

Morphology

Synchronic Overview

1. Categories: Nouns/adjectives, Pronouns, Verbs, Adposition/prefix/adverbs, Particles

agni ‘fire’, *sundara* ‘beautiful’

aham ‘I’, *tad* ‘that’

gacchati ‘goes’, *gata* ‘gone’, *gantum* ‘to go’

pra ‘forward’, *prati* ‘toward, re-’, *hyah* ‘yesterday’, *śvah* ‘tomorrow’, *adya* ‘today’

ca (CLIT) ‘and’, *hi* ‘for, because’

2. Number: singular, dual, plural (all inflectional categories)

agniḥ ‘fire NOM.SG.M’, *agnī* ‘fires DU’, *agnayaḥ* ‘fires PL’

aham ‘I’, *āvām* ‘we DU’, *vayam* ‘we PL’

gacchati ‘go PRS.3SG’, *gacchataḥ* 3DU, *gacchanti* 3PL

3. Gender (nouns, adjectives, pronouns, other than personal pronouns):
 masculine, neuter, feminine
 (masculine and neuter tend to be identical, except for NOM, ACC)

aśvaḥ ‘horse NOM.SG.M’, *aśvā* ‘mare NOM.SG.F’, *yugam* ‘yoke
 NOM/ACC.SG.N)

sundaraḥ ‘beautiful NOM.SG.M’, *sundarī* F, *sundaram* N

saḥ, sā, tad ‘this, that’

4. Case (nouns/adjectives, pronouns): 7 cases

NOM, ACC, INS, DAT, ABL, GEN, LOC (+ VOC, in SG only ...)

5. Case/Number arrangement

	SG	DU	PL
NOM	agniḥ	agnī	agnayaḥ
ACC	agnim	agnī	agnīn
INS	agninā	agnibhyām	agnibhiḥ
DAT	agnaye	agnibhyām	agnibhyaḥ
ABL	agneḥ	agnibhyām	agnibhyaḥ
GEN	agneḥ	agnyoḥ	agnīnām
LOC	agnau	agnyoḥ	agniṣu
(VOC	agne	[agnī	agnayaḥ])

GEN and ABL singular are distinct in the “thematic” *a*-stems, the personal pronouns, and the masculine/neuter of the demonstrative pronouns

6. Person (pronouns, verbs): 1, 2, 3

aham ‘I’ : *tvam* ‘you SG’ (*saḥ, sā, tad* **DEM** $\approx$ ‘he, she, it’)

gacchāmi ‘I go’, *gacchasi* ‘you SG go’, *gacchati* ‘goes’

Reflexive – *ātman-* *‘body’ $\rightarrow$ ‘self’

Politeness – *bha(ga)va(n)t-* *‘(your) lordship’, starting in Epic Prose

7. Person/Number agreement marking

	SG	DU	PL
1	gacchāmi	gacchāvaḥ	gacchāmaḥ
2	gacchasi	gacchathaḥ	gacchatha
3	gacchati	gacchataḥ	gacchanti

8. Inflectional classes (nouns/adjectives and verbs)

Most productive: “thematic” class in *-a-*

aśv-a- ‘horse’, *bhar-a-ti* ‘carry PRS.3SG’).

Other nominal “vowel” classes:

aśv-ā- ‘mare’, *agn-i-* ‘fire’, etc.

“Athematic” and “root” classes

kar-tr- ‘doer, agent’, *kṛ-ṇo-ti* → *kar-o-ti* ‘does, makes’

viś- ‘people, clan’ (*viṣ* NOM.SG.F), *as-* ‘be’ (*as-ti* PRS.3SG)

9. Voice: The basic distinction is between “parasmaipada” and “ātmanepada”

(The term “active” tends to be used in western approaches to designate two different phenomena. One is active (in contrast to “middle/mediopassive”) – a morphological distinction. The other is active or non-passive (vs. passive) – a morphosyntactic distinction. To avoid confusion, use of the Sanskrit terms parasmaipada and ātmanepada for the morphological distinction is helpful.)

