

Points of Tocharian A grammar

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1. Literature

Text editions and translations:

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*Malzahn, Melanie et al.: *A comprehensive edition of Tocharian manuscripts.*
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*Sieg, Emil and Wilhelm Siegling. 1921. *Tocharische Sprachreste, I. Band. Die Texte. A. Transcription.* Berlin / Leipzig: de Gruyter.

Sieg, Emil. 1944. *Übersetzungen aus dem Tocharischen I.* Abhandlungen der Preußischen Akademie der Wissenschaften, Jahrgang 1943, Philosophisch-historische Klasse, Nr. 16. Berlin.

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*Sieg, Emil, Wilhelm Siegling and Wilhelm Schulze. 1931. *Tocharische Grammatik.* Göttingen: Vandenhoeck & Ruprecht.

Dictionaries:

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Thomas, Werner. 1964. *Tocharisches Elementarbuch, II. Texte und Glossar.* Heidelberg: Winter.

¹ http://www.gerdcarling.se/Homepage/Download-File/f/1158998/h/50e7ebce7febb5c9f4d150eec9cf8699/TocharianADictionary_Carling_Winter_Pinault_2009_Preprint

2. Place

Tocharian A manuscripts were found in Qarašähär / Yānqí region and in Turfan region, in the Northeast of present-day Xīnjiāng, Northwest China. Fragments of secular texts from Yānqí (most important site: Šorčūq), viz. THT1017, 1487 and 1488,² and monstary accounts, THT 4022 and 4023, suggest TA is originally from there. See also on the name of the language (§4).



3. Time

Tocharian A is more recently attested than Tocharian B. Tocharian A manuscripts date from ca. the 8th to 11th centuries CE.

- TA script is more recent variant of Tocharian B script
- TB loanwords show later TB developments, e.g. TB *šcmoñña* ‘basis’ > late *šmoñña* → TA *šmoññe*

Tocharian A must have been actively known long enough to have been so prominent in early Old Uyghur Buddhism (10th century, possibly earlier?).

4. Name of the language

“Tocharian” is a wrong name. It is based on the Old Uyghur name for the language, *tohri tili* ‘*tohri* language’. Speakers of Tocharian A are unrelated to Iranians in Afghanistan called “Tocharians” (Gr. *τόχαροι*). The native name is *ārši-käntu* ‘*Ārši* language’. *Ārši* is probably identical to Skt. *Agni* and Chin. *Yānqí*, denoting the ancient kingdom of Yānqí.

5. Tocharian B

Tocharian A is influenced by the neighbouring language Tocharian B. Tocharian B is attested from the 5th century onwards in Kuča region. Later, in the 7th century, it spread east to Yānqí and Turfan. All TA manuscripts are found side by side with TB manuscripts. The TA script has been taken over from TB, as well as several loanwords. The literary traditions show little overlap.

6. Proto-Tocharian and Proto-Indo-European

The Tocharian languages are Indo-European and go back to a common intermediate ancestor called Proto-Tocharian. The age of Proto-Tocharian is unknown. Its break-up is often estimated at 1000–500

² Ogihara, Hirotoshi. 2014. Fragments of secular documents in Tocharian A. *Tocharian and Indo-European Studies* 15:103–129.

BCE. It is now widely agreed that Tocharian A and B, though closely related, are different enough to be called languages.

7. Script

Tocharian A, Tocharian B, the Sanskrit of the region, and several other languages (Tumšūqese, some Old Uyghur and Sogdian) use the same variant of the Brāhmī script. Consonants have an inherent short *a*; other vowels are indicated with diacritics. The vowel *ä* may be indicated with a diacritic or with a special consonant sign, i.e. <ka> = *kä*. The script is written from left to right; the vowel diacritics are mostly on top of the akṣaras; consonant clusters are written downward. There is no word division. At the end of the line, words can be continued on the next line without special marking. The end of one word may be written together with the beginning of the next in one akṣara.

