pl. across all other declensions, except for short *a* declensions masculine and neuter such as the *dêva, phalam*, or *tad* pradigms above.
11. *bhyas* as in all declensions, but here with expected long *ā* before that marker
12. *ām* as in all declensions, but here the vocalic variant *V̄n-ām* (but the long *ā* is already present in the stem)
13. *su* as in all declensions, but here with expected long *ā* before that marker

E.4. Adverbs from fossilised case endings

E.4.1. Accusative

Many adverbs stem from fossilised case endings. Consider, first, adverbs based on the accusative.

- ◇ *a-vaśya-m* (“not to be wished, not to be controllable → necessarily, indeed”) ← *a* + *ya*-gerundive of *vaś* (“to wish”)
- ◇ *ī-ṣ-at* (“being in that manner → a bit, somewhat”) ← *ī* + n. pres.P of *as* (“to be”)
- ◇ *cira-m* (“for a long time, long ago”) from *cira* (“long”)
- ◇ *taras* (“fast”) from *taras* n. (“ferry, advancement, energy”)
- ◇ *nāma* (“by name”), see the declension on p. 247
- ◇ *nir-bhara-m* (“completely”) ← *nis* + *bhara*
- ◇ *prati-dina-m* (“every day”) ← *prati* + *dinam*
- ◇ *praty-aha-m* (“every day”) ← *prati* + *ahar* (but here as if acc. from some n. *aham*, which does not exist)
- ◇ *yathākāma-m* (“according to desire, at will”) ← *yathā* + *kāma* (“desire”)
- ◇ *sādhu* (“well”), see s.v. *sidh* (“to have success, to be valid”)
- ◇ *sukha-m* (“happily”)

E.4.2. Instrumental

◇ *a-khil-êna* (“in its entirety, all in all”) ← *a* + *khila* (“wasteland, rest”)

◇ *a-cir-êṇa* (“for a short time”) ← *a* + *cira* (“long”)

◇ *ucc-ais* (“loud”) ← *ucca* (“high”)

◇ *tar-êṇa* (“fast, by force”) ← *tara* m. (“the crossing”)

◇ *cir-êṇa* (“after a long time”) from *cira* (“long”)

◇ *prāy-êṇa* (“usually, probably”) ← *pra-aya* (“quantity, a state or condition of life like youth, death”)

◇ *vi-star-êṇa* (“at length”) ← *vi-stara* (“extension, detail”, see *stṝ* in the dictionary)

◇ *sahas-ā* (“with might → forcibly, suddenly”) from *sahas* n. (“might, power”)

E.4.3. Ablative

◇ *a-cir-āt* (“for a short time”) ← *a* + *cira* (“long”)

◇ *dūr-āt* (“from afar”) ← *dūra* (“far”)

E.4.4. Locative

◇ *cir-ê* (“in a long time → finally”) ← *cira* (“long”)

◇ *dūr-ê* (“far away”) ← *dūra* (“far”)

◇ *sa-pad-i* (“immediately”) ← *sa* (“together”) + *pad* m. (“foot”)

E.4.5. *tas* suffix

The *tas* suffix is used in the ablative sense.

◇ *agra-tas* (“first, in front”) ← *agram* (“top, summit, beginning”)

◇ *grāma-tas* (“from the village”) ← *grāma* (“village”)

◇ *tvat-tas* (“from you”) ← *tvad* (“you”)

◇ *pṛṣṭha-tas* (“behind”) ← *pṛṣṭham* (“back”)

◇ *śāstra-tas* (“according to the *śāstra*s”) ← *śāstram* (“text, manual”)

◇ *sva-tas* (“with one’s own power”) ← *sva* (“own”)

E.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”)

E.4.7. *vat* suffix

Probably related to *vant* in forms like *bala-vant* (pp. 237), many nouns can take the *vat* suffix:

◇ *kapi-vat* (“like a monkey”) ← *kapi* (“monkey”)

E.4.8. *dhā* suffix

dhā can often be translated as “-fold”

◇ *dvi-dhā* (“twofold”) ← *dvi* (“two” in compounds)

◇ *bahu-dhā* (“manifold”) ← *bahu* (“many”)

F. Selective etymological dictionary

F.1. Introductory remarks

Expressions with bold letters, such as **VER** or **NHG**, point to sound laws, which are listed on pp. 14. "E *word*", "OE *word*", and "NLG *word*" refer to words based on Germanic, where the sound laws **GER** have been applied. Words marked by "E *word*" may also have undergone the sound laws **NHG_E**. Words marked by "NHG *word*" are produced by the sound laws **NHG** and possibly **GER**. I use "German *word*" for Modern German words that have not come about through applications of **NHG**. And "English *word*" refers to Modern English words without the involvement of **GER**. The expression "Lat. B English *word*" means that *word* is employed in Modern English and has been borrowed from Lat. Instead of "B English *word*" I often just write "B *word*". Similarly, "Fr. *word*" refers to words that go back Latin, while "French *word*" marks words from Modern French that are based on another language (usually OGr.). Finally, "Latin *word*" is employed for words that have migrated from Greece to Latium, while "Lat. *word*" is reserved for words that stem from IE ones via the sound laws **LAT**.

For nouns and their gender, consult section A.7 (pp. 9) on the conventions used in this book. For verbs, important forms are often recorded, usually in the following pattern:

OI root (meaning)		
present indicative	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

F.2. Vowels

F.2.1. *a*

a- negating prefix (p. 69)
before *C*: ***a-ga*** (“not going → tree”) with second part *ga* from *gam* (pp. 145)
before *V*: ***an-ā-gata*** (“not having come → future”) with last part PPP *gata* of *gam*

← IE $*\underset{\circ}{n}$ (**SY_N**), see IE $*ne$ s.v. *na*

→ OGr. B English *a*-theist, *an*-archy (just like OI before *C* or *V*, respectively)

∼ Lat. B English *in*-effective, *im*-possible

∼ E *un*-true, *un*-believable

∼ NHG *un*-gläubig (“unbelieving”)

aṃh-as n. (“fear, distress”)
aṃh-u (“straight, narrow”)

← IE root $*h_2 emǵh$

→ Lat. *ang-ere* (“to stangle, to choke”) with B English *anxious*

∼ NHG *eng* (“narrow”) ∼ NHG *Ang*-st (“fear”)

ak-ṣa (“axis, pole of a car”), see *aj*

← IE $*h_2 eǵ$-*s*

→ Lat. B English *axis*

∼ E *axle* ∼ NHG *Achse*

akṣ-i n. (“eye”), ***akṣ-an*** n. (“eye”)
an-akṣ-a (“blind”), see p. 69
an-īk-a (“face”) ← IE $*h_1 eni$-$h_3 k^w$-*o* (**Lar_V**, for first part, see E *in* ∼ NHG *in*)
īkṣ 1. class: ***īkṣ-a-tê*** (“to see”), originally a desiderative (p. 140)

← IE root $*h_3 ek^w$-*s*/$*h_3 ok^w$-*s*

→ OGr. B English *op-tics*

∼ Lat. *oc-ulus* (“eye”) with B English *oc-ular* (“lense”)

∼ E *eye* ∼ NHG *Auge* (difficult, perhaps a version of **VER**)

agn-i m. (“fire”)
aṅgāra (“coal”)

← IE $^*h_1 \underset{\circ}{n} g^w n$-*i* (“fire”)

→ Lat. *ignis*, B English to *ignite*

aṅka (“hook, curve”)

← IE **Honk-o* (“curvature”)

→ OGr. B English *onco-logy* (perhaps because swelling leads to a curved shape?)

aj 1. class: ***ajati*** (“to drive”)
aj-man n. (“path, move”)
āj-i m./f. (“race course, contest”)
sam-ā-ja (“meeting, gathering”)

← IE root $^*h_2 e\acute{g}$ (“to drive, to do”)

→ OGr. B English *dem-ag-ogue*, *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 *ac*) *ac-t*, *ac-tion*, *ac-tive*, *ac-tual*, *re-act*

See *akṣa, ajra, êj.*

ajira (“fast”) (**SY__*N***, **Lar__*V***, ***rl***)

← IE $^*h_2 \underset{\circ}{n} g h_1 lo$

→ OGr. *aggelos* (with pronunciation as if we had OGr. *angelos*, “messenger”) ← IE $^*h_2 engh_1 lo$ with B English *angel* and B German *Engel*

ajra (“cattle ground”), see *aj*

← IE $^*h_2 e\acute{g}$-*ro* (“where something is driven to → cattle ground”)

→ Lat. adj. *agrarius* whence B *agrarian*

∼ E *acre* (“cattle ground → field → surface measure of about 4000 square meters”)

∼ NHG *Acker* (“field”) (p. 76)

añc 1. class: ***añcati*** or
ac 1. class: ***acati*** (“to bend, to go”)
aṅka (“hook, curve”), see s.v. *aṅka*

← IE root **Henk*

See the *ac/añc* words (where “dir.” stands for directed):

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”)	*avāñc* (“dir. downward, southern”)	*avāk* (“downward”)
ud (“out”)	*ud-añc* (“dir. upward, northern”)	*ud-ak* (“in or from the north”)
		prāg-ud-ak (“north-eastern”)
tiras (“across, over”)	*tiry-añc* (“sideward”)	
ni (“into”)	*ny-añc* (“downward”)	
pra (“before”)	*prāñc* (“dir. forward, eastern”)	*prāk* (“in front, in the east”)

ad 2. class: ***atti*** (“to eat”)
annam (“food”) ← u.at. *ad-nam*

ad (“to eat”)		
present indicative	*at-ti* (1)	*ad-an-ti*
infinitive	*at-tum* (1)	
future	*at-sy-a-ti* (1)	
imperfect	*ād-a-t* (2)	*ād-an* (3)
perfect	*ād-a* (4)	*ād-us* (5)

1. **BA**

2. *ād* regularly from *a-ad* with preterite augment *a* ← IE *e*. The thematic vowel is unusual in 3. sg., but common in 3. pl. (pp. 163). See 3.

3. Perhaps regular from weak form IE **e-h*$_1$*d-*. Expected thematic vowel.

4. *ād* regularly from *a-ad* by reduplication.

5. Compare *ca-kr-us*. Perhaps *ād-us* is regular from weak form IE **h*$_1$*e-h*$_1$*d-*.

← IE root **h*$_1$*ed*

→ Full-grade representatives
   - ◇ E to *eat* (**GER**)
   - ◇ NHG *essen* (**NHG__*C***)

∼ Zero-grade representatives: Present participles derived from IE **h*$_1$*d-ent/***h*$_1$*d-ont* ("eating, eater"):
   - ◇ OI *danta* ("an elephant's tusk")
   - ◇ OGr. B *dont*-ology
   - ◇ Lat. B *dent*-al
   - ◇ E *tooth* (**NHG__E**) ∼ NHG *Zahn* (**NHG__*C***)

a-di-ti f. ("liberation")
also: name of a goddess, mother of the *ādityas*, like *mitra*, *varuṇa*
See p. 69 and *dā* ("to bind").

adhara ("low, inferior")
adhas ("under")

← IE **H*$_1$*n̥dhero/***H*$_1$*n̥dhes*

→ Lat. B *infra*structure

∼ E *under* ∼ NHG *unter* (but compare E *hound* ∼ NHG *Hund* on p. 76, where Germ. *d* is not changed to NHG *t* after *n*)

an-as n. ("vehicle for heavy burdens, cart")

← IE **h*$_3$*enos* (IE *o* ← *h*$_3$*e* and hence non-application of **L*o***)

→ Lat. *onus* (gen. *oneris*) as in *"onus* of proof", Lat. B *oner-ous*, to *ex-oner-ate*

an 2. class: ***aniti*** ("to breathe") and perhaps ***anila*** ("wind")
ana ("breath")

◇ ***ānа*** ← *ā* + *ana* ("inhalation, mouth")

◇ ***apāna*** ← *apa* + *ana* ("downward breath, elimination")

◇ ***udāna*** ← *ud* + *ā* + *ana* ("upward breath")

◇ ***prāṇa*** ← *pra* + *ana* ("vital breath")

◇ ***vyāna*** ← *vi* + *ā* + *ana* ("moving breath, circulation")

◇ ***samāna*** ← *sama* + *ana* ("even breath, digestion")

◇ ***aniniṣati*** desiderative (difficult, see p. 141)

← 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* and pp. 145
anv-añc ("folloing"), see *añc* above
anv-ak ("behind")

ant-a ("border, ending")
vêdānta ("end of Vedic literature"), see *vid*

← IE $^*h_2ent$-*o*

→ E *end* ∼ NHG *Ende* (not straightforward in view of **GER**)

See *antara* ("another").

antar ("within")
antar-a ("interior, intimate")
antar-ikṣam/***antar-īkṣam*** ("transparent space → airspace") with second part from *īkṣ*
antar-uṣya ("station, dwelling place") with second part from *vas* ("to dwell")
antas-tyam ("intestines") ← *antar* (sandhi *r* → *s* before *t*) + suffix *-tya* (compare *apa-tyam* s.v. *apa* and *amā-tya* s.v. *amā*)

← IE $^*h_1 enter/h_2 \underset{\circ}{n} t\acute{e}r$

→ Lat. *inter* as in B *inter*-national

∼ Lat. B *intestine*s ← IE $^*h_1 enter\text{-}sth_2\text{-}o$ (for second part, see s.v. *sthā*)

∼ NHG *unter* (“among”)

The IE stress was on the second syllable, at least in IE $h_2 \underset{\circ}{n} t\acute{e}r$. Then, *t* in NHG *unter* is expected as in NHG *Vater* (see s.v. *pi-tar*). Compare the other NHG *unter* s.v. *adhara.*

anta-ra (“another”)
anta-ma (“next, nearest”)

← IE $^*h_1 ente\text{-}ro$

→ 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”.

ant-i (“opposite, in the face of”), locative of a root noun
anti-mitra (“surrounded by friends”)

← IE $^*h_2 ent$ (“front, face”)

→ OGr.

- ◇ B *anti-pode* (“who has his feet against ours on opposite spots of the globe”), for second part see s.v. *pad*
- ◇ B *anti-biotics*, for second part see s.v. *jīv*

∼ Lat. *ante* as in *ante Christum natum*

anya (“other”)

← IE $^*an\text{-}yo/^*al\text{-}yo$

∼ OGr. *allos* and OGr. B *allergy*, *allegory*

∼ Lat. *alius* and Lat. B *alibi* (see *iha*)

anyônyas (“one another”) is petrified from nom. sg. *anyas anyas* by **CpL*z*** 1. line. The acc. sg. is **not** *anyam-anyam*, but *anyônya-m*.

See also *ari*.

ap f. (“water”), only pl.
with compound-final “zero-grades” (pp. 145):

◇ ***apsu-ja*** ("born in the waters") formed with loc. pl. rather than the usual stem, see *jan*

◇ ***apsu-jit*** ("vanquishing in the region of the clouds"), 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 at the end of the first part produced by laryngeal in 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* (p. 229).
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-tara (superlative: “farther off”)
apāñc (“backward, western”), see *añc*
apa-tyam (“child, offspring”), for suffix *tya* compare *antas-tyam* s.v. *antar* and *amā-tya* s.v. *amā)*

← IE $^*h_2ep$-*ó* (“off”)

→ OGr. *apo* and OGr. B *apo*calypse (for second part see *kulam*)

∼ Lat. B *ab*-straction or *ab*-duction (where voicing may be due to 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 n. (“action, deed, rite”)

← IE $^*opes/h_3epes$ (with regular non-application of **L*o***)

→ Lat. *opus* with B *opera* and *opulent* and NHG *opfern* (“to sacrifice”) with unclear **NHG_*C*** (for expected u.at. *offern*)

∼ Lat. *officium* ← $^*opi$-*fak-io* with B *official*

∼ NHG *üben* (“to exercise”), *üblich* (**VER**) (“normal, usual”)

api (“at, by around”)

← IE $^*h_1opi$

→ OGr. *epi* in OGr. 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, inaccessible”) with **BA**, see *pad*

abhi (“around, on both sides, toward”)

← IE $^*h_2m\overset{\circ}{}bhi$

→ OGr. B *amphi*-theater

∼ Lat. B *ambi*-ence, *ambi*-valent, *ambi*-guous

See also *ubha* (“both”).

am 2. class: ***amīti*** (“to grab, to harm, to swear”)
ama-tram (“instrument for grabbing (?) → drinking vessel”)

← IE root $^*h_3emh_3$

→ 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*

amā (“home, at home”)
amāt (“from home”)
amā-tya (“house companion, minister”), compare *apa-tya* s.v. *apa*
See *svāmin*.

ay-as n. (“ore, iron”)

← IE $^*h_2eyes/ayes$ n. (“bronze”)

→ Lat. *aes*, *aeris* n. (“copper, bronze”)

∼ E *ore*

∼ NHG *ehern* (“brazen, iron”)

ar (“to fit, to connect”)
ara (“spoke of a wheel”)
ṛ-ta (“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
ṛ-tv-ij m. (“offering at the right time → priest”) ← *ṛtu* (“time of year, right time”) + zero grade of *yaj* (“to sacrifice”)
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”)

aratni m. (“elbow”) (***rl***)

← IE $^*Heh_3l$-

→ E *elbow* ∼ NHG *Elle* (unit of length, often from the tip of the middle finger to the bottom of the elbow), *Ellbogen/Ellenbogen* (see s.v. *bhuj* (“to bend”))

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 (see Thieme (1938, 1957)):

◇ *ari* originally means “stranger”, whence “enemy” in classical Sanskrit, but “guest” in the Ṛgveda

◇ *ārya* (English B *aryan*) used by the Old Indians to describe themselves as people who are 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*

aritar (“rower”)

← IE root $^*h_1reh_1$ (“to oar”)

→ E *to row* ∼ NHG *Ruder* (“rudder”)

arj-una (“white, silvery”)
arj-ata (“white, silvery”)

← IE $^*h_2erǵ$-*u* (“white”)/$^*h_2r̥ǵ$-*nt-o* (“silver”)

→ Lat.