Early Vedic: When there is a contrast, ātmanepada is reflexive/reciprocal; parasmaipada is nonreflexive or unmarked

Some verbs obligatorily take ātmanepada, others parasmaipada
(e.g. *ās-te* ‘sit PRS.ĀTM.3SG, *as-ti* ‘be PRS.PAR.3SG)

Later Vedic introduces the (quasi-)reflexive pronoun *ātman-* and ātmanepada marking becomes redundant

Post-Vedic (Epic): ātmanepada marking becomes variant of parasmaipada marking

- a. *ā tvām ṛjīśvā sakhyāya*
 forward you.ACC.SG PN.NOM.SG.M friendship.DAT.SG.N
cakre (RV 5.29.11c)
 make.PRF.ĀTM.3SG
 ‘Ṛjīśvan made you for himself for friendship.’
- b. *ṛjṛāśvam ... pitā (a)ndhām*
 PN.ACC.SG.M father.NOM.SG.M blind.ACC.SG.M
cakāra (RV 1.116.16b)
 make.PRF.PAR.3SG
 ‘(His) father made Ṛjṛāśva blind.’
- c. *tābhir vai sá ātmānam*
 DEM.INS.PL.F PCL DEM.NOM.SG.M REFL.ACC.SG.M
āprīṇīta (TS 5.1.8.3)
 please.IMPF.ĀTM.3SG
 ‘With these he pleased himself.’
- d. *(yád yajamānabhāgām prāśnāty)*
 in.that sacrificer’s.portion.ACC.SG.M eat.PRS.ACT.3SG
ātmānam ēvā prīṇāti (TS 1.7.5.2)
 REFL.ACC.SG.M EMPH please.PRS.PAR.3SG
 ‘(In that he eats the sacrificer’s portion,) he pleases himself.’

- 9a. Passive: Special morphology only for the present system (suffix *-ya-*) and for AOR.3SG (marked by *-i*); elsewhere ātmanepada forms are used

Examples (root *kṛ-* ‘do’, 3SG forms)

PRS.PAR	<i>kar-o-ti</i>
PRS.ĀTM	<i>kur-u-te</i>
PRS.PASS	<i>kri-ya-te</i>
AOR.PAR	<i>a-kaḥ/a-kār-ṣ-ī-t</i>
AOR.ĀTM	<i>a-kṛ-ta</i>
AOR.PASS	<i>a-kār-i</i>
FUT.PAR	<i>kar-i-ṣya-ti</i>
FUT.ĀTM	<i>kar-i-ṣya-te</i>
FUT.PASS	<i>kar-i-ṣya-te</i>

9b. Anticausative: form-identical with the passive; different syntax

tatra gatvā na muc-ya-se (tena)
there go.CVB NEG free.PRS.PASS.2SG DEM.INS.SG.M
'(He_i) having gone there you are not freed by him_i.'

*tatra gatvā na muc-ya-se tena**
there go.CVB NEG free.PRS.ANTICAUS.2SG
'(You_i) having gone there you_i do not get free.'

In some Vedic texts (e.g. RV), the anticausative differs from the passive in terms of accent – *múc-ya-se* vs. *muc-yá-se*

10. Tense: Present system (present, imperfect), perfect, aorist, future system (future, conditional), There is also a second future formation, built on an agent noun in *-tṛ-*, with forms of BE added in the first and second persons

The present and future take present-tense morphology (“primary endings”)

The imperfect, aorist, and conditional take past-tense morphology (“secondary endings”), as well as a prefixed “augment” *a-*

The perfect has its own morphology (at least in parasmaipada) as well as reduplication

Examples (root *kṛ*, PAR.3SG forms)

PRS	<i>kar-o-ti</i>
IMPF	<i>a-kar-o-t</i>
PRF	<i>ca-kār-a</i>
AOR	<i>a-kaḥ/a-kār-ṣ-ī-t</i>
FUT	<i>kar-i-ṣya-ti</i>
COND	<i>a-kar-i-ṣya-t</i>
FUT II	<i>kar-tā (kar-tā- 'smi 1SG)</i>

- In (Classical and) Epic Sanskrit, imperfect, perfect, and aorist are used interchangeably in narratives to indicate PAST. (The aorist is rare and tends to be confined to roots in long vowel, as in *a-dā-t* ‘gave’.)
- In this function the finite past tenses compete with the *ta*-participle used as main verb (such as *kṛ-ta-* ‘done’), which takes ergative alignment. (This use begins already in Vedic, and even the Rig Veda has some probable instances.)
- So, in Post-Vedic a past event could be expressed in all of these different forms, without there being a clear distinction

devadattaḥ kaṭam a-kar-o-t IMPF
devadattaḥ kaṭam ca-kār-a PRF
devadattaḥ kaṭam a-kār-ṣ-ī-t AOR
devadattena kaṭaḥ kṛ-ta-ḥ *ta*-PPL
 ‘Devadatta made a mat.’