		Vokale						
Einf. Vokale	𑖀	𑖁	[𑖂]	𑖃	𑖄	𑖅	𑖆	𑖇
	<i>a</i>	<i>ā</i>	<i>ä</i>	<i>i</i>	<i>ī</i>	<i>u</i>	<i>ū</i>	<i>ṛ</i>
Diphthonge	𑖈	𑖉	𑖊	𑖋				
	<i>e</i>	<i>ai</i>	<i>o</i>	<i>au</i>				
		Konsonanten						
Velare	𑖌	[𑖍]	(𑖎)	𑖏	(𑖐)	𑖑	𑖒	𑖓
	<i>ka</i>	<i>kā</i>	<i>kha</i>	<i>ga</i>	<i>gha</i>	<i>ṅa</i>		
Palatale	𑖔		(𑖕)	𑖖	(𑖗)	𑖘	𑖙	𑖚
	<i>ca</i>		<i>cha</i>	<i>ja</i>	<i>jha</i>	<i>ña</i>		
Cerebrale	(𑖛)		𑖜	𑖝	(𑖞)	𑖟	𑖠	𑖡
	<i>ṭa</i>		<i>ṭha</i>	<i>ḍa</i>	<i>ḍha</i>	<i>ṇa</i>		
Dentale	𑖢	[𑖣]	(𑖤)	𑖥	(𑖦)	𑖧	𑖨	[𑖩]
	<i>ta</i>	<i>tā</i>	<i>tha</i>	<i>da</i>	<i>dha</i>	<i>na</i>		<i>nā</i>
Labiale	𑖪	[𑖫]	(𑖬)	𑖭	(𑖮)	𑖯	𑖰	[𑖱]
	<i>pa</i>	<i>pā</i>	<i>pha</i>	<i>ba</i>	<i>bha</i>	<i>ma</i>		<i>mā</i>
Halbvokale u. Liquiden	𑖲		𑖳	[𑖴]	𑖵	[𑖶]	(𑖷)	[𑖸]
	<i>ya</i>		<i>ra</i>	<i>rā</i>	<i>la</i>	<i>lā</i>	<i>va</i>	<i>wā</i>
Zischlaute	𑖹	[𑖺]	𑖻	[𑖼]	𑖽	[𑖿]		
	<i>śa</i>	<i>śā</i>	<i>ṣa</i>	<i>ṣā</i>	<i>sa</i>	<i>sā</i>		
Hauchlaut	𑖾	(<i>ha</i> (§ 5 Anm. 5))						
Affrikata	[𑖿]	[𑗀]						
	<i>tṣa</i>	<i>tṣā</i>						

The order of the alphabet is:

a, ā, ä, i/ī, u/ū, e, ai, o, au, ṁ, k, kh, g, gh, ṅ, c, ch, j, jh, ñ, ṭ, ṭh, ḍ, ḍh, ṇ, t, th, d, dh, n, p, ph, b, bh, m, y, r, l, ly, v, w, ś, ṣ, s, h, ts

8. Consonants

	velar	labio-velar	palatal	retroflex	alveolar	labial
stops	<i>k</i>	<i>k^w</i> <kw, ku>	<i>c</i>		<i>t</i>	<i>p</i>
nasals	<i>ṅ</i> [ŋ]		<i>ñ</i> [ɲ]		<i>n</i> <n, ṃ>	<i>m</i>
fricative			<i>ś</i> [ɕ]	<i>ṣ</i> [ʂ]	<i>s</i>	
affricate					<i>t^s</i> <ts>	
lateral			<i>l̥</i> [ɭ] <ly>		<i>l</i>	
trill					<i>r</i>	
approximant		<i>w</i>	<i>y</i> [j]			

The transcription is based on the Sanskrit values. Most letters need no comment.

- *ṅ* only occurs before *k*; it contrasts with *ñ* and *m*, but only rarely with *n*.
- *ts* and *ly* are digraphs: the two letters (also in the Brāhmī) represent one phoneme.
- *ṃ* does not denote nasalisation, but writes *n* (rarely *ñ* before e.g. *c*).
- *c* = ca. [č].
- *ś* and *ṣ* have the same value as in Sanskrit; they are not confused in Sanskrit words.
- *w* represents a sound not present in Sanskrit, probably [w].
- *k^w* does not have a consistent spelling: <uk, ku, _uk, k_u, kw>.