- ◇ *arg-entum* (“silver”) → Fr. *arg-ent*
- ◇ B *arg-ument* (“what makes clear”)

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 $^*h_2orbho$

→ OGr. B *orphan* (**OGR**)

∼ NHG *Erbe* (“what the orphan obtains, bequest”), *Arbeit* (“done by the orphan → labour”), *arm* (“being without parents → poor”)

arś-as n. (“hemorrhoids”)

← IE $^*h_1elḱ$-*es*

→ OGr. *helk-os* (“abcess, ulcer”)

∼ Lat. *ulc-us* and B *ulc-er*

av 1. class: ***avati*** (“to help”)
ūta ← IE $^*h_2uH$-*to* PPP (**Lar_ *V***), also in *indrôta* ← *indra* + *ūta* (“helped by Indra”)
ūti f./m. (“help”) ← IE z.g. $^*h_2uH$-*ti* (**Lar_ *V***)
avitum ← $^*h_1evH$-*tum* infinitive (**Lar_ *V*** between consonants)
ô-man m. (“protection, grace”) ← $^*h_1euH$-*m-*

← IE root $^*h_1euH$

→ Lat. *iuvāre*

av 1. class: ***avati*** (“to enjoy”)
avasa (“refreshment, protecting”)
aviṣyu (“desirous”)
avitum ← **h*2*evH-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-sā 4. class: ***ava-syati*** (“to finish, to accomplish”),
ava-sānam (“place of dismounting from a horse”)
ava-sātar (“deliverer, liberator”)

← IE **seh*2

→ 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 **Lo**)

→ Lat. *ovis* with B *ovine* (“with respect to sheep”)

∼ E *ewe*

aś-ri f. (“angle, edge”)
aś-man m. (“stone”)

← IE **h*2*oḱ*

→ OGr. *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* (p. 76)

aśva (“horse”)
aśv-in (“having horses”, PN of the two gods who use horses to pull the sun across the sky)
āśu (“fast”) ← reduplicated IE $^*h_1o\text{-}h_1\acute{k}\text{-}u$ (unclear)
āśv-aśva← *āśu* + *aśva* (“having fast horses”)

← IE $^*h_1e\acute{k}vo$

→ OGr. B *hippo*, *hippo*-drome

∼ Lat. B *equestrian*

aśvattha (“banyan tree ← horse food”) ← *aśva* (“horse”) + *d* (zero grade of *ad*, “to eat”) + *tha* (suffix)

aṣṭā/aṣṭâu (“acht”)

← IE $^*h_3e\acute{k}to/^*o\acute{k}to$

→ OGr. B *octo-pus* (“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-ta f.g. (!) PPP
as-ra (“throwing, painful”), f.g. (!), see p. 131
as-i m. (“sword”)
abhy-as-ta (“repeated, practised”) ← *abhi* (“around, on both sides, toward”) + PPP
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. 167
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

◇ ***ī-ṣat*** ("being in that manner → a bit, somewhat") ← *ī* + *sat* (n. pres.P)

◇ ***sat-tvam*** ("being, nature, living being") ← *sat* + *tva* (suffix)

◇ ***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")
asura ("lord of life, god, demon") ← *asu* + *ra* (suffix) may also belong here. In any case, misunderstanding this as *a* + *sura*, ***sura*** ("god") has been created by back-formation, where *a-sura* would be understood as "not a god"
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 $^*h_1 es$

→ 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*

∼ E *is* ∼ NHG *ist*

See *su*.

asthi n. ("bone")

← IE $^*h_3 ost\text{-}h_2$

→ OGr. B *osteo-porosis*

∼ Lat. B *osseous* ("concerning bones"), to *ossify*

aham

← IE $^*h_1 e\acute{g}oh_2 m$

→ Lat. *egō* with B *egotism*

∼ Berlin Low German *icke* (**GER**)

$\sim$ E *I* $\sim$ NHG *ich*

Courageous laryngalists defend this development:

Lat./OGr. *egō*
$\leftarrow$ IE $^*h_1 e\acute{g} oh_2 / h_1 e\acute{g} oh_2 m$
$\rightarrow$ $h_1 e\acute{g} h_2 om$ (metathesis of *o* and h_2, similar to **Lar_MTh**)
$\rightarrow$ *eǵhom* (**Lar_*V***, **Lar_*CH***)
$\rightarrow$ *ehom* (**PPal**)
$\rightarrow$ *aham* (***aā***)

ahar/ahan n. ("day")
aho-rātram ("day and night"), see remark 4 below
praty-aham ("daily, every day"), see section E.4, pp. 270

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. 247).
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 6). Instead, they have spilled over from words like the *karm-an* (p. 249).
4. Taking *ahas* as a third stem, one obtains *aho-bhis* and similar forms (p. 235) by **CpL*z*** 1. line.
5. The third stem is also in use in loc. pl. Compare *manas-su/manaḥ-su* (p. 235).
6. **L*o***

F.2.2. *ā*

ādhra ("needy, weak, poor"), see **Lar__SY**, see pp. 130
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 **h*$_1$*e-h*$_1$*p-neu* (a reduplicated present form)

← IE root **h*$_1$*ep*

→ Lat.

- ◇ B *op*-t-ion, to ad-*op*-t
- ◇ B ad-*ep*-t, in-*ep*-t (p. 69)

∼ E *to gi-ve* ∼ NHG *ge-ben* ← ie **ǵo(m)-h*$_1$*ep* (doubtful derivation, see s.v. *gabha*)

ā-yus n. ("life"), paradigm on p. 236
ā-yur-veda ("medical science") (**Vis**, see *vid*)
yuvan m. ("youngster") ← IE zero-grade **h*$_2$*yu* (paradigm on p. 236)

← IE **h*$_2$*oy-u-*

→ OGr. 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*$_2$*ev-is* ("clearly")

→ Lat.

- ◇ B *audition* ← Lat. *audīre* ("to hear") ← IE **h*$_2$*evis-dhh*$_1$-, similar to Lat. *dīvidere* (s.v. *dhā*)
- ◇ B *obedient* (by a complicated development)

∼ E *ear* ∼ NHG *Ohr* ← IE $^*h_2eu$-*s*

āsa (“ashes”)

← IE $^*h_2eh_1sh_2$

→ Lat. B *ar-id, ar-dour, ar-dent* (**LAT__*sr***)

∼ E *ash* ∼ NHG *Asche*, E *Ash* Wednesday ∼ NHG *Aschermittwoch*

∼ NHG *Esse* (“hearth”)

F.2.3. *i*

i 2. class: ***êti*** (“to go”), pp. 167
i-ta PPP
palāy 10. class: ***palāyatê*** (“to go away → to flee”) (***rl***) ← **parāyatê* ← **parā-ayatê*
sahāya (“companion, helper”) ← *saha* + *aya* and
sāhāyya (“fellowship, help”) (see pp. 152)
ay-ana/ay-ana-m (“going, motion, hallway”) as final part in

◇ *vātāyanam* (“window”) ← *vāta* (“wind”)

◇ *rāmāyaṇam* (name of Indian epic) ← *rāma* (name of Indian hero)

◇ *samavāya* (“inherence, cooccurrence” in philosophy) ← *sam* (“together”) + *ava* (“down”)

i (“to go”)		
present indicative	*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-ê-t* is regular by **VS** line 6 (pp. 32).

2. Difficult. The 3. pers. pl. impf. should be in zero grade, but perhaps again **VS**.

3. See section D.2, pp. 203.

← 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. 205)

∼ Lat. *ita* ("in this manner")

idh*/*indh 1. class: ***indhatê*** ("to set fire to")
êdha ("kindling, fire wood")
iddha ("inflamed") PPP (**ASh**)

← IE root $^*h_2eidh$

→ OGr. *aithō* ("I set on fire")

∼ Lat. *aedificium* ("fireplace → room with a fireplace → building")

iṣ 1. class: ***icchati*** ("to wish")
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 to *ask* ∼ OHG *eiscōn* → NHG *er-heisch-en* ("to demand")

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”)
iṣu m. (“arrow”)

← IE root *h_1eis (“to set in motion”)

→ Lat. *īra* (“anger”) (**LAT_ *V***) as in B *irate*

If the laryngeals would not differ, one might suggest 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. 50

→ Lat. *ibī* (“there”) (with **LAT_ *V*** ← IE variant **i-bhei*) with *alibī* (“elsewhere”) and B suspect’s *alibi* (see s.v. *anya*)

F.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. 136).

īrma (“arm, forequarter of an animal”), with **Lar_SY** from z.g.

← IE *h_2erH-*mo*

→ Lat. *armilla* (“arm-band, bracelet”) with B *armillary sphere* (“sort of celestial globe”)

∼ E *arm* ∼ NHG *Arm*

īś 2. class: ***īṣṭe*** (“to own, to rule”)
abhīśu m. (“rein, bridle”), for first part see *abhi*
īś-vara “god, lord”

← IE root **h*$_2$*eiḱ*

→ E own ∼ NHG *eigen* (**VER**)

F.2.5. *u*

ukṣ 1. class: ***ukṣati*** (“to grow, to get strong”)
ug-ra (“powerful, mightly”), see p. 130
ôj-as (“power”) with IE suffix *-es* and **SPal**

← IE root **h*$_2$*eug-*/**h*$_2$*euks-* with *s*-extension

→ 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*$_2$*vegs* (with metathesis or schwebeablaut)

Difficult if 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 from *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"), see *añc*
ud-ak ("in or from the north")
un-mārga ("a wrong or evil way") ← *ud* + *mārga*

← IE **ud*

→ OGr. 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")
ud-ra ("otter"), see p. 130
ôd-man n. ("floods, rain")

← IE **ved-n/***ved-r*

→ OGr. B *hydrate*

∼ Lat. *unda* "wave"

∼ E *water* ∼ NHG *Wasser*

udaram ("belly")
sôdara ("brother") ← *sa* + *udara*

← IE **Hud-er*

→ Lat. (B) *uterus*, but *t* difficult

upa ("to, near")
upa-ni-ṣad 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*

→ OGr. B *hypo*-thesis (for second 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 related to E *of* or *off* (s.v. *apa*)

upari (“over”)

← IE **(s)upér(i)*

→ OGr. B *hyper*-bola, *hyper*-active (second part Lat., see *aj*), *hyper*-tension (second part Lat.)

∼ Lat. *super* (with Lat. *s* as in *sub*, see *upa*) with B *super*man, *super*vision, *super*ficial

∼ E *over* ∼ NHG *über* (**VER**)

upa-stha (“womb, genitals, sheltered place”) with several options:

◇ *upa* (“to, near”) + *stha* (← *sthā*, compare p. 146) or

◇ *upas* (“womb”) +

- *stha* (← *sthā*) or
- *tha* (suffix)

ubha (“both”), probably related to *abhi* (“around, on both sides, toward”)
∼ E *both* ∼ NHG *beide*

ulūka (“owl”)

← IE **ul*/**ulul*

→ Lat. *ulul-āre* (“to howl”)

∼ E owl ∼ NHG Eule

uṣ 1. class ***ôṣati*** (“to burn, to shine”), the same root as *vas*[2]
uṣ-ṇa (“hot”)
uṣ-as f. (“dawn, aurora”)

← IE root **Heus*

→ Lat.

◇ B *aurora*

◇ *amb-ūrere* (“to burn around”, see *abhi*) (**LAT_sr**) → *am-būrere* and hence B com-b*ust*ion

∼ 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*

F.2.6. *ū*

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 **h₃r̥dh-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”)
sam-ūh (“to heap together”) and ***sam-ūha*** (“heap, bulk, union”)
ūh goes back to *vah* (“to drive, to bring”) with PPP *ūḍha*, p. 123. Long *ū* in *ūh* may result from *ūḍha* or perfect 3. pers. pl. *ūh-us* (p. 209) through levelling.

ūh 1. class: ***ôhatê*** (“to consider”)
ôh-as n. (“praise”) with IE suffix *-es* and **SPal**

← IE root $^*Heug^wh$

→ Lat. B *vo-tum*, *de-vou-t*

F.2.7. *ṛ*

ṛ 1. class: ***ṛ-cchati***/3. class: ***iyarti***/5. class: ***ṛ-ṇô-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**)

→ OGr. 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. 46.

ṛtê (“without”) is a loc. of some noun ***ṛta***, but is not clear whether it belongs to *ṛ* or to *ar*

ṛṣ 1. class: ***arṣ-a-ti*** (“to flow, to stream”)
rasa (“sap or juice of plants”)
a-lasa (“inert, languid”) ← *a* + *rasa* (***rl***)

← IE root $^*h_1ers$/$^*h_1res$ (“to flow”)

→ Lat. *rōs*, *rōris* (“dew”)

F.2.8. *ê, âi*

ê-ka (“one, single”)
ê-kākin (“single, alone”) ← *êka* + *ak* (suffix) + *in* (suffix)

← IE **Hoi*

→ Lat. *ūnus* (“one”) with B *unity*

∼ E *one* ∼ NHG *ein*

êj 1. class: ***êjatê*/*ījatê*** (“to stir”)

← IE root **h*$_2$*eǵ-* (like *aj*)

Formation of Ved. *ījatê* by reduplication, like *sīd-ati* (p. 85):

IE **h*$_2$*i-h*$_2$*ǵ-e-toi* (reduplication with *i* and zero grade)
→ *īǵ-e-toi* (**Lar_*V***)
→ *īj-e-toi* (**PPal**)
→ *ījatê* (***aā*, DIPH**)

ījatê then lead to f.g. *êjate*. See *aj*.

F.2.9. *ô, âu*

ôk-as n. (“resting place, home”)
vanâukas (“forest dweller”), see *vanam* and **VS** line 5

ôj-as n. (“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”)

ô-man m. (“protection, grace”), see *av* (“to help, to promote”)

ôh-as n. (“praise”), see *ūh* (“to consider”)

F.3. Velar stops

F.3.1. *k*

kanyā (“girl, daughter”)
kanā (“girl”)
kanī (“girl”)

← IE **ken-*

→ Lat. B *re-cent*

kad (“what”), Vedic for Sanskrit *kim*

← IE **k^{w}od*

→ Lat. *quod*

∼ E *what* ∼ NHG *was*

See the related *kas*, *kiyad*, *kim* below.

kam (“to wish, to desire”)
ca-kam-ê (“he wished”) pf. with **SPal**, but without **L*o*** because IE *o*-ablaut root **komh$_2$* has two root-final consonants
ci-kam-i-ṣatê (“he wishes to desire”) desiderative
kānta (“beloved”) (**BA**) ← u.at. *kām-to* (**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”), Vedic for Sanskrit *kim*
cid as in ***kaś-cid*** (“someone”) by **BA**
kiyad (“how large, how long”) and ***kiyan-mātra*** (“measuring how much → small”)

ku ("whereever → unknown origin/source → bad, little") as in ***ku-sakhī*** ("bad female friend")
kū ("where"), variant of *ku* as in ***kū-cid*** ("somewhere, anywhere")
ku-tas ("from where") with adverbial suffix *tas*
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*)

kuv-id ("whether indeed, whether perhaps") ← *kū* + *id* (see *cêd* s.v. *ca*)

← IE $*k^we/*k^wo$

→ Lat. B (saying in several languages) *quid pro quo* ("reward, return service")

∼ E *what*, *who* ∼ NHG *was*, *wer*

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* with **SPal** ("to turn") because "The Times They Are A-Changin" (Bob Dylan)

kās 1. class: ***kāsatê*** ("to cough")
kās f./***kāsā*** ("cough")
kāsa ("cough")

← IE root $*k^wās$

→ 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")

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 ***kav-a-tê/***2. class ***kâu-ti/kav-ī-ti*** (“to cry, to sound”), difficult and perhaps not a Narten verb (see pp. 178)
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 **L*o*** 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”)
saṃ-s-kṛta with *s* before *k* due to *s* mobile*?*
See *sū-kara.*

kṛt 7. class: ***kṛṇatti*** (“to spin”)
MI ***kaṭa*** (“mat”) ← ***karta***, where *r* is dropped while cerebralising *ṭ* (pp. 60)

kṛt 6. class: ***kṛntati*** (“to cut”)

← IE root **(s)ker(t)* (*s* mobile)

→ E to *shear* ∼ NHG *scheren*

∼ maybe E *hard* ∼ NHG *hart* (see s.v. *kratu*)

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 English *corps*, *corporation*
- ◇ B German *Körper* (“body”)

kṛp 1. class: ***kṛpatê*** (“to lament, to moan, to beg”)
kṛpā (“compassion”)
kṛcchra (“difficult, dangerous”) ← u.at. *kṛp-ra* (difficult), see pp. 130

← IE root **krep*

→ Lat. *crepāre* (“to make a sharp loud noice”) with B *dis-crep-ancy* (“difference in sound or opinion”)

kôvida (“experienced”) ← *kas vida* (“who knows”) by **CpLz** 1. line

krat-u m. (“power, energy”)

← IE **kret* (“to be strong”)

→ OGr. B demo-*cracy*

∼ maybe E *hard* ∼ NHG *hart* (see s.v. *kṛt*)

krand 1. class: ***krandati*** (“to lament, to cry”) (***rl***)

← IE root **kel*

→ Lat.

- ◇ *clārus* (“loud, clear, famous”), *calāre* (“to call out, to call together”), *clamare*, *conciliāre* (“to join, to make friends with”)
- ◇ B *clear*, to *clarify*, *clarinet*, *declaration*, coun*cil*, to *claim*, *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* (“bright”), *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 OGr. B *crystal* (originally “fossilised ice”)

∼ Lat. *cru-or* (“blood”) and

- ◇ *crūdus* (“raw, clotted”) with Lat. B *crude*, *cruel*
- ◇ *crūsta* (“crust, bark”) with Lat. B English *crust* and German *Kruste*

∼ E *raw* ∼ NHG *roh* ← OHG *hrō*

klôman m./n. (“right lung”), possibly assimilated (both *p* and *m* are labial) from u.at. *plôman*, see *plu*

← IE **pleumon* (“swimmer → lung”)

→ Lat. B *pulmonary*, Lat./OGr. *pulmology*

kṣam f. (“earth”)

← IE **dhǵhom* (**SIB**, see p. 46)

→ OGr. *khthōn* 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, “bridegroom”)

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* (“to push”), *Schub* (“boost, impetus”) (**GER**) and also somehow *Schaufel* (“shovel”) and *Schippe* (“scoop, shovel”)

F.3.2. *g*

gabha (“grabber of penis → vulva”) (**DA**)
gabhasti m. (“arm, hand”) (**DA**), difficult second part

← IE root **ghebh*/**gheb* (“to grab, to hold”)

→ Lat.

◇ *habere* with B *habit*, *habilitation*, *in-hibition* (p. 69), *ex-hib-ition*

◇ *habitāre* (frequentative of *habere*) with B *habitation*

∼ E to *give* ∼ NHG *geben* (but see s.v. *āp*)

and finally 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* (“gable”), *Gabel* (“fork”)

But **not** E to *have* ∼ NHG *haben*, see *śap*

gam 1. class: ***gacchati*** (“to go”)
gā 3. class: ***jigāti*** (“to go”) ← IE root $^*g^w$-eh_2, consequential of *gam*, see pp. 82
gā-tram (“instrument for going → body limb”)
gā-tu m. (“place for going → course, lane”)

gam (“to go”)		
present indicative	*gacch-a-ti*	*gacch-an-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 D.2, pp. 203).
5. Thematic aorist, but in full grade

On the one hand: ***gam***

← IE $^*g^w em$ (see also *gā* below)

→ OGr. B *basis* with zero grade (**IE__SY__*N***) and OGr. B acro-*bat* (“someone who tip-toes”) (for *akro* (“top, summit, castle”) see *aśman*)

∼ Lat. (**LAT__*v***) *venīre* with B *inter-ven-tion*, *con-vent*, *con-ven-tion*, *ad-vent* (“coming of Jesus Christ”), *e-vent*, *pre-ven-tion*

∼ E to *come* ∼ NHG *kommen*, *bequem* (“comfortable”)

On the other hand, with *sḱ* suffix*:* ***gacchati*** (**SIB**)

← IE $^*g^w \underset{\circ}{m}$-*sḱ*

→ OGr. *ba-sk-ō*

Compare *iṣ*, *icchati* (“to wish”), *pracch*, *pṛcchati* (“to ask”), and *yam, yacchati* (“to hold, to restrain”).

garbha (“womb, embryo”) (***rl***)

← IE $^*g^w olbh$ (“to grab, to hold”)

→ OGr. a-*delph*os (“from the same womb → brother”) with place name *Phil-a-delphia*, where OGr. *a* is related to OI *sam*

guru (“heavy”) with ***guru*** m. (“teacher”)
gar-īyans (comparative, “heavier”)
gar-iṣṭha (superlative, “heaviest”)
gārvan m. (“heavy object → stone”)

← IE $^*g^w \underset{\circ}{r} h_2 u$

→ OGr. B *baro*meter

∼ Lat. B *gravity*

guh 1. class: ***gūhati*** (“to hide”)

guh (“to hide”)		
present indicative	*gūh-a-ti* (3)	*gūh-a-n-ti* (3)
infinitive	*gôḍhum* (1)	
PPP	*gūḍha* (2)	
imperfect	*a-gūh-a-t* (3)	*a-gūh-a-n* (3)
perfect	*ju-gūh-a* (3, 4)	*ju-guh-us* (4, 5)
sa-aorist	*a-ghuk-ṣ-a-t* (6)	
desiderative	*ju-ghuk-ṣ-a-ti* (7)	*ju-ghuk-ṣ-u* (7)

1. Infinitive PPP *gôḍhum* is regular:

IE **gheuǵh-tum* (f.g. with infinitive marker *tum*)
→ *geuǵ-dhum* (**DA** and **ASh**)
→ *geuz-dhum* (***sz*** before voiced stop)
→ *geuẓ-dhum* (**RUKI**)
→ *gôẓ-ḍhum* (**Cer*D***, ***DIPH***)
→ *gô-ḍhum* (**CpL*z*** 5. line)

2. PPP *gūḍha* is perfectly regular:

IE **ghuǵh-to* (z.g. with PPP marker *to*)
→ *guǵ-dho* (**DA** and **ASh**)
→ *guz-dho* (***sz*** before voiced stop)
→ *guẓ-dho* (**RUKI**)
→ *guẓ-ḍha* (**Cer*D***, ***aā***)
→ *gū-ḍha* (**CpL*z*** 3. line)

3. *gūh-a-ti* for expected full grade *gôh-a-ti*. Levelling may be responsible, see PPP *gūḍha*.