- In Vedic Prose, aorist indicates an antecedent past (perfect in reference to present, pluperfect in reference to past); imperfect and perfect are used as narrative past, with different Vedic traditions preferring one or the other
- Some perfect structures (especially $\bar{A}TM$) can be used in present-tense or tenseless stative value, and for some perfects there is a pluperfect formation, employing past-tense morphology
- In addition, the *ta*-participle is beginning to be used as main verb in past-tense value

- For the Rig Veda, many scholars assume aspectual distinctions between present/imperfect (imperfective), perfect (stative), and aorist (perfective)
- Traces of such distinctions are especially evident in stative (ĀTM) perfects and perhaps also in modal formations, but there are (late) passages that follow the Vedic-Prose pattern

*tāsmād áśvā **ajāyanta*** IMPF

yé ké cobhayādataḥ

*gāvo ha **jajñire** tāsmāt* PRF

*tāsmāj **jātā** ajāvāyaḥ* *ta*-PPL

‘From him (the primordial puruṣa) were born the horses,

And whoever (have) two rows of teeth,

The cows arose from him indeed,

From him (were) born the goats and sheep (RV 10.90.10)

- Pāṇini –
 - Imperfect: unmarked past
 - Aorist: antecedent action (this apparently also the unmarked value of the *ta*-participle)
 - Perfect: past events not personally witnessed (“evidentiality”)

11. Mood:

- Indicative
- Imperative
- Optative
- Subjunctive (Vedic only)
- Its first persons are later integrated into the Imperative paradigms

gacchāni	gacchāva	gacchāma
gaccha	gacchatam	gacchata
gacchatu	gacchatām	gacchantu

- Injunctive, formally an un-augmented past tense – aorist or imperfect (in Vedic this formation may be unmarked for tense and mood; in Vedic and “correct” Post-Vedic it is used with *mā* in prohibitions)

IMPV *gaccha* ‘go!’

INJ *mā gamah* ‘don’t go’ vs. AOR *a-gamah*

NEG.IMPV *mā gaccha* ‘don’t go’ (Epic, “relaxed”)

- In early Vedic, imperatives, optatives, subjunctives, and injunctives can be made from all tense stems (except, generally, the future), with possibly some aspectual differences
- In post-Vedic, the imperative and optative are only formed from the present-system stem, and the injunctive is (preferably) made from the aorist stem

12. “Secondary conjugation” (verbal derivation)

Causative, desiderative, and intensive (indicating repeated or intense action)

(Also: denominatives)

Causative

Western approaches assume a causative suffix *-aya-* (which undergoes various changes), plus a morphologically unrelated reduplicated aorist

Pāṇini assumes an element *-i-* that undergoes *guṇa* in certain formations, e.g. when followed by the thematic present suffix *-a-*, yielding */-e-a/* → *-ay-a-*

Further, he considers root + causative *-i-* to be a root in its own right and derives the reduplicated aorist from this root

This approach has the advantage of considering aorist and the other formations of the causative to be morphologically related

Moreover, it accounts for the fact that the element *-p-* which for many roots in *-ā* precedes the causative element also occurs in the reduplicated aorist

PRS.3SG *kār-ay-a-ti*

PRF.3SG *kār-ay-ām cakāra*[†]

FUT.3SG *kār-ay-i-ṣya-ti*

AOR.3SG *a-cī-kar-a-t*

[†] Post-Vedic also *āsa* ‘was’

dā-p-ay-a-ti

dā-p-ay-ām cakāra[†]

dā-p-ay-i-ṣya-ti

a-dī-di-p-at

Passive

- Western approaches generally consider the passive in *-ya-* to be a secondary conjugation as well
- However, unlike the causative, desiderative, and intensive, the passive suffix *-ya-* does not form a full paradigm but is limited to the present system
- Moreover, while the suffix sequences in (a) – (d) are possible, the sequences in (e) and (f) are not. The passive suffix, thus, is not on a par with the other “secondary” suffixes. (There is no causative built on a passive)