Other Brāhmī consonant signs are restricted to Sanskrit words (hardly adapted borrowings), e.g. *b*, *bh*, *t*, *h* etc.

Geminates occur but are relatively rare. In morphophonology, some geminates arise from assimilation, i.e. *ññ* <ñy, śś <śy, ṣṣ <ṣy, rr <rn, ll <ln. Geminates normally do not occur in clusters, e.g. *ptāñkāt* ‘Buddha’ ~ *pättāñkāt*.

9. Vowels

	front	mid	back
closed	<i>i</i>	<i>ä</i>	<i>u</i>
mid	<i>e</i>	<i>a</i>	<i>o</i>
open		<i>ā</i>	

Remarks:

- There are no diphthongs. *ai* and *au* occur only in Sanskrit words and names.
- *a* and *ā* are different vowels not distinguished by length; <*ā*> may be [a] and <*a*> may be a more central <*ɜ*> or <*ʌ*>.
- *i* and *u* are mostly written short but may also be written long without phonologically relevant distinction.
- *i* and *u* alternate with *y* and *w*; they are here analysed as vocalic allophones of *y* and *w*.
- The presence or absence of *ä* is predictable; it will here be left out from the phonological representation.
- The accent may be initial, but it is not written or otherwise detectable.

10. *ä, i, u*

The presence or absence of *ä*, and the alternations between *i* and *y* and between *u* and *w* are predictable.

Before vowels, *y* and *w* are found; before consonants and word-finally, *i* and *u*. In sandhi before a vowel, word-final *y* and *w* are allowed.

Examples: *käntu* ‘tongue’, perl.sg. *käntwā*; *tiri* ‘manner’, perl.sg. *tiryā*.

NB: *ri* ‘town’, perl.sg. *riyā*, loc.sg. *riyaṃ* because initial *ry-* is not allowed.

ä is inserted and deleted automatically. No detailed description is available. The rules are complicated. The placement of *ä* is determined from the end of the word towards the beginning.

- Finally, few clusters are allowed, e.g. resonant + obstruent: *-rk*, *-rt*, *-rs*, *-rts*, *-lk*, *-lt*, *-lts*, *-ñk*, *-ñc*, *-nt*, *-mp*; and *-št*. Resonant-final clusters or two-stop clusters are not allowed, e.g. *-kt* → *-kät*, *-tr* → *-tär*, *-sk* → *-säk*. In the 3sg.prs, final geminate *-šš* is simplified, i.e. → *-š*.
- Medially, *ä* is never found in an open syllable: clusters have two consonants, e.g. *-tm-*, *-sk-*, or they have three consonants. Examples of three-consonant clusters: *-rks-* (resonant-initial, sibilant-final), *-rpn-*, *-tkr-* (resonant-final), *-štr-* (sibilant-initial).
- Initially, most two-consonant clusters are allowed, e.g. *tm-*, *tk-*, *śr-*, *nk-*.
- *i* and *u* instead of *y* and *w* can be analysed as special cases of *ä*-insertion: *kntw* → *kÄntÄw* = *käntu*, *tyry* → *tÄyrÄy* = *tiri*.

Examples: 3sg.prs.mid. *päknäštär* ‘ripens’, 3sg.prs.mid.-3sg.suff. *päknäštr-äm*, 3pl.prt.mid. *pkämšānt* ‘ripened’.