4. The perfect reduplication with *ju* is analogical secondary palatalisation as in *cu-kṣôbh-a* (p. 207). However, one should expect the strong form 3. pers. sg. *ju-gôh-a*.

5. Expected weak form *ju-guh-us*.

6. *sa*-aorist with expected appearance of aspiration from IE root **gheuǵh*. Similar to future forms like *bhôt-sy-a-ti* (pp. 40, 112) and, closer to home, *ghôk-ṣy-a-ti*.

7. See 5. Palatalisation of the reduplicated syllable may be due to analogy from desideratives with *i*.

← IE root **gheuǵh*

gṛham ("house") from IE **ghr̥̊dho* (**DA** and p. 50)

← 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")

gṝ 9. class: ***gṛṇāti*** ("to mention with praise")
gūrta ("agreeable, welcome")
gūrti f. ("praise") (**Lar_SY**)

← IE root $^*g^werH$ ("to welcome")

→ Lat. B *grate-ful*, *grat-uitous*, *con-grat-ulation*, *grac-ious*

gô m./f. ("bull, cow"), declension on p. 254
Ved. ***gô-pā*** m. ("herdsman, cow protector")
gô-pa m. ("herdsman, cow protector"), for second part, see *pā* and pp. 145
gô-pāla ("herdsman, cow protector"), for second part, see *pṛ*
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*
gup 10. class: ***gôpāyati*** ("to protect cows → to protect")
gô-pā-yati is a denominative derived from Ved. *gôpā*. This explains long *ā*, which is otherwise not seen 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*	with 10. class:	*gôpāyati*

← IE $^*g^wou$

→ OGr. *bou-kolos* ("cowherd") ∼ OIr. *bua-chail* (for second parts, see *cal*)

∼ Lat. dialectal *bōs*, *bovis* with B *bovine spongiform encephalopathy* (short: BSE) and *beef* (English, but from Norman invasion)

∼ E *cow* ∼ NHG *Kuh*

granth 9. class: ***grathnāti*** ("to bind, to wind")
granth-a ("knot, text, book") (**Lar_*CH***)
grathita PPP (**SY_*N***, two effects of laryngeal)

← 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* (“crest, collar”)
- ◇ 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. 93) and compare *granth* with *pū*:

class	*gaṇa sign	$\surd$ (f.g.)	3. pers. sg.
7	**ne*	**yeug*	**yu-ne-g-ti*
9	**ne*	**peuH*	**pu-ne-H-ti*
9	**ne*	**grentH*	**gr̥nt-ne-H-ti*

The last line should yield **gratnāti* by **SY__*N*** and **Lar__*CH*** instead of *grathnāti* above. The latter is to be explained by levelling, for example by

	gratnāti	
influenced by	*grantha*	with aspirated *t*
turns into	*grathnāti*	with aspirated *t*

grabh (later ***grah***) 9. class: ***gr̥bhṇāti*/*gr̥hṇāti*** (“to seize, to take”), see pp. 50
grabha (“capture”)
grabhīta PPP with unexpected full grade and unusual long *ī*
grabhītar (“capturer”) with expected full grade (pp. 107), but unusual long *ī*

← IE root **ghrebh* ← IE **ghrebh*$_2$

→ 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, “canal”) ∼ 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 the following development:

IE **ghrebh*$_2$*-o*
→ **ghrebh-o* (**Lar_*CH***)
→ *ghrabh-a* (***aā***)
→ *grabh-a* (**DA**)

Similar to *grathnāti* (see *granth*), observe

class	*gaṇa sign	$\surd$ (f.g.)	3. pers. sg.
7	**ne*	**yeug*	**yu-ne-g-ti*
9	**ne*	**peuH*	**pu-ne-H-ti*
9	**ne*	**grentH*	**gr̥n̥t-ne-H-ti*
9	**ne*	**ghrebH*	**ghr̥b-ne-H-ti*

By **SY_*N*** and **Lar_*CH***, one should expect u.at. *gṛbṇāti* rather than *gṛbhṇāti* above. Levelling of the form

	gṛbṇāti	
influenced by	*grabha*	with aspirated *b*
turns into	*gṛbhṇāti*	with aspirated *b*

is responsible. It looks as if the laryngeal caused both the aspiration of *b* and the gaṇa sign *nā*. Remember a somewhat similar phenomenon with *sthā*, *tiṣṭhati* (“to stand”), where the laryngeal of IE **steh*$_2$ produced both the aspiration of *t* and, on top, *i* in the PPP form *sthita* (p. 86).

grāma (“troop, village”) (**L*o***)

← IE **h*$_2$*ǵrom-o*

→ Lat. *gremium* (“lap, interior”) and Lat. B German *Gremium* (“interior → committee”)

F.3.3. *gh*

gharma (“heat”)

← IE *$g^w herm$/*$g^w horm$

→ OGr. B *thermic*, *thermos* bottle (**OGR**)

∼ Lat. *fur-nace*

∼ E *warm*

ghṛ 2. class: ***ji-ghar-ti*** (“to sprinkle, to oint”)
ghrā 2. class: ***ghrāti*** (“to smell”) ← IE **ghr-eH* (consequential, see pp. 82)

← IE root **gher*

→ OGr. *khr-onos* (“time”) with B *chrono-meter*. Time may be like a river that flows around immobile objects and anoints them. Compare

- ◇ OGr. *khr-ono* ← IE **ghr-ono* with OGr. *kr-ono* (“cutting”) ← IE **kr-ono* (s.v. *carman*)
- ◇ OGr. *thr-ono* (“throne”) ← IE **dhr-ono* (s.v. *dhṛ*)

See unpublished paper by Kulikov and see p. 131.

F.4. Palatal stops

F.4.1. *c*

ca (“and”)
cêd (“if”) ← *ca* + *id* (see *kuv-id* s.v. *kas*)

← IE *$k^w e$

→ OGr. *te* (**OGR**)

∼ Lat. *que* which is also enclitic: senātus populus*que* rōmānus (abbreviation: SPQR, “the Roman senate and people”)

See *tu, na,* and, *pañca.*

cakṣ 1. class: ***cakṣatê***/2. class: ***caṣṭê*** (“to see, to appear”)
cakṣ-us n. (“eye”)
Probably, *cakṣ* is the reduplicated form *$k^w e$-$k^w \acute{k}$ (**SPal**, **SIB**)

← IE *$k^w e\acute{k}$ (“to appear, to shine”)

One obtains

IE **k*^{w}*e-k*^{w}*ḱ-toi* (3. pers. sg. pres. ind. ātm.)
→ *ce-k*^{w}*ḱ-toi* (**SPal**)
→ *cakṣ-ṭê* (**SIB** 8. line)
→ *caṣ-ṭê* (**CCl**)

cakram ("wheel, circle")

← IE **k*^{w}*e-k*^{w}*lo*, a reduplicated form from IE **k*^{w}*el* (see *cal*)

→ OGr. B *cycle*, en-*cycl*-ical, *(en)cyclo-pedia*, *bi-cycle*, *re-cycle*

catvāras (nom. pl. m.) "four"
catur ("four times")

← IE **k*^{w}*etvor* (**SPal**, **L*o***)

→ OGr. B *tetra-hedron*

∼ Lat. *quattuor* with B German *Quadrat*

∼ E *four* ∼ NHG *vier*

See *turīya* ("fourth"). For f. *catasras* see s.v. *svasar* (p. 403).

cand 1. class ("to be white, to glow, to shine")
candra ("shining, moon")
chand 10. class: ***chand-aya-ti*** ("to seem good, to please")
chand-as n. ("desire, delight, hymn")

← IE root **(s)kend* ("to shine, to appear") (*s* mobile and **SIB/*sP(h)***)

→ 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)

cal 1. class: ***calati*** ("to move")
car 1. class: ***carati*** ("to go") (***rl***), see *cakram*
ca-ṅ-cal-ya-tê frequentative (p. 150) ("to stir, to quiver")
ca-ṅ-cal-a ("unsteady").

← IE root $^*k^w elh_1$

→ OGr. *bou-kolos* (“cowherd”) ∼ OIr. *bua-chail* (for first part, see *gô*)

∼ Lat.

◇ *colere* (“to 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 Fr. *collier* (“necklace”)

◇ *an-cul-us* (“man-servant”) ← IE $^*h_2 m̥ bhi\text{-}k^w olh_1\text{-}os$ (for first part, see *abhi*) with Lat. *ancilla* (“woman-servant”) and the B *ancilla-ry (services)*

∼ NHG *Hal-s* (“the mover, the turner → neck”)

kṛṣ (“to pull, to drag”) may also be related, from IE $^*k^w ol\text{-}s$.

carman n. (“leather”) (**SPal**)

← IE $^*(s)ker\text{-}men$ (“torn skin”) (*s* mobile)

→ with *s* mobile*:* E *sharp* ∼ NHG *scharf*, NHG *Schirm* (“umbrella”), *Schere* (“scissors”)

∼ without *s* mobile*:* E *harvest* ∼ NHG *Herbst* (“autumn”)

kṛt (“to cut”) is a *t*-extension.

ci 3. class: ***cikêti***/5. class: ***cinôti***/1. class: ***cayatê*** (“to notice, to sift through”)
nis-ci (“to decide”)
niś-cay-a (“decision, certainty”) (**DIPH**)
niś-ci-tam (“surely”)

← IE root $^*k^w ei$

It seems likely that *ci* (“to stack”) is related to *ci* (“to sift through”):

◇ If one sifts through a pile, one cannot help noticing.

◇ If one takes out of a heap, one makes a decision.

F.4.2. *ch*

chad 1. class: ***chad-a-ti*** (“to cover”)
a-ccha (“uncovered”) (p. 69)
sv-a-ccha (“pure, transparent”), see *su*

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. 130

← IE root **skeid* (***sP(h)***)

→ OGr. 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”)

chô 4. class: ***chyati*** (“to cut open, to skin”)

← IE root **skeH* (“to split”)

→ Lat. B *con-scious*, *science*

F.4.3. *j*

jan 4. class: ***jāyatê*** (“to beget, to be born”)
jana (“man”)
janitar (“father”)

jan (“to beget”)		
present indicative	*jā-y-a-tê* (1)	*jā-y-a-n-tê* (1)
infinitive	*jan-i-tum* (2)	
PPP	*jā-ta* (1)	
future	*jan-i-ṣy-a-tê* (2)	*jan-i-ṣy-a-n-tê* (2)
imperfect	*a-jā-y-a-ta* (1)	*a-jā-y-an-ta* (1)
perfect	*ja-jñ̃-ê* (3)	*ja-jñ̃-irê* (3)
iṣ-aorist	*a-jan-iṣ-ta* (2)	*a-jan-iṣ-a-ta* (2, 4)
desiderative	*ji-jan-i-ṣ-a-ti* (2)	*ji-jan-i-ṣ-u* (2)

1. The IE full grade root is $^*ǵenh_1$. The 4. class builds on the zero grade. By **Lar_SY**, *jā-y-a-tê* is regular from IE $^*ǵ\underset{\circ}{n}h_1$*-ye-toi*. Similarly, see zero grades in imperfect and PPP.

2. By **Lar_*V*** or by analogy, the laryngeal shows up as *i* between consonants in *jan-i-tum* ← $^*ǵenh_1$*-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 $^*ǵenh_1$

→ OGr.

- ◇ *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***)
- ◇ *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-gn-ate* (“to be born with, related”)

∼ E *kin*(ship)

∼ NHG *Kind* (“begotten”, formally a PPP)

See also *jānu* and *jñā*.

jani f./***janī*** (“woman, wife”)

← IE *$g^w enh_2$ (**Lar_V**)

→ OGr. B *miso-gyn-y*

∼ E *queen* (compare *quick* s.v. *jīv*)

∼ OIr. *ben* (“woman”)

jānu n. (“knee”) (**Lo**)

← IE *$ǵ$*enu/ǵonu*

→ Lat. B *genu-flection*

∼ E *knee* ∼ NHG *Knie*

Related to *jñā* and *jan*? Alternatively, the basic meaning of IE *$ǵ$*enu/ǵonu* might be “curve” and this word is the same as *hanu* (“chin”).

ji 1. class: ***jayati*** (“to conquer”)
jāyā (“who has been captured → woman”) or from *jan*?
jyā 2. class: ***jyāti*** (“suppress”) ← IE *$ǵ$y-eH* (consequential, see pp. 82)

← IE *$ǵ$ei*

jihvā (“Zunge”), difficult

← IE *$d\underset{\circ}{n}ǵ$-vh_2*

∼ Lat. *lingua* with B *linguist* and *language* via Fr.

∼ E *tongue* ∼ NHG *Zunge*

∼ NIr. *mo theanga féin* (“my own language”, i.e., Irish)

jīv 1. class: ***jīvati*** (“to live”) ← IE z.g. $^*g^wih_3v$-*e-ti* by **SPal** and **Lar__*V***
jīva (“living”)
gaya (“life, possession, dwelling place, family”) ← IE $^*g^woih_3o$ (no **SPal**)

← IE root $^*g^weih_3(v)$

→ OGr. B *bio*-logy (**OGR**)

∼ Lat. B *vital*, *vitamin* and, in Germany: *Konvikt* (a flat shared by catholic students of theology), *Vik*tualienmarkt (market place in Munich)

∼ Germ.

◇ E *quick*

◇ NLG *erquicken* (“to refresh”), *quicklebendig* (“very lively”)

◇ NHG *keck* (“bold”)

juṣ 6. class: ***juṣatê*** (“to like, to enjoy”)
jôṣa (“satisfaction”)

← IE root $^*ǵeus$ (“to choose, to enjoy”)

→ Lat. *gūstus* in “with *gusto*” and Fr. “chacun à son *goût*”, where the circumflex is reminiscent of eliminated *s* (as in *hôpital*)

∼ E to *choose* ← OE *ceosan* ∼ NHG *kiesen* (old for “examine, choose”) (**NHG__E**)

∼ NHG *kosten* (“to taste, to enjoy”) versus *erkoren* (old for “chosen, elected”), *Kür* (“voluntary exercise”) and *Kurfürst* (“electoral prince”) by **VER**

jr̥ 1. class: ***jarati*** (“to waste away”)
jīrṇa PPP (“wasted, aged”)
jarā (“age”)

← IE root $^*ǵr̥_\circ H$-*no* (“having become old, ripe”)

→ Lat. *grānum* (in “*cum grāno salis*”) ← IE $^*ǵr̥_\circ H$-*no* (**IE__SY__*L***) and B English *pomegranate* (Lat. *pomum* (“fruit”)) or B German *Granatapfel* (NHG *Apfel* ∼ E *apple*)

∼ Germ.

◇ z.g. E *corn* ∼ NHG *Korn* ← IE $^*ǵr̥_\circ H$-*no* (**IE__SY__*L***)

◇ f.g. NHG *Kern* (“core”)

jñā 9. class: ***jānāti***(“to know”)

jñā (“to know”)		
present indicative	*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 $^*ǵneh_3$. Consider

class	*gaṇa sign	√ (f.g.)	3. pers. sg.
9	*ne	*peuH	*pu-ne-H-ti
9	*ne	*ǵneH	*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.

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 $ǵneh_3 \rightarrow$ *jñā*.

4. 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., as in *da-d-âu* from *dā* (“to give”).

← IE root $^*ǵneh_3$

→ OGr. B *gnosis* (“knowledge of God”), *a-gno-stic* (for the first part, see p. 69)

∼ Lat. B

- ◇ with *g*: *co-gn-ition* and *re-co-gn-ise* (compare *co-gnate* s.v. *jan*)
- ◇ without g in word-initial position: to *note*, *notion*, *no-bility*

∼ E to *know* ← OE *cnáwan*

∼ NHG *kennen* (“to know”, originally causative, see Gth. *kannjan*)

jñā looks like a consequential verb (pp. 82) derived from *jan* which might somehow be connected to *jānu*: The father recognises his child by setting it on his *knee*. However, the laryngeals differ between *jñā* and *jan*. Therefore, one cannot argue with a schwebeablaut (floating vowel gradation) and the two IE full grades $^*ǵenh_1$ and $^*ǵneh_1$. The latter IE word is **not** the basis of *jñā* ← IE root $^*ǵneh_3$. The two roots are historically unrelated although they might have “come close” later.

F.5. Dental stops and nasal

F.5.1. *t*

takṣ 1. class: ***takṣati***/2. class: ***tāṣ-ṭi***/5. class: ***takṣṇôti*** (“to form by cutting”). Originally a reduplicated perfect, see p. 211
takṣ-an m. (“carpenter”)

← IE root $^*tek\acute{}$ (“to produce”) with IE reduplicated root $^*te\text{-}tk\acute{}$ (**SIB** line 6)

→ OGr. B *technical* from *tekhnē* (← $tek\acute{}\text{-}sneh_2$, 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 m./f. /***tanū*** f. (“body”)
tan-tram (“loom, teaching, manual”)

tan (“to stretch”)		
present indicative	*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. 94 for an analysis of the 8. class.

4. 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. 160).

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. 203.

6. *tên-us* or *pêt-us* (the latter from *pat*, “to fall”) are analogically built on zero-grade forms like

   ◇ *sêd-* ← IE **se-sd-* (root *sad*) or

   ◇ *yêt-* ← IE **ye-it-* (root *yat*), see p. 210.