- | | |
|--|-----------------|
| (a) <i>kār-ay-i-ṣa-ti</i> ‘desires to cause to do’ | (CAUS – DESID) |
| (b) <i>ci-kīr-ṣ-ay-a-ti</i> ‘causes to want to do’ | (DESID – CAUS) |
| (c) <i>kār-ya-te</i> ‘is caused to do’ | (CAUS – PASS) |
| (d) <i>ci-kīr-ṣ-ya-te</i> ‘is desired to do’ | (DESID – PASS) |
| (e) <i>kri-ya-s-a-te</i> ‘desires to be done’* | (PASS – DESID*) |
| (f) <i>kri-ya-ay-a-ti</i> ‘causes to be done’* | (PASS – CAUS*) |
| cf. <i>kri-ya-te</i> ‘is done’ | |

13. Nonfinite verbal formations –

- infinitives (also: verbal nouns)
- participles from tense stems and from the *-ya*-passive
- gerundives/obligationals
- *ta*-participles
- converbs (a.k.a absolutives, gerunds)
- Participles from tense stems exhibit the same voice distinctions as their corresponding finite forms

gacch-a-ti : *gacch-a-(n)t-*

kri-ya-te : *kri-ya-māṇa-*

kar-i-ṣya-ti : *kar-i-ṣya-(n)t*

ca-kār-a : *ca-kṛ-va(m)s/-uṣ-*

The most common suffixes of the gerundive are *-ya-* (with the weakest form of the root or with *vṛddhi*) and *-tavya-* (with *guṇa* of the root)

kār-ya- ‘to be done’, *kar-tavya-* (id.)

Roots in short vowel (*i, u, ṛ*) insert *t* before *-ya-*

kṛ-t-ya- ‘to be done’

The *ta*-participle is normally made from the weakest form of the root, but causatives retain the *guṇa* or *vṛddhi* of the finite forms (and the desiderative retains its own stem formation)

kṛ-ta- ‘done’

kār-i-ta- ‘caused to be done’

(*ci-kār-ṣ-i-ta-* ‘desired to be done’)

The converb (generally antecedent-past function) takes the suffix *-tvā* when derived from the simple root, but the suffix *-ya-* when derived from a combination of prefix + root. (Epic Sanskrit tends to be less strict.)

The root is in its weakest form. Roots in *ĩ*, *ũ*, *ṛ* insert *t* before the suffix *-ya-*.

kṛ-tvā ‘having done’

pra-kṛ-t-ya ‘having accomplished’

(There is also a present converb in *-am*, but this is much rarer.)

Of the nonfinite forms, the *ta*-participle and the gerundive commonly are used as main verbs (with or without BE).

<i>devadattena</i>	<i>kaṭaḥ</i>	<i>kṛtaḥ</i>
D.INS.SG.M	mat.NOM.SG.M	do.ta-PPL.NOM.SG.M
‘Devadatta made a mat / a mat was made by Devadatta’		

<i>devadattena</i>	<i>kaṭaḥ</i>	<i>kartavyaḥ</i>
D.INS.SG.M	mat.NOM.SG.M	do.GDV.NOM.SG.M
‘Devadatta has to/should/will make a mat.’		

Further, the *ta*-participle and the converb feature prominently as nonfinite means of subordination

14. Prefix-verb compounds are used frequently. Some of these are semantically transparent, some are opaque and/or lexicalized. In some cases, their valency differs from that of their simple counterparts. One of the prefixes (*sam-*) tends to have completive function, and in that function is always placed initially, before any other prefixes

gacchati ‘goes’

tiṣṭhati ‘stands’

bhavati ‘is, becomes’

gacchati (w. ACC)

ā-ga-ta-ḥ ‘come PPL’

ā-gacchati ‘comes’

upa-tiṣṭhati ‘stands near; **serves**’

sam-bhavate ‘unites (w. INS)’

sam-bhavate ‘makes love (w. ACC)’

sam-gacchati ‘unites (w. INS)’

sam-ā-ga-ta-ḥ ‘come COMPL, arrived’

15. “Serial verbs” (Hock 2002, 2024)

éta + *u nv* *índram* *stávāma*
come.IMP.2PL PCL Indra.ACC.SG.M praise.SBJV.1PL
‘Come now, let us praise Indra.’ (RV 8.24.19)

bhákṣa + *éhi* *mā* + *ā viśa*
food.VOC.SG come.IMP.2SG I.ACC.CLIT enter.IMP.2SG
‘Come, food, enter me.’ (TS 3.2.5.1)