- päknäštär* /pknštr/: 1) final *-tr* is not allowed: → *pknštÄr*
2) *-št-* is allowed, but *-nšt-* is not allowed: → *pknÄštÄr*
3) *-kn-* is allowed: → *pÄknÄštÄr* = *päknäštär*
- päknäštr-äm* /pknštrn/: 1) final *-rn* is not allowed: → *pknštrÄn*
2) *-štr-* is allowed, but *-nštr-* is not allowed: → *pknÄštrÄn*
3) *-kn-* is allowed: → *pÄknÄštrÄn* = *päknäšträm*
- pkämšānt* /pknšānt/: 1) final *-nt* is allowed: → *pknšānt*
2) *-nš-* is allowed, but *-knš-* is not allowed: → *pkÄnšānt*
3) initial *pk-* is allowed: → *pkÄnšānt* = *pkämšānt*

ä, *i*, *u* count as syllabic in verse.

Exercise

- 1) Make the perlicative in *-ā* and the locative in *-aṃ* to the following words: *tünk* ‘love’, *ri* ‘town’, *käntu* ‘tongue’, *yökäm* ‘gate’, *masäk* ‘knot’, *maku* ‘nails’.
- 2) Attach the 3sg. suffix *-äm* to the following 3sg. verbal forms: *tränkäš* ‘says’, *eš* ‘gives’ (NB: = *ešš!*), *kärkñäš* ‘binds’, *šärsäš* ‘lets know’ (NB: = *šärsäšš!*).
- 3) Generate the following forms: /rtr/ ‘red’ (nom.m.sg.), /rtry/ ‘red’ (nom.sg.f.), /rtryän/ ‘red’ (obl.sg.f.), /tms/ ‘therefore’, /knštr/ ‘comes about’ (3sg.), /knsantr/ ‘come about’ (3pl.), /mnw/ ‘mind, will’, perl.sg. /mnwā/.

11. Vowel weakening

In Tocharian A vowel weakening, *ā* and *a* are reduced under the following conditions:

- *ā* becomes *a* after *ā*, *a*, *e*, *o*
- *a* (including *a* from *ā*) becomes *ä* (or zero!) after *ā*, *a*, *e*, *o*, and before another syllable with *ā*, *a*, *e*, *o*; sometimes *e* and *o* become *i* /*äy*/ and *u* = /*äw*/

Vowel weakening is a morphophonological process with many exceptions: synchronically, it is no longer a sound law.

In finite verbs, vowel weakening causes alternations in the second syllable when the first syllable shows ablaut, e.g. 2sg.sbj. *katkat* ‘you will cross’ vs. 2pl.sbj. *kātkāc*. Because of the full grade *a* in the first syllable of *katkat*, the second syllable is weakend, i.e. *katkat* < **katkāt*.

Categories with regular weakening to *ä* in the verb are e.g. the prs.ptc. in *-mām*, e.g. *esmām* ‘giving’ for **esamām*, and the vn in *-lune*, e.g. *kātklune* ‘rising’ for **kātkalune* < **kātkālune*. Cf. also in the prt.ptc. e.g. *kaklyuṣu* ‘heard’ for **kaklyoṣu*.

Examples from nouns are:

- *mārkampal* ‘law, dharma’, loc.sg. *mārkamplaṃ*, but next to more frequent *mārkampalaṃ*
- *āknats* ‘fool’, nom.pl. *āknatsāñ*, abstr. *āknatsune* (NB: rules for *ä* suggest rather **ākāntsāñ*, **ākāntsune*; instead we find *āktsune*)

12. Nominal inflexion

There are three genders in the noun: masculine, feminine, and alternant. The alternant has masculine agreement in the singular and feminine agreement in the plural. In the demonstratives, a fourth gender without agreement is called “neuter”.

Nouns are inflected for singular, dual and plural. The dual is rare.

There are three core, primary, inflexional cases: nominative, oblique and genitive. These cases are different for singular and plural, and the endings express number and case combined in one morpheme. The oblique is an accusative. The genitive functions as a genitive-dative. There is no separate dative.

There are six secondary, agglutinative cases: instrumental (‘with’), comitative (‘together with’), perlativ (‘through’, ‘over’), allative (‘towards’), ablativ (‘from, out of’), locativ (‘in, into’). The agglutinative case suffixes are the same in singular and plural and are attached to either the oblique singular or the oblique plural.