7. Similar to *ti-tyak-ṣ-a-ti* (p. 137), *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-ti* by **SY_N**
   - ◇ shows anusvāra before *s* (***Ns***)

← IE root **ten*

→ OGr. B *tone* (strings of musical instruments 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")
tap-as n. ("heat, asceticism")
tapo-ja ("born from heat") (**CpL*z*** 1. line)

← IE root **tep*

→ Lat. B *tepid*

-tama superlative suffix *(***Lar_SY***)*
ut-tama (see *ud*)

← IE **tm̥H-o*

→ Lat. *in-timus* ("inner")

tam-as n. ("darkness")
tamisram ("darkness") (no **RUKI** because of *r* after *s*)

← IE **temHs*

→ Lat.
   - ◇ *tenebrae* (pl., only), perhaps by a process like *temHs-r* → *temes-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 m. (“spindle”)

← IE root **terk*^{w}

→ Lat. *torquere* with PPP *tortus* (by regular simplification) and B English *torture*, *retort* and B German *torkeln* (from Lat. *torculum* („winepress“))

∼ NHG *drechseln* (“to work the wood lathe”)

-tas ablative suffix, p. 271

← IE **-tos*

→ Lat. *-tus* in *fundi-tus* (“from the bottom”), see s.v. *budhnam*

tij 1. class: ***têjati*** (“to become sharp”)
têj-as n. (“sharpness, heating”)
tig-ma (“sharp”)
tīkṣṇa (“sharp”) (difficult long *ī)*

← IE root **(s)teig* (“to prick, to sting”) (*s* mobile)

→ OGr. B *stigma*

∼ Lat. B *in-stig-ation*

∼ E *thistle* ∼ NHG *Distel*

tiras prop. (“through”)
tiryañc (“sideward, horizontal”), see *añc*

tu (“but”)

← IE **tu*

→ NHG *doch* (“still, however”), where *ch* might well be cognate with OI *ca*

tud 6. class: ***tudati*** (“to strike, to hit”)

← IE root **(s)teud* (*s* mobile)

→ Lat. B *studēre* (“to be thrusting → to strive after”) with B *study*

∼ NHG *stoßen* (“to bump, to thrust”)

tumra (“big, powerful”) ← u.at. OI root *tum* (see pp. 130)

← 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*^{w}*etvor* → *catvāras* (nom. pl. m.) “four”

← IE **k*^{w}*tur-iHo*

tū 2. class: ***tâuti*** (“to be strong, to have authority”), probably not a Narten verb

← IE **teuh*$_2$

→ Lat. B *tutor*, *tutelage*

∼ E *thumb* ∼ NHG *Daumen*

tṛṣ 4. class: ***tṛṣyati*** (“to thirst”)
MI ***tasati/tasyati*** with expected *ṛ* → *a* and *ṣ* → *s*

← IE root **ters* (“be dry”)

→ Lat.

- ◇ Lat. *terra* (“the dry one, the earth”) with B *terrarium*, *territory*, Fr. *sou-terrain*
- ◇ *B toast* ← Lat. *tostus* ← u.at. *torstos* (“dried”)

∼ E *thirst* ∼ NHG *Durst*

tr̥̄ 1. class: ***tarati***/4. class: ***tirati*** (“to cross, to rescue”)
tīrṇa PPP
titīrṣati desiderative
tīram (“bank, shore”)
tīrtha/***tīrtham*** (“ford, passage → ritual bath place”)
trā 2. class: ***trāti***/4. class: ***trā-ya-tê*** (“to save”). Traditionally *trāy-a-tê* is considered a 1. class verb from root *trâi.* But it is better considered a consequential of *tr̥̄*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades **terh*$_2$ and **treh*$_2$ → *trā.*

← IE root **terh*$_2$

→ OGr. *tor-nos* → Lat. *tornus* → B German *Turnus* (“cycle, rotation”), and, via Fr. *tourner*, B English *tour*, *tourist* and B German *Turnier* (“having horses run in a cycle → competition”), whence *Turner* (“young fighter → gymnast”)

∼ Lat. *trāns* (“across, through”) ← pres.P IE **treh*$_2$*nt-s (“crossing”)* with B English *transnational, transgender*, etc.

∼ E to *throw*, E *thread* ∼ NHG *Draht* (“wire”), NHG *drehen* (“to twist”)

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.m. of *tad*

← IE **toi*

→ Lat. *is-tī*

∼ NHG *die*

trayas (nom. pl. m.) (“three”)

← IE **treyes*

→ OGr. B *triad*

∼ Lat. B *triumvirate* (for second part see *vīra*)

∼ E *three* ∼ NHG *drei*

For f. *tisras* see s.v. *svasar* (p. 403).

tras 1. class: ***trasati*** (“to tremble”)
MI ***tasati*** with expected $tr \rightarrow t$

← IE root $^*tres/^*ters$

→ Lat. B *terror*, *terrible*

tvam (“you”)

← IE $^*t$-

→ Lat. $t\bar{u}$

∼ E *thou* ∼ NHG *du*

F.5.2. *d*

dakṣa (“fit, able”) (**SIB**)
dakṣiṇa (“right” [right hand is the able one?], “southern” [facing eastward, the southern direction is on the right])

← IE root $^*dek\acute{s}$

→ Lat. B *dex-terity*

daṇḍa (“stick, punishment”), MI, where r has cerabralised $ṇḍ$.

← IE $^*dendr$-o

→ OGr. *dendron* (“tree”) with B *rhododendron*

dabh 1. class: ***dabhati***/5. class: ***dabhnôti*** (“to hurt, to destroy”)
dabh-ra (“little, deficient”), see p. 131
dah-ra (“small, fine”), see pp. 50
dhip-s-a-ti (pp. 141) desiderative

← IE root $^*dhebh$ (“to destroy”)

dam 4. class: ***dāmyati*** (“to tame”)
dānta PPP, see p. 126
dama (“house”)

← IE root **demH* (“to build, to fit”)

→ OGr. B *despot* ← **dems potis* (“lord of the house”, for second part see *pati*)

∼ Lat. B *dome*, *dominate*, *domesticate*, It. *madonna* (← *mea domina*, “Maria, the mother of Jesus”), Fr. *madame*

∼ Germ.

- ◇ E tame ∼ NHG *zahm*
- ◇ E *timber* ∼ NHG *Zimmer* (“room made from wood”)
- ◇ NHG *ziemlich* (“fairly, tolerably” and, rarely, “properly”)

daś-as n. (“grace, favour”) hinting towards u.at. OI root ***daś***
dāś 1. class: ***dāśati***/2. class: ***dāṣṭi*** (**Cer*D***)/5. class: ***dāśnôti*** (“to venerate, to consecrate”). Originally a reduplicated form, probably perfect (see p. 211)
da-dāś-a either the strong perfect of u.at. *daś* or, alternatively, a second-order perfect of *dāś*
dīkṣ 1. class: ***dīkṣ-a-tê*** (“to initiate, to consecrate”), originally desiderative (see p. 141), which has produced a second-order desiderative ***di-dīkṣ-i-ṣ-a-tê***

← IE root **deḱ* (“to receive, to embellish”)

→ Lat.

- ◇ B *decor*, *dig-nity*
- ◇ Lat. *discere*, a 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*

daśa (“ten”)

← IE **deḱm̥*

→ 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 **deḱm̥t* ("a tenner") in *pañcāśat.* See *śatám.*

dah 1. class: ***dahati*** ("to burn")
kṣā ("to burn"), not well attested consequential (see pp. 82) ← IE **dhg*^{w}*h-eh*$_1$ (**SIB** 7. line)

dah ("to burn")		
present indicative	*dah-a-ti* (1)	*dah-an-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 IE 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 *bhôt-sy-a-ti* (p. 40). 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. 203 to see how Brugmann's law **L*o*** produces long *ā*.

6. Irregularly, this *iṣ*-aorist (pp. 216) 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*^{w}*h*

→ Lat. B *fever*

dā 3. class: ***da-dā-ti*** (“to give”)

dā (“to give”)		
present indicative	*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-deh*$_3$*-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):
   - ◇ *bi-bhr-a-ti* ← **bi-bhr-n̥-ti* or
   - ◇ *da-d-a-ti* ← **de-dh*$_3$*n̥-ti* (**Lar_*CH***: the laryngeal *h*$_3$ leaves no effect before the vowel *n̥*).

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 pres. ind. 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 impf. 3. pers. pl. has ending *us* so that zero grade *a-da-d-us* results. By **Lar_*CH***, the laryngeal *h*$_3$ drops between consonant *d* and vowel *u*. Indeed, impf. 3. pers. pl. of *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*. For similar examples like *ta-sth-âu* from *sthā*, see p. 207.

7. The desiderative (see pp. 136) is formed by reduplication with *i*, zero grade and suffix *s*:

* *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*$_3$

→ OGr. B English *dose* (in German, closer to the original: *Dosis*) also OGr. 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***, **Lar_ *V***)

← IE * *deH*

dāru n. ("wood") (**L *o***)

← IE * *doru*

→ E *tree*, *true*

∼ NHG *Treue* ("loyalty"), *Trost* ("consolation"), *trauen* ("to trust") (p. 76)

div 4. class: ***dīv-y-a-ti*** ("to play") ← * *diHv-ye-ti*
dyū-ta PPP ("gambling, gaming") ← * *dyuH-to* (**Lar_MTh**)

← IE root * *deiHv*

See *siv* and *mīv.*

diś 6. class: ***diśati***("to show")
diś f. ("hint, direction")
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 It., in German

- ◇ *ver-male-deit* ("accursed") and,
- ◇ from the rosary prayer "*ge-bene-deit* ist die Frucht deines Leibes, Jesus".

∼ Germ.

- ◇ NHG *ver-zeihen* ("to forgive") and also, by **VER**: *zeigen* ("to show"), *Zeigefinger* ("index finger")
- ◇ 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 indicative	*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.
3. Although athematic, 3. pers. pl. PRII exhibit *an*. This holds for all verbs in the 2. class (except *śās*, see 177).
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. 46). **AFP** is then followed by non-application of **DA** (similar to 4).
6. The perfect forms are ātmanêpada and hence weak (pp. 203).
7. It is not clear what type of aorist *a-dhikṣ-us* might be.
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

- ◇ English to *feign*
- ◇ German *fingieren* (“to feign”), and
- ◇ German *Finte* (“trick”, via It.)

∼ Lat. without the nasal infix: B English *figure*, *fiction* (backward assimilation)

∼ NHG *Teig* ∼ E *dough* (also in *doughnut* = *donut*)

∼ E *la-dy* ← OE *hlæf-dīge* (“woman who kneads dough → woman whose bread one eats”), where the first part *hlæf* is cognate with E *loaf* ∼ NHG *Laib*.

dīrgha (“long”), z.g. (***rl***, **Lar_SY**)

← IE **dleHgh*

→ Lat. B *longus* with B *long-itude*

∼ E *long* ∼ NHG *lang*

Schwebeablaut connection with *dṛh*?

duh 2. class: ***dôgdhi*** (“to milk”)

duh (“to milk”)		
present indicative	*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.

3. Although athematic, 3. pers. pl. PRII exhibit *an*. This holds for all verbs in the 2. class (except *śās*, see 177).

4. The future, the aorist, and the desiderative reflect failed **DA** in the main syllable, then **BA** and **RUKI** (which explain *k-ṣ*).

5. *a-dhôk* is explained by **CCl** and **AFP** (pp. 46). **AFP** is then followed by non-application of **DA** (similar to 4).

6. The sg. perfect form is in parasmâipada and hence strong (pp. 203). The plural is regularly weak.

7. *du-dhuk-ṣ-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. *tukhē* f. (“hazard, luck”) (**OGR**, **OGR_DA**)

It has been surmised that OI *duh* is back-formation from *duhitar* (“daughter”).

duhitar f. (“daughter”)

← IE **dhug-h*$_2$*ter* (p. 56)

→ 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”) (***rl***)
di-darh-i-ṣa-ti (“he wishes to make firm”) desiderative, irregularly with full grade and “thematic” *i*
dṛḍha (“fixed, firm, tough”) PPP (p. 124)

← IE root **delǵh*

→ Lat. B *in-dulg-ent* (for *in* see p. 69)

Schwebeablaut connection with *dīrgha*?

dṝ 9. class: ***dṛ-ṇā-ti*** (“to break, to tear”), see pp. 93
didīrṣati (“he wishes to tear”) desiderative (p. 143)

← IE root **derH*

→ OGr. 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 heaven”)

← IE **dei*

→ OGr. god *Zeus* (“god of heaven and daylight”)

∼ Lat.

- ◇ B *divine*, *divinity*, Lat. 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: ***dram-a-ti*** ("to run, to move about")
dru 1. class: ***drav-a-ti*** ("to haste")
dr-ā 2. class: ***dr-ā-ti*** ("to run") ← IE **dr-eh*$_2$ (consequential of third group, see pp. 82)

← IE root **der*/**drem*/**drev*

dvā ("two"), see *dvi* below
dvādaśa ("twelve")

← IE **du(v)ō* (***V+SV***)

→ OGr. 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 *pr̥̄* ("to fill")) with B English *double* and B German *doppelt*

∼ Germ.

- ◇ E *two* ∼ NHG *zwei*
- ◇ E *twig* ∼ NHG *Zweig*

dvi (see *dvā* above) used in combinations:

◇ ***dvi-pad*** ("with two feet") and similar in

- OGr. *dí-pous*
- Lat. B *bi-ped* and
- OE *twi-féte*

◇ ***dvi-ja*** ("twice born → Brahmin, bird"), for second part see *jan*

← IE **dvis*/**dvi*

→ OGr. *di* and *dí-pous* (“with two feet”) and OGr. 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 Lat. *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”)

dvāra (“door”) (with *d* instead of *dh* because of *dvā*?), with Vedic ***dvār***

← IE **dhwer*/**dhur*

→ Lat. B *forum*

∼ E *door* ∼ NHG both *Tür* (“door”) and *Tor* (“gate”)

dviṣ 2. class: ***dvêṣṭi*** (“to hate”)

dviṣ (“to hate”)		
present indicative	*dvêṣ-ṭi* (1)	*dviṣ-an-ti* (3)
infinitive	*dvêṣ-ṭum* (1)	
PPP	*dviṣ-ṭa* (1)	
future	*dvêk-ṣy-a-ti* (2)	*dvêk-ṣy-a-n-ti* (2)
imperfect	*a-dvêṭ* (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*, one obtains the present indicative, 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-ṭa* (zero grade) can be explained in very much the same manner.

2. **RUKI** and **SIB** 2. line

3. *a-dvêṭ* is regular:

**e-dveis-t* (full grade)
→ *e-dvês-t* (**DIPH**)
→ *e-dvêṣ-t* (**RUKI**)
→ *a-dvêṣ-ṭ* (**Cer*D***, ***aā***)
→ *a-dvêṭ* (**AFP**)

4. The perfect forms *di-dvêṣ-a* (strong form) and *di-dviṣ-us* (weak form) present no problems (see pp. 203).

← IE root **dveis*

dviṣ may well be related to *dvis*/*dvi* ("twice"). Compare NHG "sich ent*zwei*en" ("to fall out with").

F.5.3. *dh*

dhan 3. class: ***da-dhan-ti*** ("to run, to bear fruit")
dhanya ("rich")

← IE root **dhenh*$_2$

→ OGr. B *eu-thanasia* (see *su*), *thanatology* (with euphemism "to run away → to die")

∼ Lat. B *foun-tain*

dham 1. class: ***dham-a-ti*** ("to exhale")
dhmā ("to exhale"). Consequential of *dham*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades **dhemH* and **dhmeH* → *dhmā*.
dhmā-kāra ("blacksmith")

← IE root **dhemH*

dhā 3. class: ***da-dhā-ti*** ("to set, to put")
dhā-tar m. ("founder, preserver, fate"), see p. 107
śrad-dhā ("belief, trust"), see s.v. *śraddhā*
sva-dhā ("custom, home") ← *sva* + *dhā*
dvi-dhā ("twofold")
vi-dhā ("to distribute, to determine") with

- ◇ *vi-dhi* m. ("regulation, method, rite")
- ◇ *vi-dhêya* ("to be determined"), gerundive
- ◇ *vi-dhêyam* ("duty, obligation")

dhā ("to set, to put")		
present indicative	*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-n̥-ti* or *da-d-a-ti* ← **de-dh*$_3$*n̥-ti* (**Lar_*CH***: the laryngeal drops between consonant *d* and vowel *n̥*).

3. The infinitive and the future show expected full grade.

4. For the PPP *hi-ta*, remember
   - ◇ occasionally, word initial *dh* → *h* (p. 50) and

◇ **Lar_ _ *V*** between consonants

5. In imperfect pl., see 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*, just as *ta-sth-âu* from *sthā* (see p. 207).

7. The desiderative (see pp. 136) is formed by reduplication with *i*, zero grade and suffix *s*:

   * *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

   An also 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. ind. 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". Instead, 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**)
   → u.at. *da-d-dhê* (**DA**)

   However, proportional analogy produced

dā	with 3. pers. sg. pres. ind. ātm.	*dat-tê* ← * *dad-tê*
just as		
dhā	with 3. pers. sg. pres. ind. ātm.	*dhat-tê*

Alternatively, one may surmise that a laryngeal somehow prevented **ASh** to affect the *tê*-ending.

← IE root **dheh*$_1$ ("to put")

→ OGr. *ti-thē-mi* (**OGR**, **OGR_DA**)

- ◇ with *k*-extension (archaic) B *apothecary* (B German *Apotheke*), B German *Bibliothek*, *Theke* ("counter, bar")
- ◇ with other extensions *thesis* and *theme*
- ◇ OGr. *ēthos* in B *ethics* (**OGR_DA** twice, **OGR_DA**) ← IE **s(v)edhus* (see s.v. *svadhā)*

∼ Lat.

- ◇ *facere* ("to make, to do") with B *af-fect*, *perfect*, *efficient*, *deficit*, *fak-simile*, *dif-ficult*, *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*) with B *division*, *dividend*
- ◇ B *multi-fa-rious*, compare OI *dvi-dhā*

∼ Fr. *façon*, hence English *fashion*

∼ Germ.

- ◇ E to *do* ∼ NHG *tun*
- ◇ E *deed* ∼ NHG *Tat*
- ◇ ending E *-dom* ∼ NHG *-tum* in *Christen-dom*/*Christen-tum*

See also *dhê*.

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

→ OGr. B *thyme*

∼ Lat. B *fume* (**LAT_*f***), *per-fume*, Fr. *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”)/Ved. ***dhar-man*** m. (“upholder”)

← IE root **dher* with *m*-extension

→ OGr. *thr-onos* (“throne”) with B *throne*. A chair or throne holds and keeps the person sitting on it. Compare

◇ OGr. *thr-ono* (“throne”) ← IE **dhr-ono*

◇ OGr. *khr-ono* ← IE **ghr-ono* with OGr. *kr-ono* (“cutting”) ← IE **kr-ono* (s.v. *carman*)

See unpublished paper by Kulikov and see p. 131.