[á]sti *ná* *kárma* *lipyate* ...
be.PRS.3SG NEG karma.NOM.SG.N smear.off.PRS.3SG
‘It is (a fact that) karma does not smear off ...’
Or: ‘Indeed, karma does not smear off.’ (Īśa Up. 2)

Uniclausality –

imām *saméta* *páśyata*
DEM.ACC.SG.F come.together.IMV.2PL look.IMV.2PL
‘Come, look at her.’ (RV 10.85.33b)

16. Āmredita – doubling with intensive or iterative function

In accented Vedic texts, only the first part of the structure is accented

divé-dive

day.LOC.SG.N-day.LOC.SG.N

‘day by day’

In Vedic, the structure cannot be interrupted by second-position particles; rather, these have to follow

píba-piba + *íd* *índra*
drink.IMV.2SG-drink.IMV.2SG EMPH indra.VOC.SG.M
śūra *sómam*
hero.VOC.SG.M soma.ACC.SG.M (RV 2.11.11a)
‘Drink, drink = Keep drinking the soma, O hero Indra.’

saṁghātáṁ-saṁghātáṁ *vā́va*+ *eténa*
strike.CVB-strike.CVB PCL this.INS.SG.N
yájamāno *bhrā́trvyam* *jayati*
sacrificer.NOM.SG.M rival.ACC.SG.M defeat.PRS.3SG (MS 4.1.6)
‘Striking again and again with this, the sacrificer defeats his rival.’

Verbal āmreḍitas have an affinity with Intensives (Grieco 2023)

pacati-pacati

cook.PRS.3SG-cook.PRS.3SG

‘he keeps cooking’

≈

pā-pac-a-ti

cook.INTENS.PRS.3SG

‘he keeps cooking’

17. Ablaut in nominal and verbal paradigms

- i. Thematic verbs: traces of PIE *e/o* ablaut (**Brugmann's Law**)

(gacch-ā-mi)	gacch- ā -vaḥ	gacch- ā -maḥ
gacch-a-si	gacch-a-thaḥ	gacch-a-tha
gacch-a-ti	gacch-a-taḥ	gacch-a-nti

- ii. Athematic verbs: PRS.SG.PAR has guṇa, everything else has the weak form (except subjunctive and certain imperative forms)

ás-mi	s-váḥ	s-máḥ
ási	s-tháḥ	s-thá
ás-ti	s-táḥ	s-ánti

Some verbs have vṛddhi in PAR.SG

mārṣ-mi	mṛṣ-váḥ	mṛṣ-máḥ
etc.		

Root in optative

s-yā́-m

s-yā́-ḥ

s-yā́-t

s-yā́-va

s-yā́-tam

s-yā́-tām

s-yā́-ma

s-yā́-ta

s-y-úḥ

Suffix ablaut

kṛ-ṇṓ-ti PRS.PAR.3SG

kṛ-ṇu-té PRS.ĀTM.3SG

kṛ-ṇv-ánti PRS.PAR.3PL

kṛ-ṇv-áte PRS.ĀTM.3PL

But Optative

PARASMAIPADA

kṛ-ṇu-yā́-m

kṛ-ṇu-yā́-va

kṛ-ṇu-yā́-ma

ĀTMANEPADA

kṛ-ṇv-ī-y-á

kṛ-ṇv-ī-váhi

kṛ-ṇv-ī-máhi

Note also thematic optative *bhar-e-t* /bhar-a-ī-t/

iii. Athematic nouns: vṛddhi vs. guṇa vs. weak forms (or no variation)

Most common pattern

	SG	DU	PL
NOM	pitā́	pitárau	pitáraḥ
ACC	pitáram	pitárau	pitṛṇ
INS	pitrá	pitṛbhyām	pitṛbhiḥ
DAT	pitré	pitṛbhyām	pitṛbhyaḥ
ABL	pitúḥ	pitṛbhyām	pitṛbhyaḥ
GEN	pitúḥ	pitróḥ	pitṛṇām
LOC	pitári	pitróḥ	pitṛṣu