13. Alternant nouns

Alternant nouns never have a difference between nominative and oblique in either singular or plural. Suffixes for alternant plurals are e.g. *-u*, *-ā*, *-wā*, *-n*, *-ant*, *-ntu*. A frequent suffix is *-ant* with several cases formed from a variant *-ntu*, e.g. *pältsäk* ‘thought’:

<i>primary cases</i>			<i>secondary cases</i>		
	sg.	pl.		sg.	pl.
nom./obl.	<i>pältsäk</i>	<i>pältskant</i>	ins.	<i>pältsäkyo</i>	<i>pältskantyo</i>
gen.	<i>pältskes</i>	<i>pältskäntwis</i>	com.	<i>pältskäśśäl</i>	<i>pältskäntwaśśäl?</i>
			perl.	<i>pältskā</i>	<i>pältskäntwā</i>
			all.	<i>pältskac</i>	<i>pältskäntwac?</i>
			abl.	<i>pältskäṣ</i>	<i>pältskäntwäṣ</i>
			loc.	<i>pältskaṃ</i>	<i>pältskäntwaṃ</i>

Remarks:

- The basic stem is /plsk/. An epenthetic *t* between *l* and *s* is frequent but not regular.
- The genitive singular ending is *-is* /*ys*/. The variant *-es* is due to an historically present final stem vowel.

In plurals in *-ā*, a *k* is inserted before the genitive and the perlativ suffix in the plural, e.g. *pukäl* ‘year’, nom.obl.pl. *puklā*, gen.pl. *puklākis*, perl.pl. *puklākā*.

14. Masculine nouns

A frequent type of masculine nouns has nom.pl. *-añ*, obl.pl. *-as*. In this class, nouns denoting humans, e.g. *oñk* ‘man’, have a distinct oblique singular, while for nouns denoting non-humans, e.g. *yuk* ‘horse’, nom.sg. and obl.sg. are identical. As always, the secondary cases are formed from the oblique.

	sg.	pl.	sg.	pl.
nom.	<i>oñk</i>	<i>oñkañ</i>	<i>yuk</i>	<i>yukañ</i>
obl.	<i>oñkaṃ</i>	<i>oñkas</i>	<i>yuk</i>	<i>yukas</i>
gen.	<i>oñkis</i>	<i>oñkaśśi</i>	<i>yukes</i>	<i>yukaśśi</i>

In the secondary cases, the stem vowel *a* of the oblique may be subject to vowel weakening, i.e. perl.sg. *oñknā*, perl.pl. *oñksā*.

Loanwords from Sanskrit often form their plural in *-añ*, e.g. *ṣāmaṃ* ‘monk’:

	sg.	pl.
nom.	<i>ṣāmaṃ</i>	<i>ṣāmnāñ</i>
obl.	<i>ṣāmaṃ</i>	<i>ṣāmnās</i>
gen.	<i>ṣāmne</i>	<i>ṣāmnāśśi</i>

Remarks:

- The obl.sg. is identical to the nom.sg., even though ‘monk’ is [+HUMAN].
- The gen.sg. ends in *-e*.
- The gen.sg. and the pl. show weakening of the second-syllable *a* to zero, i.e. $^{\circ}maṃ > ^{\circ}mn-$.

There is also a class with plural in *-i*, e.g. *koṃ* ‘sun, day’:

	sg.	pl.
nom.	<i>koṃ</i>	<i>koñi</i>
obl.	<i>koṃ</i>	<i>konäs</i>
gen.	<i>konis</i>	<i>konäsśi</i>

In the basic type, palatalisation is only found in the nom.pl., e.g. *koñi*. There are also words with palatalisation throughout, e.g. *mañ* ‘moon’, which inflect otherwise the same.