∼ Lat. B *firm* (**LAT_f**), to *con-firm*, *firm-ament*

dhṛṣ 5. class: ***dhṛṣṇôti*** (“to dare”)

← IE root **dhers*

→ E to *dare* (but **not** NHG *trauen*, see *dāru*)

dhê 1. class: ***dhayati*** (“to suck, to slurp”)
dhênā, ***dhênu*** f. (“milk cow”)
dhātrī (“nurse”), but see *dhātar* s.v. *dhā*
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*

◇ B *fe-minine*

◇ *fi-lius* (“son”)

◇ B *fe-tus*

◇ B *fe-llatio*

dhyā 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)
Traditionally *dhyāy-a-ti* is considered a 1. class verb from root *dhyâi.* But it is better considered a consequential of *dhī*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades $^*dheiH$ and $^*dhyeH$ → *dhyā*.

dhru-ti f. ("leading astray, corruption, deception")

← IE root $^*dhreu$

→ Lat. B *frau-d (***LAT_*f***)*

F.5.4. *n*

na ("not, no")

← IE $^*ne$, full grade of IE $^*\underset{\circ}{n}$ (see alpha privativum *a*)

→ Lat. *ne* in B *ne-gative*, to *ne-gate*

→ Lat. *neque* ∼ OI *na ca* ("and not") ← IE $^*nek^we$ (see *ca*)

∼ NHG *nie* ("never") ← IE $^*ne + i$ (deictic particle, see *iha*)

naktam ("at night")

← IE $^*nok^wt$

→ Lat. B *noct-urnal*

∼ E *night* ∼ NHG *Nacht*

nagna ("naked, bare")

← IE $^*no\text{-}g^w\text{-}no$

→ difficult: OGr. *gymnos* with OGr. B *gymnastics*

∼ with a dental suffix

- ◇ Lat. B *nude*
- ◇ E *naked* ∼ NHG *nackt*

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 *cht* for Germ. *ft*, as in Dutch *gracht* s.v. *grabh)*

It is thought that IE **ne-pot* might mean “not master → minor” (see *pati*).

nabh 1. class: ***nabhatê*** (“to burst”)
nabh-as n. (“sky, mist”)

← IE root **nebh*

→ Lat. *nebula* with B *nebulous*

∼ NHG *Nebel* (“fog”)

nabhya (“nave”)

← IE **h₃nebh*

→ Lat. B *umbilicus*

∼ E *nave* ∼ NHG *Nabel*

nara (“man”)
nārāyaṇa (epithet for Viṣṇu, “going to a man, going to something human”?) with second part *ayana* (s.v. *i*)
sūnara (“to have good men → powerful”) ← IE **h₁su-h₂nero* (**Lar__*V***), (for first part see *su*).

← IE **h₂ner* (“be strong, possessing vital powers”)

→ OGr. *anēr*, *andros* with B *andrology* (*d* inserted to ease pronounciation).

∼ Lat. PN *Ner-ō*

nava ("new")

← IE **nevo*

→ OGr. B *neo-liberal*, *Neolithic* (**OGR**)

∼ Lat. *novus* (**LAT__*V***) with B *nov-ice*, *re-nov-ate*, *in-nov-ate*, *nov-elty*

∼ E *new* ∼ NHG *neu*

nava ("nine")

← IE **nevn̥*

→ 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 perish")
naṃṣ-ṭum, p. 112 (***Ns***, **Cer*D***)
naṣṭa PPP (**Cer*D***)

← IE root **h*$_2$*ne(n)ḱ*

→ OGr. 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 s.v. *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 to *nourish*

nāsā ("nose")

← IE **Hneh*$_2$ *-s*

→ E *nose* ∼ NHG *Nase*

nas enclitic gen./dat./acc. (“us, our”)

← IE **nas*

→ Lat. B *paternoster* (“lift” where the cabins are like the pearls on a rosary)

∼ Germ. E *us* ∼ NHG *uns* ← IE **n̥s* (**IE_SY_*N***, **NHG_E**)

nāga (“snake”)

← IE root **(s)nēgo/(s)nōgo* (*s* mobile)

→ E *snake*

nāman n. (“name”) (**L*o***), see pp. 247

← IE **nomn̥*

→ OGr. *o-nomastic* with difficult word-initial *o*

∼ Lat. *nōmen* (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*
ny-ag-rôdha-pāda-pa (“fig tree”) ←

◇ *nyac*

◇ + *rôdha* (“climbing, growing”, but here *dh* instead of *h*, see *rudh* 1. class)

◇ + *pāda* (“foot”, see *pad*)

◇ + *pa* (“drinking”, see *pā*)

nyak kṛ (“to humiliate”)
nyag bhū (“to debase oneself”)

nī 1. class: ***nayati*** (“to lead”)
sênā-nī-s m. (“army general”)
grāma-ṇī-s m. (“village leader”)
agra-ṇī-s m. (“leader”)

← IE root **neyH*

The three agent nouns ***sênā-nī-s*** 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, the *marut* endings are obtained in many cases:

sênānīs 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 short *i* is seen in 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 instr. 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*, which would presumably turn into *sênā-nī*.

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*** 2. line)

nu 1. class: ***nâu-ti*** ("to praise")

← IE root **neHu*

→ Lat. *nuere* ("to nod") with B *innuendo*

nu belongs to the class of Narten verbs. See pp. 178 for a suggestion of how to explain *nâu-ti* versus *nu-mas*.

nūnam ("now")

← IE **nu*/**nū*

→ E *now* ∼ NHG *nun*

nâu f. ("ship")

← IE **neh*$_2$*-u*

→ OGr. *nautēs* m. ("seefarer"), OGr. B *nautical*, *Nautilus* (fictitious ship in novels by Jules Verne)

∼ Lat. B *nav-ig-ation* (for second part, see *aj*)

ny-ā-ya ("rule, norm", one of the six philosophical systems)
naiy-ā-yi-ka ("relating to *nyāya* philosophy"). See p. 104 and see **Lg__*Ry*** on p. 25.

F.6. Labial stops and nasal

F.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”)
pak-va (“cooked, ripe”) is difficult PPP

← IE root **pek*^{w}

→ Lat.

- ◇ *coquus/cocus* (“cook”) (assimilation *p..k*^{w} → *qu..qu*, similar to *quinque*, s.v. *pañca*) with B English *cook* ∼ NHG *Koch* (**NHG_C**)
- ◇ *prae-cox* (“premature”), B to con-*coc*-t
- ◇ B English *kitchen* ∼ NHG *Küche*

pañca (“five”)
B ***punch*** (“drink with 5 components”)

← IE **penk*^{w}*e* (← *penk-k*^{w}*e* (“and five”), see *pańk-ti* and *ca*)

→ OGr. B *pentagon*

∼ Lat. *quīnque* (assimilation *p..k*^{w} → *c..qu*, similar to coquus, s.v. *pac*) with B *quint-essence*, *quintet*

∼ E *five* (**NHG_E**) ∼ NHG *fünf*

pañcāśat (“fifty”)

← IE **penk*^{w}*e-dḱm̥t* (**CpL*dḱ***)

← *penk*^{w}*e* (“five”) + *dḱm̥t* (“tenners”), see *pañca* and *daśa*.

Compare *viṃśati*.

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*$_2$. In Germany, 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”)
gô-pati m. (“lord of cows, ruler, bull”), for first part, see *gup* s.v. *gô*

← IE **poti*

→ OGr. B *despot* ← **dems poti* (“lord of the house”, for first part see *dam*)

∼ Lat. *pot-esse* and B *potent*, *potential*

See *na-ptar*. See also

◇ *pṛthvī-pati* s.v. *pṛthu*

◇ *bṛhas-pati* s.v. *bṛh*

◇ *vanas-pati* s.v. *vanam*

pad 4. class: ***pad-ya-atê*** (“to go”)
pad m. (“foot”)
pāda m. (“foot, chapter, verse”) with

◇ ***pāda-pa*** (“foot drinker → tree”), for second part, see *pā* (“to drink”)

◇ ***pāda-ja*** (“*śūdra*”). In the *puruṣa* hymn (*puruṣasūkta*, see *sūkta* s.v. *vac*) from the Ṛgveda, the four social classes are said to derive from the Man (*puruṣa*), who is split into four different parts. The brahmin (*brāhmaṇa* s.v. *bṛh*) stems from the mouth, the ruler (*rājanya* s.v. *raji*) from the arms, the freeman (*vaiśya* s.v. *viś*) from the thighs, and the servant (*śūdra*) from the feet. For the second part, see *jan* (“to be born”) and pp. 145.

◇ ***pāda-rajas*** (“dust at the feet”)

← IE **pod*/**ped* (two dialectal variants)

→ OGr. B (with *o*-grade) *anti-pode*, *podium* (with Lat. ending), *polyp* ← OGr. *poly-pous* (for first part see *pṝ*)

∼ Lat. B (with *e*-grade) *ped-al*, *pedi-curist* (for second part see *sicher*, p. 75), *pedestrian*, *centi-pede* (for first part see *śatám*), *ex-ped-ition*, *im-ped-iment*

∼ E *foot* ∼ NHG *Fuß*

panth m. ("path") with declension

panth-an/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-ṣu* (4)

1. On the basis of the stem *panth-an*, 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***. They are formed like *rāj-an*.

2. Nom. and voc. sg. *panth-ās* is difficult. While *ā* can be explained by compensatory lengthening, one would expect *panth-ā-n* or *panth-ā*.

3. On the basis of the stem *panth*, by **SY__*N***, one obtains the weak forms before vowel-initial endings as seen in instr. sg. *path-ā*.

4. *path-i-bhis* may be explained similar to *sthita*, where the laryngeal is responsible for both *i* and the aspiration. Originally, one might have a form like *pat-i-bhis*, where the laryngeal between consonants would have produced *i*. Then, levelling would 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. 339)

not related are E *path* ∼ NHG *Pfad*

pari ("around")

← IE **peri*

→ OGr. B *perimeter*, *periphery* (see *bhṛ*)

∼ Lat. *per* as in *pay-per-view*, *per se*

pard 1. class: ***pardatê*** (“to fart”)

← IE **perd*

→ E to *fart* ∼ NHG *furzen*

paśu m. (“cattle”)

← IE **péḱu*

→ Lat.

- ◇ *pecus* (“cattle”)
- ◇ *pecūnia* (“wealth”) with B *pecuniary*
- ◇ *pecūlium* (“money in possession”) with B *peculiar*

∼ E *fee* ∼ NHG *Vieh* (“cattle”)

paś-ya-ti with OI root *dṛś*

← IE root **(s)péḱ* (*s* mobile)

→ OGr. 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”)
gô-pā m. (“herdsman, cow protector”)

← IE root **peh*$_2$

→ Lat. *pāstor* (“shepherd”) with B *pastor*

pā 1. class: ***pibati*** (“to drink”)

pā (“to drink”)		
present indicative	*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

   $^*pi\text{-}ph_3\text{-}eti$ (reduplication with *i* and zero grade)
   → $^*pi\text{-}b\text{-}eti$ (**Lar__*CH*:** h_3 makes *p* voiced)
   → *pi-b-ati*

   Similarly, observe the imperfect *a-pi-b-a-t*.

2. The long-$\bar{a}$ forms *pā-tum* and *pā-sy-a-ti* are both regular full-grades 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 D.2, pp. 203.

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 $^*peh_3/^*peh_3i$

→ OGr. B *symposium* (with Lat. ending)

∼ Lat.

◇ B (magic) *potion*

◇ B German *Pokal* (“cup, trophy”)

pāśa (“snare, noose”)

← IE **peh₂ḱ*

→ Lat. *pax* (“peace”) and B *pact*

∼ NHG *fügen* (“to join”), *Fuge* (“joint, seam”), *be-fug-t* (“authorised”) (**VER**)

pika (“Indian cuckoo”) (***sP(h)***)

← IE **spiko*

→ NHG *Specht* (“woodpecker”)

pitar m. (“father”)
pitṛ-vya (“father’s brother”)

← IE **ph₂tḗr*

→ OGr. *patḗr* with B *patriot*, *patriarch* (clear indication of h_2, see pp. 20)

∼ Lat. B English *patron*, *patrician*, German *Patrone* (“cartridge”)

∼ E *father* ∼ NHG *Vater* (**VER**)

Connection with *pā* (“to protect”) unclear.

piś 6. class: ***piṃś-a-ti*** (“to adorn”)

← IE root **pei(n)ḱ*

→ Lat. B *pig-ment*, *pic-ture*

pī (“to become fat”)
pyā (“to swell”). Consequential of *pī*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades **peiH* and **pyeH* → *pyā*.
pī-van (“swelling, fat”) (z.g.)
pay-as n. (“milk”) (f.g.), see p. 106

← IE root **peiH*

pīḍ 1. class: ***pīḍatê*** (“to pinch, to oppress”)
Either from OI root *piṣ* ← IE **pis* (s.v. *piṣ*, 7. class) with *d*-extension
or from *pi-sd* ← *pi* (preposition) + *sd* (zero grade of *sad*)
In any case:

pisd-etoi
→ *pizd-etoi* (***sz*** before voiced stop)
→ *piẓd-etoi* (**RUKI**)
→ *pi-ẓḍ-atê* (**Cer*D***)
→ *pīḍ-atê* (**CpL*z*** 2. line)

Compare *sīd-ati* (p. 85) and *nīḍa* (dictionary).

putra (“son”) (***rl***), uncertain
pâutra (“related to one’s son, grandson”)

← IE **pu-tló*

→ OGr. B *pe-dagogue*

∼ Lat. B *puerile*

∼ E *foal* ∼ NHG *Fohlen*

pumant (“male, man”)

← IE difficult

→ Lat. B *puberty*

puṣ 1. class ***poṣ-a-ti*** (“to thrive, to florish”)

← IE **peus*

→ Lat. B *pustule*

pū 9. class ***pu-nā-ti*** (“to clean”), see pp. 93

← IE root **peuH*

→ Lat. *pūrus* with B *pure*

pūrva (“front, former”)

← IE *$p\underset{\circ}{r}vo$/*$p\underset{\circ}{r}mo$

→ 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*

→ OGr. B *pore* and *porous* (both via Latin), PN *Bos-porus* (“ford of the cow”)

∼ Lat. B to *deport*, to *export*, to *report*, *port*,

∼ Germ.

◇ without dental extension:

- NHG *fahren* (“to drive”)/*Fuhre* (“load”)/*führen* (“to lead”)
- E to *fare*/*farewell*

◇ with dental extension:

- E *ford* ∼ NHG *Furt*
- towns E *Oxford* (England) ∼ NHG *Ochsenfurt* (near Würzburg, Germany)

pṛt (“to battle”)
pṛt f. (“battle, contest”)

← IE root **per-t* (“to press”)

→ Lat. B to *express*, to *compress*, *impression*

pṛthu (“wide, large”) (**Lar_*CH***)
pṛthvī/***pṛthivī*** (“earth, land”), also in

◇ ***pṛthvī-pati*** m. (“king”)

◇ ***pṛthvī-talam*** (“earth, ground”)

← IE *$p\underset{\circ}{l}th_2v$-$ih_2$

→ OGr. (via Lat.) B *plate*

pr̥̄ 9. class: ***pr̥ṇāti*** (“to fill, to fulfill”) (***rl***)
pūrṇa PPP (p. 127) ← IE **pl̥h₁-no* (**Lar_SY**)
pur f. (“plentitude”) with inst. pl. **pūrbhis**
puru (“much, plenty”) (**Lar_*CH***) ← IE **plh₁-v*
prā (“to fill”). Consequential of *pr̥̄*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades **pelh₁* and **pleh₁* → *prā* (***rl***).

← IE root **pelh₁*

→ OGr. 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 *plus*

∼ Germ.

- ◇ E *full* ∼ NHG *voll*
- ◇ E *folk*/*folklore* ∼ NHG *Volk* (“people”)

plu 1. class: ***plav-a-tê*** (“to swim, to float”)
plava (“floating, boat”) (***V+SV***)

← IE root **plh₁ev* (*v*-extension from **pelh₁*, s.v. *pr̥̄*)

→ Lat. B *pluv-ial* (“rainy”)

See *klôman*.

pra (“before, in front of”), without **L*o*** because *o* is word-final here
prāc (“directed forward, eastern”), see *añc*
prāk (“in front, in the east”)
prātar (“early in the morning”)
pra-bhu m. (“lord, master”), see p. 147

← IE **pro*

→ OGr. B *pro-biotic*, *pro-phecy* (see *bhan*), *pro-phylactic*

∼ Lat. B *pro-verb*, *pro-test*, *pro-duct*

∼ NHG *ver* as in *ver-laufen* ("to go astray")

pracch 6. class: ***pṛcchati*** ("to ask")
On the one hand:

◇ full grade nouns ***praś-na*** ("question") and, with **Cer*D***, ***praṣ-ṭar*** ("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 ***pṛcchati*** *(***CCl***, **SIB***)*

← IE zero grade **pr̥̊k-sḱ*

→ NHG *er-forsch-en* ("to research") (**IE_SY_*L***)

Besides, one has full grade ***pracchā*** ("inquiry") ← IE full grade **preḱ-sḱ-*. Compare *mūrchā* s.v. *mṝ*.

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").

← IE *preti*

→ Lat. *pretium* ("reward, prize") with B *precious*

praś-na ("basket-work, a plaited basket") (***rl***)

← IE root **pleḱ*

→ Lat. B *com-plex*, *im-plic-ation*

∼ NHG *flechten* ("to weave, to plait")

See also s.v. *pracch.*

prī 9. class: ***prīṇāti*** ("to please, to love")
priya ("beloved, dear") (***V+SV***)

← 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" as in "liver and spleen"), difficult

← IE **spleǵh*

→ OGr. B *spleen*

pluṣi m. ("insect")

← IE **plus*

→ E *flea* ∼ NHG *Floh*

F.6.2. *ph*

phêna ("foam") (***sP(h)***)

← IE **(s)poi* (*s* mobile)

→ Lat. B *spume*

∼ E to *foam*

F.6.3. *b*

bandh 9. class: ***badh-nā-ti*** ("to bind")
bandh-u m. ("relative")

bandh (“to bind”)		
present indicative	*badh-nā-ti* (2)	*badh-n-an-ti* (2)
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 forms like infinitive *bad-dhum*, which should be in full grade. By **SY_N**, the PPP shows correct zero grade. As in *bud-dha* from *budh* (“to be awake”), witness the effect of both aspiration laws **DA** and **ASh**.

2. *badh-nā-ti* is modelled on verbs like *pu-nā-ti* (“he cleans”), see pp. 93.

3. Similar to

   ◇ *bhôt-sy-a-ti* ← IE **bheudh-s* from *budh* (“to be awake”) 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. Irregularly, the desiderative employs the full grade.

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. 203).

← IE root **bhendh*

→ E to *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*

balam (“strength, power”)
bāla (“strong one → boy”)

← IE **belo*

→ Lat. B *de-bil-ity*

bah-u (“much, many”) (z.g., **DA**, **PPal**)

← IE **bhenǵh* (“dense”)

→ OGr. *pakhus* (“thick, plumb”) (**OGR** 1. line, **OGR_DA**) 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”). After all, the arm is a forelimb.

budh 1. class: ***bôdhati*** (“to be awake”)

budh (“to be awake”)		
present indicative	*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-iṣ-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 shows OI *ô* (**DIPH**) and Grassmann's **DA**.

2. The infinitive is regularly in full grade. The *i* does 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 **dhugh-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* remains (no **DA** possible).

5. The perfect forms are ātmanêpada and hence weak (pp. 203).

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 D.3, pp. 213.