Brugmann effect

	NOM	bhrātā	bhrātārau	bhrātāraḥ
	ACC	bhrātāram	bhrātārau	bhrātṛn
vs.	LOC	bhrātari		

iv. i- and u-stems

	SG	DU	PL
NOM	agn-í-ḥ	agn-í̇	agn-áy-aḥ
ACC	agn-í-m	agn-í̇	agn-í̇-n
INS	agn-í-nā	agn-í-bhyām	agn-í-bhiḥ
DAT	agn-áy-e	agn-í-bhyām	agn-í-bhyaḥ
ABL	agn-é-ḥ	agn-í-bhyām	agn-í-bhyaḥ
GEN	agn-é-ḥ	agn-y-óḥ	agn-i-ṇām
LOC	agnā/au	agn-y-óḥ	agn-í-ṣu

Two nouns have a different GEN SG: *áv-y-aḥ*, *ar-y-áḥ*, preserving a different original pattern

Some diachronic remarks on morphology

- How old is the rich system of Sanskrit?
 - Nominal case system: much simpler in Hittite, but also in most of IE, excepting Avestan and (early) Baltic and Slavic

But traces of a richer system persist in various IE languages

See also below on *bh*-cases

- Distinct FEM: not in Hittite, but in rest of IE, where it looks like an innovation
- Dual: not a live category in Hittite, but alive in Greek, Baltic, Slavic, traces in Germanic

Difference from Greek: Dual regularly used for both natural and accidental pairs

- Optative and Subjunctive: not in Hittite, alive in Greek; elsewhere the distinction tends to get lost
- Tense/aspect system: very different in Hittite (no aorist, no perfect, but a distinction between a *mi*- conjugation and a *hi*-conjugation)

The rest of IE suggests that this distinction is old

Greek preserves aspectual differences better than Sanskrit, which is moving to a tense system

- “Pada”- or *bh*-cases (e.g. *agni-bhiḥ* INS.PL.M): Hittite quite different; most of the rest of IE has dialectal difference between *bh*- and *m*-suffixes (but *bh* in pronominal DAT.SG in Slavic)

Many different theories

Greek only has a clitic-like particle *-phi* which attached to noun stems (as in *bíē-phi* ‘by force’, *naû-phi* ‘from the ship/ships’; in Mycenaean Greek, *-pi* only occurs in plural contexts)

In Sanskrit, consonant-stem nouns take **word-final sandhi** before the *bh*-endings (e.g. *viś-* ‘clan, people’, NOM.SG *viṭ*, INS.PL *viḍ-bhiḥ*, not *vī-bhiḥ**)

Possible explanation: *bh*- and *m*-markers started out as clitics that got unverbated with their host nouns in different IE languages, with different choices, but *=bhi* > *-phi* remained extraparadigmatic in Greek

Additional note: In Classical Sanskrit, the definition of pada-case tends to get extended to the locative plural *-su* (i.e. all case suffixes with initial consonant)

Hence RV – ŚB *vikṣu* ‘clan LOC.PL’ vs. Class. *viṭsu* (like *viḍ-bhis* etc.)
/viś-su/ → *vikṣu* like /veś-sya-ti/ → *vekṣyati* ‘will enter’

But *haviṣṣu* (~ *haviḥṣu*) etc. retain internal sandhi, with retroflexion of
/-su/ → *-ṣu*

- Some remarkable morphological phenomena

- Replacement $\bar{a} \rightarrow au$: in dual, LOC.SG of *i*-stems, PRF.PAR.1/3SG of roots in $-\bar{a}$

$aśv\bar{a} \rightarrow aśvau$ ‘two horses’

$*agnāi > agnā \rightarrow agnau$ ‘in the fire’

$*da-dhaH-a > dadhā \rightarrow dadhau$ ‘I/he/she/it placed’

Many different theories, none generally agreed upon (survey by Dawson 2005)

Possible factors

- Vedic sandhi alternation $-au \sim -\bar{a}$ (with $-\bar{a}$ esp. before *u*)

Hence LOC.SG of *u*-stems $-au \sim \bar{a}$

Transfer to *i*-stems, where $*-\bar{a}i > -\bar{a}$ (*u*-stem $\bar{a} \sim au$: *i*-stem $\bar{a} \sim X$)

Further extension to other categories ??

- Numeral for ‘8’: $aṣṭau \sim aṣṭā$, where Gothic *ahtau* supports original diphthong

- First person active forms: $-\bar{a}-mi$ (PRS.PAR.IND) $-\bar{a}(-ni)$ (PRS.PAR.SBJV)
 - Original form for both: $-\bar{a} < *-\bar{o} < *-o-h_2$ (cf. Hitt. $-a-hh-i$)
 - IND: Extension from athematic $-mi$ (e.g. $k\bar{r}-\eta o-\mathbf{mi}$ ‘I do’)

Hence $*-\bar{a} \rightarrow -\bar{a}-mi$

- SBJV: Why $-\bar{a} \rightarrow -\bar{a}-ni$??