15. Feminine nouns

A class for natural feminines inflects almost the same way as *ṣāmaṃ* ‘monk’, above, e.g. *śomiṃ* ‘girl’, and, for comparison, *ñäkteññā* ‘goddess’, frequent for loanwords:

	sg.	pl.	sg.	pl.
nom.	<i>śomiṃ</i>	<i>śomināñ</i>	<i>ñäkteññā</i>	<i>ñäkteññāñ</i>
obl.	<i>śomināṃ</i>	<i>śominās</i>	<i>ñäkteññāṃ</i>	<i>ñäkteññās</i>
gen.	<i>śomine</i>	<i>śomināsśi</i>	<i>ñäkteññāy</i>	<i>ñäkteññāsśi</i>

Two further feminine classes are represented by *ri* ‘town’ and *pyāpi* ‘flower’:

	sg.	pl.	sg.	pl.
nom.	<i>ri</i>	<i>riñ</i>	<i>pyāpi</i>	<i>pyāpyāñ</i>
obl.	<i>ri</i>	<i>ris</i>	<i>pyāpi</i>	<i>pyāpyās</i>
gen.	<i>riyis</i>	<i>riśśi</i>	<i>pyāpyis</i>	<i>pyāpyāsśi</i>

16. Noun phrase agreement

In the noun phrase, adjectives mostly precede the noun and agree in gender and number.

The adjective is inflected for masculine and feminine gender; alternant nouns agree with masculine adjectives in the singular and with feminine adjectives in the plural, e.g. *kāsu* [NOM.SG.M.] *wram* [NOM.OBL.SG.(A.)] ‘a good thing’ vs. *krant* [NOM.OBL.PL.F.] *wramäm* [NOM.OBL.PL.(A.)]. The adjective may be in the oblique even if the noun has no distinct oblique, e.g. *krant* [OBL.SG.M.] *wram* [NOM.OBL.SG.(A.)] ‘a good thing’.

When the noun is in a secondary case, the adjective is in the oblique, e.g. *krant* [OBL.SG.M.] *märkampal* [NOM.OBL.SG.(A.)] ‘the good law’ and *krant* [OBL.SG.M.] *märkampalaṃ* [LOC.SG.(A.)] ‘in the good law’. If the noun is in the genitive, the adjective is more frequently in the genitive than the oblique, e.g. *klyomäntāp* [OBL.SG.M.] *meträkyāp* [GEN.SG.(M.)] (frequent) or *klyomänt* [OBL.SG.M.] *meträkyāp* [GEN.SG.(M.)] (rarer) ‘of the good Maitreya’.

17. Adjective

An example of a frequent adjective type, *āštār* ‘pure’:

	sg.m.	pl.m.	sg.f.	pl.f.
nom.	<i>āštār</i>	<i>āstre</i>	<i>āstri</i>	<i>āstraṃ</i>
obl.	<i>āsträm</i>	<i>āstres</i>	<i>āštäryām</i>	<i>āstraṃ</i>
gen.	<i>āštäryāp</i>	<i>āstreśsi*</i>	<i>āštärye</i>	

Exercise

- 1) *lyäk* ‘thief’ inflects like *koṃ*. Give the plural paradigm (primary and secondary cases).
- 2) The gen.sg. of *pñi* ‘merit; *punya*’ is *pññis*. Can you explain why?
- 3) Determine the following (all attested) inflected forms of the word ‘teacher’: *käšiyāp*, *käšsi*, *käššī*, *käššim*, *käššimnac*, *käššiñ*, *käššinā*, *käššinac*, *käššinam*, *käššinäs*, *käššinyo*, *käššis*, *käššisäs*, *käššiśsi*, *käššiyāp*, *käššyāp*, *käšy*, *käšyāp*, *kšis* (Exactly this paradigm has not been given above, but all relevant distinctions occur in these paradigms.)

18. Personal pronouns

In subject function, personal pronouns need not be used, as the verb has sufficient person marking for subjects. In the 1sg., there is a distinction between masculine and feminine. The 3rd persons are supplied by the demonstratives. Only the 2sg. has a difference between nominative and oblique.