7. Desiderative *bu-budh-iṣ-a-ti* shows *i* borrowed from sêṭ roots.

← IE root **bheudh*

→ Lat. *fidēs*, *fideī* ("trust, credit, belief") in
   - ◇ "*defensor fideī*" ("defender of faith"), a title for the English kings
   - ◇ B *fidelity*, *dif-fid-ent*, to *con-fide*, to *de-fy*, *faith*

∼ E to *bid* ∼ NHG *bieten* ("to bid, to offer")

budh-nam ("depth, ground") (**DA**)

← IE **bhudh-no*

→ Lat. *fundament* (**LAT_f**), *fundi-tas* ("from the bottom", see s.v. *tas*), and *pro-found*, where *n* and *d* are interchanged (as in Lat. *unda*, see *udan* s.v. *ud*)

∼ E *bottom* ∼ NHG *Boden* ("ground"), where both E *tt* and NHG *d* are unclear

Perhaps, *budhnam* is related to *budh*.

bṛh 6. class: ***bṛh-a-ti*** ("to grow, to increase") (**DA**)
bṛh-as-pati m. ("lord of the prayer"), where *bṛhas* is gen. sg. of a root noun ***bṛh***, see *vanam*

bṛh-ant pres.P (“thick, large, abundant”)
pari-bṛḍha (“firm, dense”) PPP (compare p. 124)
brah-man n. (“the absolute”)/***brah-man*** m. (“the creator god”) (from u.at. *barh-man* by a sound law similar to **MET_*rSP***?)
brāhmaṇa m. (“priest, brahmin”)

← IE root **bherh*

→ Lat. B *for-titude* (**LAT_*f***)

F.6.4. *bh*

bhaj 1. class: ***bhajati*** (“to divide, to allot”)
bhag-a (“wealth, happiness”)
bhag-inī (“sister”)
bhak-ti f. (“allotment, division, love, devotion”)
bhāg-a (“part”)
bhikṣ 1. class: ***bhikṣ-a-tê*** (“to wish to share, to beg”), originally a desiderative (p. 140)

← IE root **bheg*

→ OGr. B bacterio-*phage*

∼ NHG *Backe* (“eater → cheek”)

bhan 1. class: ***bhanati*** (“to speak”), later form *bhaṇ*

← IE root **bheh*$_2$/**bhen*

→ OGr. B (**OGR**)

- ◇ *blas-phemy*, where the origin of the first part is dubious, but has lead to Fr. *blâmer*, whence German *blamieren* (“to disgrace oneself”)
- ◇ *eu-phemism*, where OGr. *eu* ∼ OI *su*
- ◇ *a-phasia* with alpha privativum (p. 69)
- ◇ *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*. Via Fr.: English *fairy*, German *Fee* (“fairy”) and *ge-feit* (“immune”)
- ◇ *fable*, *fabulous*
- ◇ *profession*, *professor*
- ◇ *in-fant*, *in-fantile* (“who does not speak → baby”, semantically compare *puerile* s.v. *putra*), *infantryman* (“child → boy → foot soldier”)

∼ Germ.

→ E *ban* ∼ NHG *Bann*

∼ Fr. *banal*

∼ It. *bandito*

See *bhā*.

bhas 3. class: ***ba-bhas-ti*** (“chew”) with 3. pers. pl. ***ba-ps-a-ti*** (nearly parallel to *bi-bhr-a-ti* from *bhṛ*)
psā 2. class: ***psāti*** (“to devour”) ← IE **bhs-eH* (consequential, see pp. 82)

← IE root **bhes*

bharg-as n. (“radiance, lustre”) (***rl***)

← 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 **bh-eH(s)*

→ OGr. B *phenomenon*, *photo*, *phos-phor* (“which carries light”, for second part see *bhṛ*)

∼ NHG *bohnern* (“to make shiny → to polish (the floor)”)

Although semantically a difficult connection, *bhā* might be a (third-group) consequential of *bhan* (see pp. 82).

bhid 7. class: ***bhi-na-t-ti*** (“to split”)
bhin-na PPP (p. 118)
bhid-ra (“thunderbolt”), see pp. 130

← IE root **bheid*

→ Lat. B *fissure*, *fission* (**LAT_*f***, **LAT_*DD***)

∼ Germ.

- ◇ E *bite* ∼ NHG *Biss*
- ◇ E *bitter* ∼ NHG *bitter* (p. 76)

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*** (“to enjoy, to consume”) (**SPal**)
bhôg-a (“enjoyment, suffering”)
bhôg-in m. (“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*** (“to bend, to make crooked”)
bhôg-a (“expanded hood of a snake, snake”)
bhôg-in m. (“snake”)

← IE root **bheug*

→ OGr. 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 to *bow* ∼ NHG *biegen* (“to bend”)
- ◇ E *elbow* ∼ NHG *Ellenbogen*

bhū 1. class: ***bhavati*** (“to be”)
punar-bhū f. (“remarried widow”)
bhū f. (“earth”)
pra-bhu m. (“lord, master”), see p. 147
a-bhva (“not being (good) → monstrous, powerful”) ← IE *$\underset{\circ}{n}$*bhv-o*, see p. 147

bhū (“to be”)		
present indicative	*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-n-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 (**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 produces long *ū* in zero grade.
4. **DA**, see p. 138.
5. *ba-bhūv-a* is irregular. The “correct” form is **bu-bhav-a* ← IE **bhu-bhovH-e*, with reduplication vowel *u* and with full grade. Note that **L *o*** would not apply because the syllable is not open (two consonants *v* and *H*).

← IE root **bheuH*

→ OGr. B *physics*

∼ Lat.

- ◇ B *future* (**LAT_ *f***), *super-b*, *fiat* money
- ◇ *probus* (“excellent, good”) ∼ OI *prabhu* (p. 147)

∼ Germ.

- ◇ E to *be* ∼ NHG (ich) *bin*/ (du) *bist* (“I am/ you are”)

- ◇ NHG *bauen* (“to build), *Bauer* (“farmer)

bhūrja (“birch”) (**PPal**)

← IE **bherǵH*

→ E *birch* ∼ NHG *Birke*

bhūṣ 1. class: ***bhūṣati*** (“to strive after”), perhaps desiderative of *bhū* (p. 138) without reduplication?

bhṛ 1. class: ***bhar-a-ti***/3. class: ***bi-bhar-ti*** (“to carry”)

← IE root **bher*

→ OGr. B

- ◇ *peri-phery*, where first part is cognate with OI *pari*
- ◇ *meta-phor*
- ◇ PN *Christo-pher* (with Lat. ending *Christo-phorus*)
- ◇ *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 to *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 root **bhers*

→ E to *burst* ∼ NHG *bersten*

bhrātar m. (“brother”)

← IE **bhrā́ter*/**bhr-eh*$_2$*-ter (see* IE **bher* s.v. *bhṛ)*

→ Lat. B to *fraternise*, *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*$_2$”.

bhrū (“eyebrow”)

← IE root **bhrevh*$_1$ (or similarly)

→ Lat. *frōns* (compare **CpL*s***), *frontis* (**LAT__*f***) with B *front*, to *con-front*

∼ E *eyebrow* ∼ NHG *Augenbraue*

F.6.5. *m*

majj 6. class: ***majjati*** (“to sink into”)

← IE root **mesg*

→ Lat. B to *merge* (**LAT__*sr***)

madhu n. (“sweet drink, honey”)

← IE **medhu*

→ OGr. B *methane*

∼ E *mead* ∼ NHG *Met*

madhya (“middle”)

← IE **medhyo*

→ OGr. B *Mesopotamia* (“between two rivers”)

∼ Lat. B *medium*, *media*, *medi-ocre* (second part s.v. *aśri*)

∼ E *mid*, *middle* ∼ NHG *Mitte*, but **not** NHG *mit* (“with”)

man 4. class: ***manyatê*** (“to think”)
man-as n. (“mind”)
mnā 2. class: ***mnāti*** (“to mention”) ← IE **mn-eh₂*. Consequential of *man*, see pp. 82 and 70
ma-ti f. (“thought, mind”) (**SY_*N***)
a-mati f. (“not knowing, poverty”). Someone is considered poor because he is not thought of, or not borne in mind, by human or divine benefactors.
a-mnas adv. (“without thinking → immediately, unawares”)

← 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*

mahi (“great”), used in Vedic as an adj. in nom. and acc. sg. n.
mahant (“great”), pp. 238

← IE **meǵh₂* (p. 56)

→ OGr. 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.

mā 3. class: ***mi-mā-ti*** (“to measure”)
pra-māṇam (“proof”)
anu-mānam (“inference”)

← IE root *meh_1

→ OGr. B English *me-ter* (via French *mètre*), *geometry*

∼ Lat. B *meas-ure*, *di-mens-ion*, *im-mense* (“unmeasurable”, see p. 69)

∼ NHG *l*-extension *ma-l* (“from time to time”), *Ma-l* (“moment”) ← OHG *māl* ← IE *meh_1-*lo*

See *māṣ*.

māṃsa (“meat”) (***Ns***)

← IE *$meh_1(n)s$ (“body part”)

→ Lat. B *member*

mās 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 forms for the two meanings:

◇ E *moon* ∼ NHG *Mond*

◇ E *month* ∼ NHG *Monat*

mātar f. (“mother”)

← IE *$meh_2t\acute{e}r$

→ Lat. B *maternity*

∼ E *mother* ∼ NHG *Mutter*

As in *pitar*, the IE accent follows the *t* so that **VER** applies.

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*

miś ("to mix")
miś-ra ("mixing, diverse"), see pp. 130
miś-la ("mixing, diverse") (***rl***)
mi-mik-ṣ-u ("desiring for mixing") (**SIB** line 3)
On the one hand, the above words

← IE root **meiḱ*

On the other hand, with *sḱ* suffix, *micch* as in pres.P *micchamāna* (**SIB** thirdlast line)

← IE zero grade **miḱ-sḱ* (**SIB**)

→ Lat. *misc-ere* ("to mix, to blend") with B *to mix*, *mixture, pro-misc-uity,* B 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**, thirdlast line.

mih 1. class: ***mêh-a-ti*** ("to urinate") (**SPal**)
mih f. ("mist, haze, fog")
mêgh-a ("cloud")

← ie. root **meigh*

Compare *mīḍha.*

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*** 2. line)

mīḍha might be a PPP of *mih* (“to urinate”). One would regularly have

◇ IE **miǵh-to* → *miz-dho* → *mīḍha* just as

◇ IE **liǵh-to* → *liz-dho* → *līḍha* (p. 123)

Perhaps, rain as a price for sacrifice? However, above the IE root **meigh* is postulated for *mih*, which would produce the PPP u.at. *mig-dha.*

mīv 1. class: ***mīvati*** (“to move”) ← **mih*$_1$ *v-e-ti*
mūta in ***kāma-mūta*** (“strongly affected by love”) from u.at. *myūta* ← **myuh*$_1$*-to* (**Lar_MTh**)

← IE root **meih*$_1$ *v*

→ Lat. B to *move*, *move*ment, *mobility*

See *div* and *siv.*

mūṣa (“mouse”)

← IE **muHs*

→ E *mouse* ∼ NHG *Maus*

mṛ 1. class: ***marati***/4. class: ***mri-ya-tê*** (“to die”) (p. 23)

← IE root **mer*

→ OGr. B *a-mbr-osia* with OGr. alpha privativum *a* (p. 69). *b* has been introduced in order to facilitate pronounciation.

∼ Lat. B *mor-tal*, *mor-bid*, to *amortise* (“to make dead → to redeem a loan”)

∼ E *murder* ∼ NHG *Mord*

See *mār-ay-a-ti* on p. 36. See *mṝ* with laryngeal extention.

mṛd 1. class: ***mardati***/9. class: ***mṛdnāti*** (“to press, to destroy”) (***rl***)
mṛd f. (“mud, clay”)
mṛdu (“soft, mild”)

← IE root **meld*

→ Lat. B German

- ◇ *a-Moll* (“A minor”)
- ◇ *mollig* (“chubby”)

mr̄ 9. class: ***mṛṇāti*** (“to bruise, to smash”)
mlā (“to wither”). Consequential of *mr̄*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades **merh₂* and **mreh₂* → *mlā* (***rl***).
On the one hand, ***mṛṇāti*** ← IE **mr̥-ne-h₂-ti* (**Lar_ *V***)

← IE root **mer-h₂* (*h₂*-extension of **mer*, see *mṛ*)

→ Lat.

- ◇ *mora* (“delay, lapse of time”), see law of morae on p. 58
- ◇ *mor-tārium* (“bowl, mortar”) with B English *mor-tar*, German *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*).

F.7. Semivowels

F.7.1. *y*

yaj 1. class: ***yajati*** (“to sacrifice”)
iṣ-ṭa PPP (**RUKI**)
iṣ-ṭi f. (“offering”)
ṛtv-ij m. (“offering at the right time → priest”) ← *ṛtu* (“time of year, right time”, see *ar*) + z.g. of *yaj*

← IE root **Hyeǵ*

→ OGr. B *hag-iography*

yam 1. class: ***yacchati*** (“to hold, to restrain”)
On the one hand:

◇ full grade noun ***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. 82

← IE **h₁i-eh₂*

→ Lat. *iānus* (“doorway”, name of a god) with B *janu-ary*

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, zero-grade ***yu-ccha-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 (“soup, broth”) ← IE **yHu-Hs-o*

← IE root **yeHu*

→ OGr. B en-*zy*-me

yu belongs to the class of Narten verbs. See pp. 178 for a suggestion of how to explain *yâu-ti* versus *yu-mas*.

yuj 7. class: ***yu-na-k-ti*** (“to yoke”)
yugam (“yoke”)
yôga (“yoking”)
a-yôg-ū (“girl without brothers (and sisters)”), see alpha privativum on p. 69

← IE root **yeug*

→ Lat. B *junction*, *adjunct*, *conjugation*, Spanish and Portuguese *junta* (“council, meeting”)

∼ E *yoke* ∼ NHG *Joch*

yuv-an m. (“youngster”), declension on p. 247
yuv-at (“young”)
yav-īyans (comparative, “younger”)
yav-iṣṭha (superlative, “youngest”)
yuv-aśa (“young”)

← IE **yuv*

→ Lat. B *iuv*enile

∼ E *young* ∼ NHG *jung*

F.7.2. *r*

ratha (“charriot”)

← IE **rotH*

→ Lat. B *rotate*

∼ NHG *Rad* (“wheel”)

raji f. (“line, direction”)
rājanya (“ruler”), see s.v. *pad*
rājan m. (“king”), declension on p. 245
rāṣṭram (“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”)
- ◇ B 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. 77)
- ◇ B German *reg-ieren* (“to govern”), *Reg-el* (“rule”), *Reg-isseur*

∼ NHG *richtig* (“correct”), *recht* (“right”)

∼ Germanic, but of Celtic origin: E *rich* ∼ NHG *reich*, German *Reich* (“kingdom”), PNs *Heinrich, Richard*

randhra (“vent, cavity”) (***rl***)

← IE **londh-r-o/*IE **londh-v-o*

→ Lat. *lumbus* (“hips, loins”) with B *loins*

∼ NHG *Lenden* (“loins”)

ric 7. class ***ri-ṇa-k-ti*** (“to empty, to leave behind”) (***rl***)

← IE root **lei(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*

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 to *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"), ***rud-ra*** ("terrible, crying")

← IE root **h₃reHu*

→ lat B *rumour*

ru belongs to the class of Narten verbs. See pp. 178 for a suggestion of how to explain *râu-ti* versus *ru-mas*.

ruc 1. class: ***rôcatê*** ("to shine, to please") (***rl***)

← IE root **leuk*

→ OGr. B *lynx*, *leuk-emia*

∼ Lat. B *Lucifer* ("carrier of light" → PN of angel, see *bhr̥*), *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*.

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*

râi 1. class: ***rāyati*** (“to bark”) (***rl***)

← IE root **leh₂(y)*

→ Lat. B to *la-ment*

It is unclear whether it might be better to postulate a root *rā*, just as *trā* (s.v. *tr̥̄*)

râi f. (“possession, wealth”), declension on p. 256 (with very complicated details in Lubotsky (1995))
rāyas-kāma (“desirous of property”) with gen. sg. (!) *rāyas*

← IE root **Hreh₁-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

F.7.3. *l*

laghu (“small”)
raghu (“light”) by ***rl*** and zero grade from

← IE **leng^{w}h*

→ 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 indicative	*lê-ḍhi* (1)	*lih-an-ti* (3)
infinitive	*lê-ḍhum* (1)	

lih (“to lick”)		
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* (7)	
desiderative	*li-lik-ṣ-a-ti* (8)	

1. *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*** 5. line, with *ê* already long)

   The infinitive follows a similar development.

2. Along very similar lines, observe the PPP

   IE **liǵh-to* (z.g. with PPP marker *to*)
   → *liǧ-dha* (**ASh**)
   → *liz-dha* (***sz*** before voiced stop)
   → *liẓ-dha* (**RUKI**)
   → *liẓ-ḍha* (**Cer*D***)
   → *lī-ḍha* (**CpL*z*** 2. line)

3. Although athematic, 3. pers. PRII exhibit *an*. This holds for all verbs in the 2. class (except *śās*, see 177).

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., consider

IE **e-leiǵh-t* (full grade with IE preterite augment)
→ *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*** 5. line, where *ê* is already long)
→ *a-lê-ṭ* (**AFP**, p. 47)

6. *li-lêh-a* is par. and hence regularly strong (pp. 203). *li-lih-us* is ātm. and hence regularly weak.

7. Difficult lengthening of root vowel, but the same phenomenon is evident in *a-mū-muc-a-t* (p. 214).

8. *li-lik-ṣ-a-ti* is expected desiderative in zero grade.

← IE root **(s)leiǵh* (*s* mobile)

→ E *lick*

∼ NHG *lecken* and also *schlecken* with *s* mobile (p. 49)

lī 9. class: ***linā́ti***/4. class: ***lī-ya-tê*** ("to nestle, to stick to, to hide")
li-lī-ṣ-a-ti desiderative
lī-na PPP

← IE root **leiH* ("to hide oneself")

→ perhaps E *lime* ∼ NHG *Leim*

lū 9. class: ***lunā́ti*** ("to cut, to destroy"), see pp. 93

← IE root **leuH*

→ OGr. B ana-*ly*-sis

∼ Lat. so-*lv*-ere ("to release") with first part *so* ← *se* as in *sēcūrus* (p. 75), B English *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 (“place, earth”) (see *ruc*) from *o*-grade

← IE **louko*

∼ PN Water*loo*

Probably not related to Lat. B *local*.

F.7.4. *v*

vac 2. class: ***vakti*** (“to speak”), conjugation on p. 164
ukta PPP
sūktam (“well said, hymn”) ← *su* (“good”) + *ukta*
vāc f. (“word, voice”), declension on p. 232

← IE root **vek*^{w}

→ OGr. B *epic* (twice **OGR**)

∼ Lat. B

- ◇ *English* to pro-*voke*, ad-*voc*-ate, *voc*-ative, *vowel*, *voice*
- ◇ German *Vogt* (“(dike) reeve”) ← Middle Lat. *vocātus*

vaj 1. class: ***vajati*** (“to get strong”)
vaj-ra (“the hard or mighty one”), see p. 131
ôj-as n. (“power”)
ôj-man m. (“strength, power”)
vāj-a (“fight, strength”)

← IE root **h*$_2$*veg*

→ Lat. B *vig*-orous, *veg*-etation, *veg*-ilant

∼ E to *wake* ∼ NHG *wachen* and causative *wecken*, *wacker* (“brave”) (p. 76)

Difficult. Palatal *j* in *ôjas* (s.v. *ukṣ*) explainable by **SPal** and *ôjman* then by levelling. *vajra* and *vāja* would need to be explained by levelling from *vajati* and other forms. Alternatively, one might work with an IE root $^*h_2veǵ$, but then *ug-ra* (s.v. *ukṣ*) would not be related.