- Nasal insertion: NOM/ACC.PL of neuter nouns

PIE $*yug-e-h_2 > yug-\bar{a}$ ‘yokes’ $\rightarrow yug-\bar{a}-n-i$

$*men-es-h_2 > *man-as-i$ ‘minds’

$*men-\bar{o}s(-h_2) > *man-\bar{a}s(-i)$ ‘minds’

$\rightarrow man-\bar{a}-\dot{m}-s-i$

PIE $*Hnom-\underline{n}-h_2 > n\bar{a}m-\bar{a}$

$*Hnom-\bar{o}n-h_2 > n\bar{a}m-\bar{a}n-i$

Analogy:	n -stem	a -stem
	$-\bar{a} \sim -\bar{a}ni$	$\bar{a} \sim X = -\bar{a}ni$

Reanalysis: a -stem $-\bar{a}ni$ (re)analyzed as $-\bar{a}-n-i$

Extension: n -insertion extended to other nouns, such as $man-\bar{a}-\dot{m}-si$

- Optative paradigm: Extension of -e- in thematic optative

Expect $*-o-ih_I- > *-oi- > e / __ C, ay / __ V$

<i>bhar-e-y-am</i>	<i>bhar-e-va</i>	<i>bhar-e-ma</i>
<i>bhar-e-ḥ</i>	<i>bhar-e-tam</i>	<i>bhar-e-ta</i>
<i>bhar-e-t</i>	<i>bhar-e-tām</i>	<i>bhar-e-y-uḥ</i>

(Constraint on vowel clusters)

Similar phenomenon in parasmaipada optative -ī-

- -uh: OPT.PAR.3PL/PRF.PAR.3PL and GEN/ABL.SG of *r*-stems

Synchronically, the endings are ambiguous between /-ur/ and /-us/

Diachronically, they derive from $*\text{-}\underline{r}\text{-}s > *\text{-}\underline{r}\text{-}\check{s}$ (Avest. $-\partial r\partial\check{s}$) $> *\text{-}\underline{r}\text{-}\check{z}$
 $> r\check{z} > *\text{-}\dot{r}\text{-}r > -ur$ ($> -uh$ / $__\{ [-\text{voice}] / \#\#\}$)

In the perfect, $*\text{-}\underline{r}\text{-}$ is a Ø-grade form of an ending $*\text{-}er$ (Av. $-\text{ar}\partial$, Lat. $-\bar{e}re$) which originally was a perfect plural ending, and $-s$ looks like a plural marker added in Indo-Iranian

The *r*-stem ending is simply $*\text{-}\underline{r}\text{-}$ (Ø grade of suffix $*\text{-(}t\text{)er-}$) plus $*\text{-}s$ (Ø-grade of GEN.SG suffix $*\text{-}es/os$)

- Ablaut

- Full grade vs. Ø grade (guṇa vs. weak form)

In verbs: a generally tight correlation between accent and full grade/guṇa and lack of accent and Ø-grade/weak form

ás-mi

ási

ásti

s-váh

s-tháh

s-táh

s-máh

s-thá

s-ánti

In some kinds of nouns there is a similar correlation, e.g. $\acute{a}(r)$, $\acute{a}r$ vs. $-r-\acute{V}$ in the singular paradigm of *pitṛ́* ‘father’, but beyond that there are problems

NOM	pit ^á	pit ^á rau	pit ^á rah
ACC	pit ^á ram	pit ^á rau	pit ^ṛ n
INS	pit ^r á	pit ^ṛ bhyām	pit ^ṛ bhiḥ
DAT	pit ^r é	pit ^ṛ bhyām	pit ^ṛ bhyaḥ
ABL	pit ^ú ḥ	pit ^ṛ bhyām	pit ^ṛ bhyaḥ
GEN	pit ^ú ḥ	pit ^r óḥ	pit ^r ṇām
LOC	pit ^á ri	pit ^r óḥ	pit ^ṛ ṣu

Different theories about pre-PIE propose more tightly correlated systems, but evidently, paradigmatic leveling has obscured these

- Passive and anticausative in *-ya-*
 - No passive reconstructable for PIE
 - But evidence for anticausative in *-ya-* (Grestenberger 2024)
 - The Sanskrit passive most likely is based on an older anticausative

- “Serial Verbs”

- IE counterparts, especially in Hittite (Hock 2002, 2013, different: Yates 2014)

Gk. ***dôra** d' ág' alléloisi periklutà dōomen ámphō* (Il. 7. 299)
'But come, let us give glorious gifts to each other.'