	1sg.m.	1sg.f.	2sg.	1pl.	2pl.
nom./obl.	<i>näš</i>	<i>ñuk</i>	nom. <i>tu</i> , obl. <i>cu</i>	<i>was</i>	<i>yas</i>
gen.	<i>ñi</i>	<i>nāñi</i>	<i>tñi</i>	<i>wasäm</i>	<i>yasäm</i>

Personal pronouns can take secondary case suffixes, e.g. 1sg.m.com. *nšaśśäl* ‘together with me’, 1sg.f.loc. *ñukam* ‘in you’ (e.g. *love for you*), 2sg.all. *cwac* ‘to you’.

19. Demonstrative pronouns

There are three sets of demonstratives: proximal (this one here) with marker *-s* ~ *-š*; anaphoric (the one mentioned) with marker *-m*; distal (that one there) with marker *-n* (word-finally written *-ṃ*). The demonstrative has three genders: masculine, feminine and neuter. The neuter does not correspond to the alternant of the noun, but is used for non-gender reference: it refers to whole sentences, concepts, things, etc.

	proximal			anaphoric			distal		
	m.	f.	n.	m.	f.	n.	m.	f.	n.
nom.sg.	<i>säs</i>	<i>sās</i>	<i>täṣ</i>	<i>säm</i>	<i>sām</i>	<i>täm</i>	<i>saṃ</i>	<i>sām</i>	<i>taṃ</i>
obl.	<i>caṣ</i>	<i>tāṣ</i>	<i>täṣ</i>	<i>cam</i>	<i>tām</i>	<i>täm</i>	<i>caṃ</i>	<i>tām</i>	<i>taṃ</i>
gen.	<i>caṣi</i>			<i>cami</i>	<i>temi</i>	<i>tmis</i>	<i>cani</i>		
nom.pl.	<i>ceṣ</i>	<i>toṣ</i>		<i>cem</i>	<i>tom</i>		<i>ceṃ</i>		
obl.	<i>cesäs</i>	<i>tosäs</i>		<i>cesäm</i>	<i>tosäm</i>		<i>cesäm</i>	<i>tosäm</i>	
gen.	<i>cessi</i>			<i>cesmi</i>	<i>tosmāssi</i>				

In principle, the markers *-s* ~ *-ṣ*, *-m* and *-n* are added to already inflected forms. However, the genitive deviates from this pattern, as it is formed from the oblique, being added after the marker, i.e. obl.sg.m. *caṣ*, gen.sg.m. *caṣ-i*. The same genitive suffix is used in the gen.pl.m. The gen.sg.f. *temi* consists of an original gen.sg. *te*, the marker *-m*, and another gen.sg. suffix *-i*.

20. Interrogatives and relatives

There are two interrogative pronouns, *kus* ‘what, who’ and *äntsam* ‘which’. *kus* is only used independently, not attributively, and is basically inflected only for case and not for gender and number. A nom.pl. is attested, but it is rare. *äntsam* may be used attributively and is inflected for case, number and gender. *äntsam* is rare and only few forms are attested.

	‘who, what’		‘which’		
	sg.	pl.	sg.m.	sg.f.	pl.m.
nom.	<i>kus</i>	<i>k_uce</i>	<i>äntsam</i>		
obl.	<i>kuc</i>		<i>äñcaṃ</i>	<i>äntām</i>	
gen.	<i>ke</i>		<i>äñcani*</i>		<i>äñcesni</i>

The elements *-s* and *-c* of *kus* are related to the sg.m. demonstrative *säs*, *caṣ*, but without the marker *-s* ~ *-ṣ*. The inflexion of *äntsam* is identical to that of the demonstrative *saṃ*. The interrogative element is *än-*, and the *-t-* is epenthetic. *äntsam* and related forms are the only words beginning with *ä-*.

- The stem *ku^o* is also found in the following adverbs: *k_uyal* ‘why’, *k_upre* ‘whether’, *kos* ‘how much’.
- The stem *än^o* is also found in the adverb *äntā* ‘where’, with a shortened form *tā*.
- A third stem *m^o* is only represented by the adverb *mänt* ‘how’.
- The interrogative stem *ā-* that is found in the literature is a ghost. The two occurrences are to be read with “consonantal *a*”, i.e. *antā* = *äntā* and *añcaṃ* = *äñcaṃ*.³

Relatives are formed with the suffix *-ne*, which is mostly directly following, but also occurs separated, e.g. *kusne* ‘who’ (relative), *äntāne* ‘when’ (conjunction, probably from ‘where’), *kuprene* ‘if’, *mäntne* ‘so’. The suffix is doubled in the conjunction *äntanene* ‘where’.

