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:

	$\sqrt{bhṛ}$ parasmâipada			
	sg.	dual	pl.	
1	*bhar-ā-mi* (1)	*bhar-ā-vas* (2)	*bhar-ā-mas* (2)	present
2	*bhar-a-si*	*bhar-a-thas*	*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)

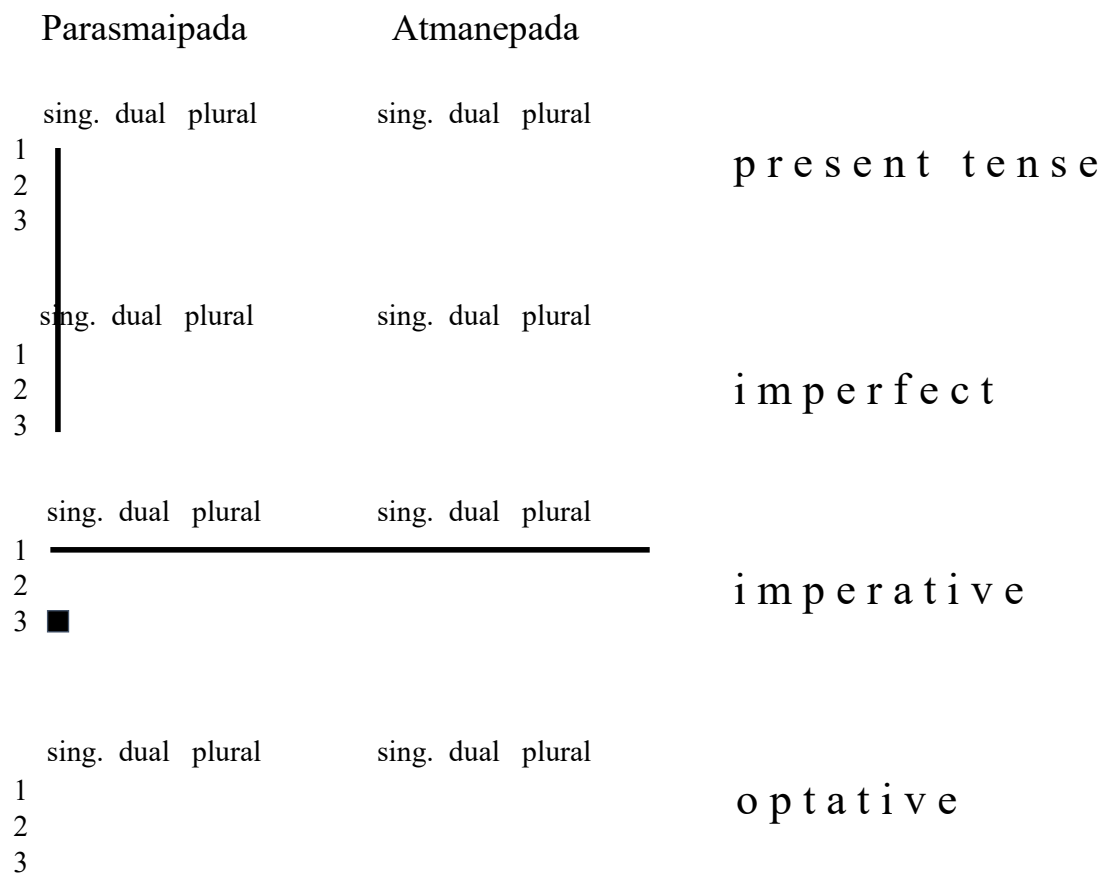

Figure D.1.: Strong forms in the present-system of athematic verbs

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 $\underset{\circ}{m} \rightarrow a$:

	1. pers. sg. impf.	
	ending $\underset{\circ}{m} \rightarrow a$	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):

	thematic verbs				thematic verbs		
	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*

	athematic verbs				athematic verbs		
	↓	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:

	$\surd$*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"):

	$\sqrt{as} \leftarrow$ 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:

	$\sqrt{}$*brū* ← IE **breuH*					
	parasmâipada			ātmanêpada		
	sg.	dual	pl.	sg.	dual	pl.
1	***brav-ī-mi*** (1)	*brū-vas*	*brū-mas*	*bruv-ê*	*brū-vahê*	*brū-mahê*
2	***brav-ī-ṣi*** (1)	*brū-thas*	*brū-tha*	*brū-sê*	*bruv-āthê*	*brū-dhvê*
3	***brav-ī-ti*** (1)	*brū-tas*	*bruv-an-ti* (3)	*brū-tê* (1)	*bruv-ātê*	*bruv-a-tê* (3)
1	***a-brav-am***	*a-brū-va*	*a-brū-ma*	*a-bruv-i*	*a-brū-vahi*	*a-brū-mahi*
2	***a-brav-īs*** (2)	*a-brū-tam*	*a-brū-ta*	*a-brū-thās*	*a-bruv-āthām*	*a-brū-dhvam*
3	***a-brav-īt*** (2)	*a-brū-tām*	*a-bruv-an* (3)	*a-brū-ta*	*a-bruv-ātām*	*a-bruv-a-ta* (3)
1	***brav-āni***	***brav-āva***	***brav-āma***	***brav-âi***	***brav-ā-vahâi***	***brav-ā-mahâi***
2	*brū-hi*	*brū-tam*	*brū-ta*	*brū-ṣva*	*bruv-āthām*	*brū-dhvam*
3	***brav-ī-tu*** (1)	*brū-tām*	*bruv-an-tu* (3)	*brū-tām*	*bruv-ātām*	*bruv-a-tām*

1. 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:

	$\sqrt{}bhī \leftarrow$ 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 $\bar{\imath} \leftarrow iH$ 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 $^*bhi\text{-}bhih_2\text{-}\underset{\circ}{n}\text{-}ti$ (reduplication, zero grade)
   → *bi-bhī-*$\underset{\circ}{n}$*-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.
$\sqrt{}bhṛ \leftarrow$ IE $^*bher$	*a-bi-bhar*	*a-bi-bhar*
$\sqrt{}bhī \leftarrow$ IE $^*bheiH$	*a-bi-bhê-s*	*a-bi-bhê-t*

   All four forms are regular!

hu **("to sacrifice")**

The paradigm for the OI root *hu* ("to sacrifice") looks bewildering. The IE root is **ǵheu* 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

$$\begin{array}{rl} & {}^{*}a\text{-}hi\text{-}na\text{-}s\text{-}s \\ \rightarrow & a\text{-}hi\text{-}na\text{-}s\ (\mathbf{CCl}) \end{array}$$

   The same form should be produced in the 3. pers., 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*:

	$\surd$*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*$_1$*es* (f.g.)	*ās-a* ← IE **h*$_1$*e-h*$_1$*os-e*	to be
ah		*āh-a*	to say
āp (redupl.)	**h*$_1$*e-h*$_1$*p(-neu)*	*āp-a* ← IE **h*$_1$*e-h*$_1$*op-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).