Hitt. *nu=(u)š=apa uwizzi zin/nai* (KUB I 16 II 24)
'And he will come and destroy them.'

Ved. ***imān** saméta páśyata* (RV 10.85.33b)
'Come, look at her.'

- Vedic “serial verbs” likely to be inherited

- “Āmreḍita”

- Intensive/iterative whole-word duplications are widespread in IE languages

Avest. *nmāne nmāne visi visi* ‘in every home, in every clan’

Myc. Gk. *we-te-i we-te-i* ‘year after year’

Hitt. *MI-ti MI-ti=ma* ‘but night after night’

- But they are not as common as in Sanskrit
- and they don’t seem to involve verbs
- So it looks like the category became productive in Sanskrit
- At the same time, Hitt. *MI-ti MI-ti=ma* shows that clitics follow the entire structure, as in Sanskrit

Development of new paradigms by fusion

- The demonstrative pronoun *ayam/idam*

	SINGULAR		PLURAL	
	MASC	NEUT	MASC	NEUT
NOM	<i>ayám</i>	<i>idám</i>	<i>imé</i>	<i>imāni</i>
ACC	<i>imám</i>	<i>idám</i>	<i>imān</i>	<i>imāni</i>
INS	<i>enā/anéna</i>	<i>enā/anéna</i>	<i>ebhíḥ</i>	<i>ebhíḥ</i>
DAT	<i>asmaí</i>	<i>asmaí</i>	<i>ebhyáḥ</i>	<i>ebhyáḥ</i>
ABL	<i>asmād</i>	<i>asmād</i>	<i>ebhyáḥ</i>	<i>ebhyáḥ</i>
GEN	<i>asyá</i>	<i>asyá</i>	<i>eṣām</i>	<i>eṣām</i>
LOC	<i>asmín</i>	<i>asmín</i>	<i>eṣú</i>	<i>eṣú</i>

- Two pronoun roots: **i-* and **e/o-*
- plus originally emphasizing **-ém* (see Lat. *id* ‘it’ : *idem* ‘the same’)
- Oblique forms from **e/o-* (with some remaking)
- NOM/ACC from **i-* (with guṇa/full grade **ey* > *ay* / ___ V in NOM.SG.M)
- ACC.SG *i-m-ám* reanalyzed as *imá-* + postvocalic ACC *-m*
- Hence NOM/ACC.PL forms (*imá-* + *-i* → *imé* etc.)

- Directional adjectives

- Indo-Iranian inherited a set of adverbial forms indicating direction, such as Avest. *nyāncəm* ‘directed down’, *fracā* ‘directed forward’ (from *ni* ‘down’ and *fra* ‘forward’)
- These reflect two different kinds of adjective formations

Lat. *antīquus* < **anti-h₁k^w-o-*, where *h₁k^w* = Ø-grade of *h₁ok^w* ‘face’
propinquus < **propi-nk^w-o-*, where *-nk^w* = Ø-grade of *-enk^w*-

- In Sanskrit the two semantically similar formations were combined into a single, new paradigm

	Singular		Plural	
	MASCULINE	NEUTER	MASCULINE	NEUTER
NOM	pratyañ	pratyak	pratyañc-aḥ	pratyañc-i
ACC	pratyañc-am	pratyak	pratīc-aḥ	pratyañc-i
INS	pratī-cā	pratī-cā	pratyag-bhiḥ	pratyag-bhiḥ
DAT	pratīc-e	pratīc-e	pratyag-bhyaḥ	pratyag-bhyaḥ
ABL	pratīc-aḥ	pratīc-aḥ	pratyag-bhyaḥ	pratyag-bhyaḥ
GEN	pratīc-aḥ	pratīc-aḥ	pratīc-ām	pratīc-ām
LOC	pratīc-i	pratīc-i	pratyak-ṣu	pratyak-ṣu

Red from **prati-(e)nk^w-*, blue from **prati-h₁k^w-*