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* ∼ NHG *gewinnen*, NHG *Wonne* ("bliss"), *wohnen* ("to reside"), PN *Winfred*, *Erwin*

See *vāñch.*

vanam ("forest")
van consonantal noun ("tree, wood"), hence with genitive *vanas in*
vanas-pati m. ("lord of the forest, tree"), see *pati*
vanâukas, see *ôkas* and **VS** line 5

vam 1. class: ***vamiti*** ("to vomit")

← IE root $^*vem$

→ Lat. B to *vomit*

vas[1] 2. class: ***vastê*** ("to clothe")

← IE root $^*ves$

→ Lat. B to *invest*, *investiture* and German *Weste*

∼ E to *wear*

vas^2 (“to shine”), probably the same as *uṣ.*
uṣ-as f. (“dawn”) ← IE **Hvs-es*
ucchati f. (“dawn”) ← IE **Hu-sḱ-* (**SIB** thirdlast line)

← IE root **Hves*

vas^3 1. class: ***vasati*** (“to live, to be”)
uṣita/uṣṭa/vasita PPP
vat-sy-a-ti future, **SIB** 1. line

← IE root **h*$_2$*ves*

→ E *was*

∼ NHG *ge-wes-en* (“been”)

vah 1. class: ***vahati*** (“to drive, to bring”)
anaḍ-vah n. (“ox, draught animal ← pulling a cart”) with first part *anas* (difficult cerebralisation)

vah (“to drive”)		
present indicative	*vah-a-ti*	*vah-an-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, 6)	

1. The IE root of *vah* is **veǵh*. *ū-ḍha* is regular by

   IE **uǵh-to* (z.g. with PPP marker *to*)
   → *uǵ-dha* (**ASh**)
   → *uz-dha* (***sz*** before voiced stop)
   → *uẓ-dha* (**RUKI**)
   → *uẓ-ḍha* (**Cer*D***)
   → *ū-ḍha* (**CpL*z*** 3. line)

2. The infinitive *vôḍhum* is not quite regular. One should have obtained

   IE* *veǵh-tum* (full grade and infinitive marker *tum*)
   → *vaǵ-dhum* (**ASh**)
   → *vaz-dhum* (***sz*** before voiced consonant)
   → *vô-dhum* (**CpL*z*** 1. line., pp. 53)

   Here, levelling 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 **VS** line 1, the reduplicative vowel *u* combines with the same vowel from the zero-grade root to produce *ū*.

6. Irregularly strong desiderative.

← IE root **veǵh* ("to carry")

→ Lat. B *veh*-icle, *vec-tor*, *con-vex*

∼ NHG *weg* ∼ E *a-way* ← OE *onweg*

∼ E *way* ∼ NHG *Weg*

∼ E *weigh* ∼ NHG *wiegen*

∼ NHG *be-weg-en* ("to move"), *Wagen* ("carriage"), *Wiege* ("cradle"), *Woge* ("wave")

See *ūh* ("to carry, to modify").

vā 2. class: ***vāti*** ("to blow")
vāta ("wind"), see *vātāyanam* s.v. *i* ("to go")
vāyu m. ("wind")

← IE root **h₂veh₁*

→ Lat. B *velocity*, to *ventilate*

∼ NHG *wehen* ("to breeze, to blow")

vā 6. class: ***vā-ya-ti*** (“to be dry, to be extinguished”)
nir-vāṇa (“extinguished, extinction”)
ū-na (“empty, deficient”), z.g. PPP, see pp. 118. *ūna* known from *ūna-viṃśati* (“20 - 1 = 19”)

← IE root $^*h_1veh_2$

→ Lat. B *vane*, *vanity*

Traditionally *vāy-a-ti* is considered a 1. class verb from root *vâi*.

vāñch 1. class: ***vāñchati*** (“to wish”) with analogic insertion of *n* (otherwise $^*vā$ by **Lar_SY** and with **SIB** thirdlast line

← IE $^*vn̥H$-sḱe (“to like, to get used to”)

→ E to *wish* ∼ NHG *wünschen*

vār n. (“rain”)

← IE $^*veh_1r$ (“water”)

← Lat. B *ur-ine*

viṃśati (“twenty”) f., not dual (for first part, see *dvi*)

← IE $^*dvi$-dḱm̥t-ih_2 (“two tenners”), with IE dual ending ih_2 (p. 224)

Compare *pañcāśat*. *ṃ* in *viṃśati* difficult.

vid 2. class: ***vêt-ti*** (“to know”)
vêdānta (“end of Vedic literature”), see *anta*
vind 1. class: ***vind-a-ti*** (“to find”)

← IE root $^*vei(n)d$

→ OGr. B *idea*, *ideology* by **OGR**

∼ Lat. B *video*, Lat. B *visa* (requirements) from Lat. *vīsus* (“seen”)

∼ Germ.

- ◇ Swedish *vetenskap* ∼ NHG *Wissenschaft* (“science”)
- ◇ E *wise* ∼ NHG *weise*

◇ NHG *gewiss* (“certainly”), *bewusst* (“consciously”)

vêda (“he knows”), an old “perfect” (with stative meaning, not with a temporal one) without reduplication
vid-va(n)s, perfect active participle, again without reduplication, see p. 244

vidhavā (“widow”)

← IE **vidhevā*

→ E *widow* ∼ NHG *Witwe*

vip 1. class: ***vêpatê*** (“to tremble, to be excited”)
vip-ra (“excited, wise, learned brahmin”) (p. 130)
vêp-anam (“trembling”)

← IE root **veip/***veib* (difficult)

→ Lat. B *vibr-ant*

viś 6. class: ***viśati*** (“to enter”)
viś f. (“house, people”) z.g., see pp. 115
vâiś-ya (“man of the people: merchant, agriculturalist, or trader”) f.g., see s.v. *pad*

← IE root **veiḱ*

→ OGr. B *economics* (**OGR**)

∼ Lat. *vīcus* (**LAT__*V***) (“village”) and hence Fr. *voisin* (“neighbor”) and B English *vicinity*

viṣam (“poison”)

← IE **veis*

→ Lat. *vīrus* (**LAT__*V***, **LAT__*sr***) (“venom, poison”)
◇ B *virus*
◇ B *virulent*

vīra (“man”)

← IE **vīr-o*

→ Lat. B *vir*-ile, trium-*vir*-ate (for first part see *trayas*)

∼ E *were-wolf* ∼ NHG *Werwolf*, NHG *Wergeld* ("expiation money" in Germanic law)

vṛ 9. class: ***vṛṇīté*** ("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")

vṛka ("wolf") (***rl***)

← IE **w̥lk^{w}o* (**SY_Conf**)

→ 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 turn away, to exclude")
vṛk-ta PPP ("excluded")
varg-a ("division, group")

← IE root **verg*

→ Lat. B to di-*verge*, to con-*verge*, on the *verge*

vṛt 1. class: ***vartaté*** ("to turn, to roll, to be")

← IE root **vert*

→ Lat. B *vertical*, *versus*, *verse*. Regarding the last two words, **LAT_*DD*** is responsible for *rtt* → *rss*. Finally, *rss* gets simplified to *rs*.

∼ NHG *werden* ("to become"), *Wurm* ("worm")

vy-adhi-karaṇa ("subsisting or inhering in different receptacles")
vaiy-adhi-karaṇ-ya-m ("fact of *vy-adhi-karaṇa*"). See **Lg__Ry** on p. 25.

vy-arth-a ("useless")
vaiy-arth-ya-m ("uselessness") (**Lg__Ry**)

vy-ā-karaṇa-m ("gramar")
vaiy-ā-karaṇa ("grammatical") (**Lg__Ry**)

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* (**IE__SY__L**)

F.8. Sibilants

F.8.1. *ś*

śaṃs 1. class: ***śaṃsati***("to declare, to recite")

← IE root **ḱens*

→ Lat. B *cens*us, *censor ship*, *censure*

śaṅk 1. class: ***śaṅkatê*** ("to doubt, to hesitate")

← IE root **ḱenk*

→ Lat. *cunc*tāri ("to be slow, to hesitate")

∼ E *to hang* ∼ NHG *hängen* and also NHG *Verhängnis* ("doom"), *Hängepartie* ("adjourned game")

śatám ("hundred")

← IE **ḱm̥tóm* ← IE **dḱm̥tóm* ("the tenth tenner")

→ Lat. B *cent*ipede (for second part see *pad*), *cent*imeter (for second part see *mā*), per*cent*

∼ E *hund*-red

∼ German *hund*ert from Old Saxon

See *daśa* and *pañcāśat.*

śad (“to fall”)
śa-śāda pf. *(**Lo**)*

← 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 B *cap-sule*
- ◇ Lat. *dē-cip-ere* with B to *de-ceive*
- ◇ Lat. *re-cip-ere* with B to *re-ceive*
- ◇ B *inter-cep-t*, to *ac-cep-t*, *cap-able*
- ◇ B *prin-cip-al*, *parti-cip-ation, parti-cip-le*

∼ Germ.

- ◇ E to *heave* ∼ NHG *heben*
- ◇ E to *have* ∼ NHG *haben*
- ◇ NHG *Haf-t* (“imprisonment”), also sünd*haft* (“sinful”) and wahr*haft*ig (“truthful”)

śaraṇam (“protection”) (***rl***)
śarman n. (“shelter”)
āśāra (“shelter”)
śara (“skin on milk → fresh butter”)
śālā (“hall, large room”)

← IE root **ḱel* (“to cover, to hide”)

→ OGr.

- ◇ B *cal-yx*, *eu-cal-yptus* (“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 English *cell* and
  - German *Keller* (“cellar”): early borrowing reflect pronunciation of Lat. *c* as *k*
  - German *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 *Helm*, E *hall* ∼ NHG *Halle*, NHG *Hehler* (“receiver of stolen goods”), *verhüllen* (“to cover”), PN *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”)

śās (“to teach”)		
present indicative	*śās-ti* (1)	*śās-a-ti* (7)
infinitive	*śās-tum* (1)	
PPP	*śiṣ-ṭa* (2)	
future	*śās-i-ṣy-a-ti* (4)	*śās-i-ṣy-a-n-ti* (4)
imperfect	*a-śāt* (5)	*a-śās-us* (3, 8)
perfect	*śa-śās-a* (1, 6)	*śa-śās-us* (3, 6)

śās (“to teach”)		
thematic aorist	*a-śiṣ-a-t* (2)	
desiderative	*śi-śās-i-ṣ-a-ti* (4, 9)	

The IE root **ḱeHs* leads to

◇ the strong forms with *śās* (**Lar_ *V*** 2. line)

◇ the weak forms *śis* (**Lar_ *V*** 4. line) and, after applying **RUKI**, finally *śiṣ*.

However, the strong form is used several times where the weak form is expected.

1. The full grade is regularly present in some forms.
2. The zero grade is regularly present in other forms.
3. The 3. pers. pl. perfect and imperfect forms *(ś)a-śās-us* are irregularly strong.
4. Luckily, the desiderative and the future forms use “thematic” *i* (without laryngeal excuse).
5. In the 3. pers. sg. impf., **CCl** should produce sg. *a-śās* ← *a-śās-t.* Instead, we find *a-śāt*, formed by analogy, perhaps from *a-vêt* from *vid* (“to know”) which is regular.
6. The perfect forms use full grade, but irregularly so in 3. pers. pl.
7. *śās* is an exception within the 2. class with respect to pres. ind. par. 3. pers. pl.:
   ◇ **no** thematic *a* in par. 3. pers. pl. form
   ◇ strong form, compare 3
8. Impf. 3. pers. pl. *a-śās-us* is special in using the more rare ending *us* instead of *(a)n.*
9. The desiderative indicated in the table uses the strong form, against the general rule.

← IE root **ḱeHs*

śiras n. (“scull, head”)

← IE **ḱerh*$_2$

→ Lat. B *cer-ebral*

∼ NHG *Hir*-n

Related to *śṛṅgam*.

śiva (“favourable”)

← IE **ḱeivo* (“friendly, intimate, dear”)

→ Lat. B *civ-il*, *civ-il-isation*

Perhaps related to *śī*.

śī 2. class: ***śêtê***/1. class: ***śayatê*** (“to lie, to sleep”)
śayu (“lying, taking a rest”)
śayyā (“bed”) gerundive
ā-śaya (“stay, sojourn”), ***jalāśaya*** (“stay of water → lake”)

← 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*

śūnya (“empty”)

← IE root *ḱeuh*$_1$

→ NHG *hohl*, but see s.v. *kulam*.

śṛṅgam (“peak, horn”)

← IE **ḱr̥̊no*

→ Lat. B *corner*

∼ E *horn* ∼ NHG *Horn* and furthermore NHG *Hirsch* (“who carries a horn → stag”)

Related to *śiras*.

śrad-dhā (“belief, trust”)

← IE **ḱred-dheh*$_1$ (“to place in the heart → to believe”)

→ Lat. B *cred*-it, *cred*-ible, *cred-o* (literally 1. pers. sg.: "I believe").

Compare *hṛd* and also *dīvidere* s.v. *dhā*.

śri 1. class: ***śrayati*** ("to resort to, to lean")

← IE root *ḱlei* (which is *i*-extension of a root found s.v. *śar-aṇam*)

→ OGr.

- ◇ B *cli-max* (OGr. "ladder" → 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. 287)
- ◇ B *climate* (named after the position (inclination) of the sun)
- ◇ B with *v*-extention *pro-cli-v-ity*
- ◇ B with *n*-extension: *in-cli-n-ed*, *de-cli-ne*, *de-cli-n-ation*

∼ Germ., where w.-i. IE *ḱr/ḱl* → E/NHG *r/l* (similar to Germanic words s.v. *śru*)

- ◇ with *n*-extension: E to *lean* ∼ NHG *lehnen*
- ◇ E *ladder* ∼ NHG *Leiter* (compare *climax* in this entry)

śru 5. class: ***śṛṇôti*** ("to hear") (see pp. 94) (***rl***)
śrav-as n. ("fame")
śrô-matam ("fame, renown"), see *man*
ślôka ("verse, praise")

← IE root **ḱleu*

→ Germ., where w.-i. IE *ḱr/ḱl* → E/NHG *r/l* (similar to Germanic words s.v. *śri*)

- ◇ E *loud* ∼ NHG *laut*, *läut*en ("to ring, to toll")
- ◇ NHG *lauschen* ("to listen")
- ◇ NHG *Leumund* ("reputation")
- ◇ NHG PN *Lud-wig* ← OHG PN *Chlod-vig* ("who is famous (in battles)"), the latter with reflex of IE *ḱ*

ślakṣṇa (“slippery, meagre, thin”), difficult: perhaps from *slakṣ*

← IE **sleńǵ*

→ Lat. B *languid*, *lax*

∼ E *slack*

śvan m. (“dog”), declension on p. 246
śvāna (“dog”) (from IE **ḱvóno* with **Lo**)

← IE **ḱvón*

→ OGr. B *cynic*

∼ Lat. *canis* in the Lat. warning “cave *canem*” (“beware of the dog”)

∼ E *hound* ∼ NHG *Hund*

śvas 2. class: ***śvas-i-ti*** (“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”), see pp. 130

← IE root *ḱveit*

∼ E *white* ∼ NHG *weiß*. Compare *lean* s.v. *śri* and *loud* s.v. *śru.*

F.8.2. *ṣ*

ṣaṭ/ṣaṣ (“six”)
ṣôḍaśa (“sixteen”), see p. 51

← IE **sveḱs*

→ OGr. B *hexagon*

∼ Lat. *sex* with B *sextet*

∼ E *six* ∼ NHG *sechs*

Note:

◇ For final consonant, see **AFP** (pp. 47).

◇ For initial consonant, see **SI** line 3 (p. 45)

ṣṭīv 1. class: ***ṣṭīvati*** (“to spit”)

← IE root **spieuH/***speiHu/***tspieuH* (various suggestions, unclear)

→ Lat. *PPP spūtum* with B *sputum*

∼ E to *spew* ∼ NHG *speien*

F.8.3. *s*

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”), *second* (part of a minute)

∼ E to *see* ∼ NHG *sehen* (i.e., “to follow with the eyes”)

See *o*-grade *sakhi.*

sad 1. class: ***sīdati*** (“to sit”) (p. 85 and *nīḍa*)
upa-ni-ṣad f. (according to one interpretation: “what is taught when sitting down and close to”, see *upa*)
vi-ṣāda (“sorrow”)

← IE root **sed*

→ OGr. B via Latin *cat-hedra* (**OGR**):

- ◇ German *Kat-heder* (“lectern”)
- ◇ English *cathedral* (i.e., “a bishop’s seat”)
- ◇ Fr. *chaire* (“rocking chair”)

∼ Lat.

- ◇ *sīd*ere ∼ OI *sīdati* (similar, but independent development)
- ◇ B *sed*-entary, *pre-sid-ing*, *re-sid-ing*
- ◇ *ses-sion*, *ob-ses-sion* (**LAT_*DD***)

∼ E to *sit* ∼ NHG *sitzen*

san 8. class ***sanôti*** (“to obtain, to possess”)
sā-ta PPP (**Lar_SY**)
gô-ṣaṇi (“acquring cattle”), for first part see *gô*

← IE root *senh*$_2$

→ Lat. B *sin-ister*

See *snā*.

sana (“old”)

← IE **seno*

→ Lat. B *sen*ate, *sen*ator

sap 1. class: ***sapati*** (“to worhip”)

← IE root **sep*

→ Lat. B *sep-ulture*

sapta (“seven”)

← IE **septm̥*

→ OGr. *hepta* with B *heptagon*

∼ Lat. *septem*

∼ E *seven* ∼ NHG *sieben*

sam (“together”)

← IE **sem* (“one”)

→ OGr. B *homo-sexual*

∼ Lat.

- ◇ *sem*-per (“always”) with B *sempiternal* ← *semper* + *eternal*
- ◇ B *sim*-ilar, *sim*-ple

∼ Germ.

- ◇ E *same*
- ◇ NHG *sam*-meln (“to collect”), *sam*-t (“including”), *sämt*lich (“all of them”)
- ◇ E *-some* ∼ NHG *-sam*, both meaning “of same quality”, as in
  - E tire-*some*, whole-*some*
  - NHG kleid-*sam* (“becoming, flattering”), gleich-*sam* (“quasi”)

See *sāmi*.

sarpís n. (“clarified butter”) (***rl***)

← IE **solpí*

→ Lat. B *sulphur* with difficult *ph*

∼ E *salve* (“ointment”) ∼ NHG *Salbe* (**VER**: see accent in OI *sarpís*)

sarva (“all, every, whole”) (***rl***)

← IE **solHvo*

→ OGr. B *holo*-caust, *holo*-gram

∼ Lat. *sal*ūs, *sal*ūtis (“health, well-being”) with B to *sal*ute (i.e., “to wish health”), *safe*

∼ NIr. *slān* (“good-bye”)

sā 4. class: ***syati***, see *ava-sā*

sāmi (“in one → one of the two → half”)

← IE **sēmi* loc. sg. (“in one”)

→ OGr. B *hemi*-sphere

∼ Lat. B *semi*-final

See *sam.*

sidh 4. class: ***sidhyati*** (“to have success, to be valid”)
sidh-ra (“perfect, good”), zero-grade *ra* adjective (pp. 130)
sādh 1. class: ***sādhati*** (“to be successful, to lead to one’s goal”), regular causative in full grade
sādh-u (“able, noble, obedient”)

← IE root **seHdh*

siv 4. class: ***sīv-ya-ti*** (“to stitch”) ← **siHv-ye-ti*
syū-ta PPP (“bag”) ← **syuH-to* (**Lar_MTh**)

← IE root **seiHv*

See *div* and *mīv.*

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”)
sv-a-ccha (“pure, transparent”), see s.v. *chad*

← IE **h*$_1$*su*

→ OGr. *eu* ← **eh*$_1$*u* 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*$_1$*es* (see *as*)

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 from *su* (“to press”)?
savi-tar m. (“activator, father”)

← IE root **seuH*

sū-kara ("pig"), see *kṛ*

← IE **suHs*

∼ E *sow* ∼ NHG *Sau*

sūnu m. ("son")

← IE **sūnu*

∼ E *son* ∼ NHG *Sohn*

sṛ 1. class: ***sar-a-ti***("to go, to flow") (***rl***)

← IE root **sel*, perhaps related to *u*-extension IE **srev* s.v. *sru*

→ OGr. *hal-ma* (a board game) (**OGR**)

∼ Lat.

- ◇ *sal*-īre ("to jump") with B *sal*-to via It.
- ◇ B *serum*

sṛj 6. class: ***sṛj-a-ti*** ("to throw, to create")
sṛṣ-ṭi f. ("letting loose, creation")
sar-ga ("letting loose, creation")

← IE root **serǵ* or **serg*

Difficult because the forms point to either primary or secondary palatalisation:

◇ *sṛṣṭi* points to palatal IE *ǵ* and hence **PPal** by

IE **sr̥ǵ-to* (z.g. with PPP marker *to*)
→ *sṛs-to* (***sz*** before voiceless cons.)
→ *sṛṣ-to* (**RUKI**)
→ *sṛṣ-ṭa* (**Cer*D***, ***aā***)

◇ *sarga* ← IE **serg-o* versus *sṛjati* ← IE **sr̥g-e-ti* provide a nice example of **SPal**.

sṛp 1. class: ***sarp-a-ti*** ("to crawl, to creep")

← IE root **serp*

→ OGr. B *herpes* (“spreading skin condition”)

∼ Lat. B *serpent*

skand 1. class: ***skand-a-ti*** (“to jump”)

← IE root **skend*

→ Lat. B to *de-scend*, to *tran-scend*

stan 1. class: ***stan-a-ti*** (“to thunder, to hum”)

← IE root **(s)ten* (*s* mobile)

→ Germ.

◇ with *s* mobile: NHG *stöhnen* (“to groan”) (see pp. 76)

◇ without *s* mobile: E to *thunder* ∼ NHG *donnern*

starī (“a barren cow”)

← IE **ster*

→ Lat. B *ster-ile*

stigh 5. class: ***stighnôti*** (“to step, to mount”)

← IE root **steigh*

→ NHG *steigen* (“to rise, to increase”), *Steg* (“footbridge”)

stṝ 5. class: ***stṛṇôti***/9. class: ***stṛṇāti***, (“to spread”)
stīṛṇa PPP
vi-stara (“extension, detail”)

← IE root **sterH*

→ OGr. B *a-stro*-logy, *a-stro*-nomy, des-*aster*

∼ Lat.

◇ *stēlla* ← **stēr-la* with B *con-stella-tion*, *stellar*

- ◇ B *sub-stratum*

∼ NHG *Stern* (“star”),

sthag 10. class: ***sthagayati*** (“to hide, to cover”)

← IE root **(s)th₂eg* (*s* mobile)

→ Lat.

- ◇ (B) *toga*
- ◇ *tēgula* (“tile”) → B English *tile*, NHG *Ziegel* (“brick”)

∼ E *thatcher* ∼ NHG *Dach* (“roof”)

See other instances of *s* mobile at *carman* and *lih*.

sthā 1. class: ***tiṣṭhati*** (“to stand”)
sthāman n. (“station, position, strength”)
ut-thāya gerund (“standing up”) (**D*z*D**)
sthi-ra (“steady, durable”), see pp. 130
sthūra (“strong”), see below s.v. *sthūra*
yudh-i-ṣṭhira PN with loc. case ending in compound
su-ṣṭhu adv. (“well”), see *su*
stiyā (“standing water”) (see 3 below)

sthā (“to stand”)		
present indicative	*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 **steh₂*. **DA** is not involved, but one obtains *tiṣṭhati* from

ti-sth$_2$-e-ti (reduplication with *i*, z.g. root, thematic vowel)
→ *ti-sth-e-ti* (**Lar_*CH*:** h_2 aspirates *t*)
→ *ti-ṣth-a-ti* **(RUKI)**
→ *ti-ṣṭh-a-ti* (**Cer*D***)

2. The aspirated OI root *sthā* is in full grade, as are 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 *ṭ*
turns into	*sthā-sy-a-ti*	with aspirated *t*

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, see *stiyā* ("standing water").

4. The perfect *ta-sth-âu* is similar to *da-d-âu* from *dā* ("to give"). See p. 207.

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* de*sist*, *to* re*sist*, *to* sub*sist*
- ◇ B *status*, *station*

∼ E to *stand* ∼ NHG *stehen*

sthūra ("strong")
sthūla ("big, fat") (***rl***)

← IE *sth$_2$u-ro* (from IE *steh$_2$ s.v. *sthā* above), difficult

→ Lat. B *re-staur-ation*, to *restore*

∼ NLG *stur* ("stubborn")

snā 1. class: ***snāti*** ("to take a bath, to purify oneself"), consequential of u.at. *san* (or from *san* above, but then the original meaning has nothing to do with bathing, but with obtaining knowledge)
ni-ṣṇāta, ***ni-ṣṇa*** ("having plunged into → experienced")

← IE root $^*sn\text{-}eh_2$

snāvan m. ("muscle, sinew")

← IE $^*sneh_1\text{-}ur/^*sneh_1\text{-}ven$

→ OGr. B *neuron*, *neurology*

∼ Lat. B *nervous* with metathesis *ur* → *ru*

snih 4. class: ***snih-ya-ti*** ("to stick, to adhere, to like")
snig-dha PPP ("attached, lovely")
snêh-a ("love, oil") with unexpected **SPal** (why not *snêgh-a* as in *mêgh-a*, see p. 105)

← IE root $^*sneig^wh$

→ E *snow* ∼ NHG *Schnee*

smi 1. class: ***smay-a-tê*** ("to smile, to laugh")
smêra ("smiling")

← IE root $^*smei$

→ Lat. *mīrus* ("laughter → remarkable"), also B *miracle*

spṛh 10. class: ***spṛh-aya-ti*** ("to long for, to desire intensely") (**PPal**)

← 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)***, *ra* adjective)

← IE root $^*speh_1$

→ Lat. *spēs* f. ("hope") with Sp. *esperanza*

∼ Lat. B *pro-sper, pro-sper-ity*

sru 1. class: ***srav-a-ti*** ("to flow, to stream")

← IE root **srev*, which is perhaps *u*-extension of IE root **sel* s.v. *sṛ*

→ OGr. B *rhy-thm, rheu-ma*

∼ E *stream* ∼ NHG *Strom*

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, by itself, unique")

∼ OIr. *féin* ← **sve-(de)sin* ("own, self"). *Sinn Féin* ("we ourselves") is a political party in Ireland. See also NIr. *mo theanga féin* ("my own language") s.v. *jihvā*

∼ NHG *sich*

See *svadhā* and *svasar.*

svad 1. class: ***svad-a-tê*** ("to taste, to be sweet or pleasant to the taste")
svād-u ("sweet")

← IE root **sveh$_2$du* (with difficult to explain short *a* in *svad*)

→ OGr. B *hedonic* (**OGR**)

∼ Lat. B *suave*

∼ E *sweet* ∼ NHG *süß*

svadhā ("custom, home") ← *sva* + *dhā*

← IE **s(v)edhus*

→ OGr. *ēthos* in B *ethics* by IE *s* → OGr. *h* (compare s.v. *sapta*) → ∅ (**OGR_DA**)

∼ NHG *Sitte* (“custom”)

svan 1. class: ***svan-a-ti*** (“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: ***svap-i-ti*** (“to sleep”)

← IE root **svep*

→ OGr. B *hyp-nosis* (**OGR**)

∼ Lat. *somnus* (by *p* → *m* before nasal) with B *somnambulant*, *somniferous* (for second part see *bhṛ*)

svar 1. class: ***svar-a-ti*** (“to sound”)
svara (“sound, voice, vowel”)
su-svar-am adv. (“very sweetly”)

← IE **sver*

→ Germ.

- ◇ E to *an-swer* ← OE *and-swaru* (“to sound against”) ∼ NHG *Antwort*
- ◇ E to *swear* ∼ NHG *schwören*

svar (“the space above the sun”) ← IE **sh₂vel*, related to
sūrya (“sun”) (**Lar_*CH*, *rl***) ← IE **suh₂l-yo*

← IE **seh₂vel-*

→ OGr. B *helio-centric*

∼ Lat. *sōl* (“sun”) in famous Neapolitan song: *o sole mio*

sva-sar f. (“the female own one, sister”), see *sva*

← IE **svesōr*

→ Lat. *sorōr* (by *sve* → *swo* → *so* as in *sonare*, see *svan*) with B *sorority*

∼ E *sister* ∼ NHG *Schwester*

zero grade of *sar* serves as a feminine suffix as in f. nom. pl.

◇ *ti-sr-as* (“three”)

◇ *cata-sr-as* (“four”)

svāmin m. (“master, owner”) ← *sva* + (perhaps) *amā* + *in* (see *amā*)

svid 1. class: ***svêd-a-tê*** (“to sweat”)

← IE root **sveid*

∼ E *sweat* ∼ NHG *Schweiß*

F.9. Aspirant *h*

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. 145
vṛtra-han (“*Vṛtra* killer, *Indra*”) with Ved. nom. sg. ***vṛtra-hā*** *(***CpL__*an-in-ar***)*
a-ghnyā gerundive: pp. 151 (“not to be killed → cow”)
hiṃsā (“violence”, see pp. 136)

han (“to hit”)		
present indicative	*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* (7)	*ji-ghāṃ-s-u* (7)

1. *han-ti* is regularly produced from IE $^*g^when$-*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*. A second future form is *haṃ-sy-a-ti* (***Ns***).
3. **SPal** does not occur before consonants. Thus, one finds (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 gha-ta, without **SPal**. Analogy with forms like *na-ta* (p. 119) or similar forms may be responsible.
5. Identical parasmâipada impf. 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 palatalisation because of IE root vowel *o* in strong perfect form.
7. There exist two different desideratives for *han* ("to kill") ← IE $^*g^when$, depending on the suffix. See pp. 145.

← IE root $^*g^when$

→ Lat. B to de-*fen*-d

haṃsa ("goose") (**PPal**)

← 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")

← 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")? In any case, OI *h* here is as difficult to explain as OI *h* in *hṛd*.

hari*/*hiri ("golden, yellow", name of Viṣṇu)

← IE **ǵhelh₃*

→ OGr. B *chl-orine*

∼ Lat. *helvus* (“yellow”) in the Lat. name for Switzerland: Confoederatio *Helvetica* (abbreviation: CH)

∼ E *yellow* ∼ *gelb*

hary 1. class: ***haryati*** (“to desire, to yearn after”) (**PPal**)

← IE **ǵher*

→ OGr. B *char-isma*

∼ NHG *gern(e)* (“gladly, willingly”)

has 1. class: ***has-a-ti*** (“to laugh”)
jakṣ 2. class: Ved. ***jakṣiti*** (“to laugh”), probably reduplicated form **ghe-ghs* (**DA**, **SPal**, **SIB**)

← IE root **ghes* (**SPal**)

hasta (“hand”)

← IE **ǵhes-/*ǵhes-r*

→ OGr. B *chir-urg*y

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 indicative	*ju-hô-ti* (3)	*ju-hv-a-ti* (4)

hu (“to sacrifice”)		
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-u* (8)

1. From IE **ǵheu*, one regularly obtains 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 pres. ind. 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 ***SV***.

5. The expected zero grade is present in PPP *hu-ta*.

6. As a peculiarity of the 3. class, the impf. 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**, ***SV***)
   → *ju-hōv-e* (**L*o***)
   → *ju-hāv-a* (***aā***)

   By ***V*+*SV***, pf. 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* ("to pour, to water")

hurch 1. class: ***hūrchati*** ("to be crooked, to deceive")
hūrchanam ("the act of going crookedly, crookedness")
On the one hand, full-grade ***hvar-as*** n. ("crookedness, dishonesty") ← IE **hvHer-es* (**Lar_CH**)

← IE root **hvHer*

On the other hand, ***hūr-ch-a-ti***, with *sḱ* suffix

← IE zero grade **huHr-sḱ-e-ti* (**Lar_V**, **SIB**)

Compare *gam, gacchati*.

hū ("to call")
hvā ("to call"). Consequential of *hū*, see pp. 82. By schwebeablaut (floating vowel gradation), one postulates the two IE full grades **ǵheuH* and **ǵhveH* → *hvā*.

← IE root **ǵheuH*

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. *gṛham*)

hṛd n. ("heart") with mysterious OI *h*
su-hṛd m./f. ("having a good heart → friend")

← IE **ḱerd*

→ OGr. B *cardiology*

∼ Lat. *cor*, *cordis* with B English *dis-cord*, Fr. *cordialement* ("best regards")

∼ E *heart* ∼ NHG *Herz*

See also *śraddhā.*

hṛṣ 1. class: ***harṣ-a-ti***/4. class ***hṛṣ-ya-ti*** ("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 *horrific* (for second part, see Lat. *facere* s.v. *dhā*)

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.*

Bibliography

Alfred Bammesberger, editor. *Die Laryngaltheorie*. Carl Winter, Heidelberg, 1988.

Robert S. Beekes. *Comparative Indo-European Linguistics*. John Benjamins Publishing Company, 1995.

Robert S. Beekes. *Etymological Dictionary of Greek*. Brill Academic Publisher, 2010. 2 volumes.

Karl Brugmann. *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen, Erster Band: Einleitung und Lautlehre*. Cambridge University Press, 2009. First published in 1886.

Thomas Burrow. *The Sanskrit Language*. Motilal Banarsidass Publishers, 2001. First published in 1955.

James Clackson. *Indo-European Linguistics*. Cambridge University Press, 2007.

Michiel de Vaan. *Etymological Dictionary of Latin and the other Italic Languages*. Brill Academic Publisher, 2008.

Madhav M. Deshpande. *A Sanskrit Primer*. Centers for South and Southeast Asian Studies, University of Michigan, 2007.

Dudenredaktion. *Das Herkunftswörterbuch*. Dudenverlag, 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, 2004.

Robert P. Goldman and Sally J. Sutherland Goldman. *Devavāṇīpraveśikā: 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*. 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, 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, 2013.

Leonid Kulikov. The Vedic root variants of the type CaC//C(C)ā: Morphophonological features and syntactic patterns. In Thomas Krisch and Thomas Lindner, editors, *Indogermanistik und Linguistik im Dialog*, 310–320. Reichert Verlag, 2011.

Leonid Kulikov. Indo-Aryan. In Mate Kapović, editor, *The Indo-European Languages*, 214–262. Routledge, 2 edition, 2017.

Martin Joachim Kümmel. *Urindoiranische Grammatik*. Verlag der Österreichischen Akademie der Wissenschaften, 2014.

Romano Lazzeroni. Sanskrit. In Anna Giacalone Ramt and Paolo Ramat, editors, *The Indo-European Languages*, 98–124. Routledge, 1998.

Alexander Lubotsky. Reflexes of intervocalic laryngeals in sanskrit. In W. Smoczynski, editor, *Kurylowicz Memorial Volume. Part One*, 213–233. Universitas, Cracow, 1995.

Alexander Lubotsky. The phonology of Proto-Indo-Iranian. In Brian Joseph Jared Klein and Matthias Fritz, editors, *Handbook of Comparative and Historical Indo-European Linguistics*, 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, 3 edition, 1978.

Manfred Mayrhofer. *Etymologisches Wörterbuch des Altindoarischen, I. Band.* Carl Winter Universitätsverlag, 3 edition, 1992.

Manfred Mayrhofer. *Etymologisches Wörterbuch des Altindoarischen, II. Band.* Universitätsverlag C. Winter, 3 edition, 1996.

Thomas Oberlies. Aśokan Prakrit and Pāli. In George Cardona and Dhanesh Jain, editors, *The Indo-Aryan Languages*, 161–203. Routledge, 2003.

Felix Otter. *Grundkurs Sanskrit.* Hempen Verlag, 2017.

Helmut Rix. *Lexikon der indogermanischen Verben.* Ludwig Reichert Verlag, 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, 1998.

Andrew L. Sihler. *New Comparative Grammar of Greek and Latin.* Oxford University Press, 1995.

Andrew L. Sihler. *Language History.* John Benjamins Publishing Company, 2000.

Ulrich Stiehl. *Sanskrit-Kompendium.* Hüthig GmbH & Co. KG, 5 edition, 2011.

Oswald Szemerenyi. *Einführung in die vergleichende Sprachwissenschaft.* Wissenschaftliche Buchgesellschaft, 3 edition, 1989.

Paul Thieme. *Der Fremdling im Rgveda.* Abhandlungen für die Kunde des Morgenlandes, XXIII 2. Kommissionsverlag F. A. Brockhaus, 1938.

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*, 25–73. Routledge, 1998.

Harald Wiese. *Eine Zeitreise zu den Ursprüngen unserer Sprache - Wie die Indogermanistik unsere Wörter erklärt.* Logos Verlag, Berlin, 2010.

Alfred C. Woolner. *Introduction to Prakrit*. Motilal Banarsidass Publishers, 2 edition, 1996. First published in 1928.

Zentralinstitut für Sprachwissenschaft. *Etymologisches Wörterbuch des Deutschen*. Deutscher Taschenbuch Verlag, 2 edition, 1997.

Sabine Ziegler. *Klassisches Sanskrit*. Reichert Verlag, 2012.

Index

Printing and Binding
Books on Demand GmbH
In de Tarpen 42, 22848 Norderstedt, Germany

Students of Sanskrit can choose among several good manuals. Whichever they may choose, learning Sanskrit is a daunting task. 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 (abbreviated by E) eat and New High German (NHG) essen. There was an Indo-European (IE) root ed that branched out into all these words over some millennia. Even E *tooth* and NHG *Zahn* stem from IE ed.

Comparative Indo-European philology and the study of Sanskrit have been going their separate ways for too long. What students of Sanskrit would greatly profit from is a book that points out the parallels between Sanskrit and early European languages like Latin or Greek that they know, for example, from loanwords present in English and many other languages.

"Sanskrit as an Indo-European Language" does this in all the detail one could hope for: it offers systematic comparative accounts on all relevant levels of language, from phonology to morphology and lexicology, and gives readers the background knowledge that will also let them recognise all the parallels that are not immediately obvious. This comprehensive study will be of great benefit to students of Indo-European and Sanskrit alike.

Antonia Ruppel, author of "The Cambridge Introduction to Sanskrit"

ISBN 978-3-948791-76-6