Exercise

- 1) What are the rules for the distribution of the variants *-s* ~ *-ṣ* of the marker of the proximal demonstrative?
- 2) Set up a full masculine paradigm of *äntsam* including singular and plural and secondary cases.
- 3) Set up full paradigms for *näṣ* and *ñuk*, including secondary cases.

³ Peyrot, Michaël. 2018. Interrogative stems in Hittite and Tocharian. *Indogermanische Forschungen* 123:65–90.

21. The verb

The Tocharian verb is complex. There are many different inflexions. An overview according to pattern frequency is given below.

There are five basic stems: present, subjunctive, preterite, preterite participle and imperative. Mostly, the present is derived with an extra suffix while the other stems are more closely related to each other.

- From the present stem are formed: present, imperfect, present participle, infinitive, present gerund.
- From the subjunctive stem are formed: subjunctive, optative.
- The preterite, preterite participle and imperative stems are the basis of the preterite, preterite participle and imperative, respectively.

The endings of the finite verb mark the subject. In addition, the object may be marked with an additional suffix. These suffixes are: 1sg. *-ñi*, 2sg. *-ci*, 3sg. *-n*, pl. *-m* (the plural form is the same for all three persons). The object markers may denote a direct or an indirect object, but only one at a time. The use of the object markers is not obligatory.

There are two types of endings: active and middle. Mostly, verbs are either active only or middle only. There is also a category of medio-actives in which mostly the present is middle only and the other stems are active only. If active and middle are contrastive, i.e. found for the same stem, the middle expresses a close relationship between the subject and the object. It may also be reflexive or passive.

Verbs may have a fixed object or adverb. The meaning of these “phrasal verbs” needs to be included in the dictionary separately, and some fixed objects and adverbs do not occur elsewhere. The voice pattern of phrasal verbs may be different from that of the simplex, non-phrasal verb.

22. Present

The present is mostly formed by means of a suffix. In the following example, it is formed from the root, *lākā-* ‘see’, present 5 |*lākā-*|. The endings are directly attached to the invariable stem, which has the shape *lkā*^o:

	sg.act.		pl.act.		sg.mid.		pl.mid.	
1	<i>lkām</i>	<i>lākā-m</i>	<i>lkāmās</i>	<i>lākā-mäs</i>	<i>lkāmār</i>	<i>lākā-mār</i>	<i>lkām̄tār</i>	<i>lākā-mtr</i>
2	<i>lkāt</i>	<i>lākā-t</i>	<i>lkāc</i>	<i>lākā-c</i>	<i>lkātār</i>	<i>lākā-tār</i>	<i>lkācār</i>	<i>lākā-cr</i>
3	<i>lkāṣ</i>	<i>lākā-ṣ</i>	<i>lkeñc</i>	<i>lākā-yñc</i>	<i>lkātār</i>	<i>lākā-tr</i>	<i>lkāntār</i>	<i>lākā-ntr</i>

Remarks:

- There is no vowel weakening of verbal endings, i.e. *lkāmār* is not changed to *lkāmar*.
- The 3pl.act. *lkeñc* shows contraction of a palatalisation of the ending with the *ā* of the stem; therefore the ending is set up as *|-yñc|*. A rare variant of this ending lacks the *-ñc*, i.e. *lke* |*lkā-y*|.

Present classes 6 and 7 are formed with a nasal element, e.g. *krāsā-* ‘know’, prs.6 |*kārs<n>ā-*| or *kātkā-* ‘cross’, prs.7 |*kāt<n>kā- > kātānkā-*|. The inflexion is identical to that of *lākā-* above.

The most frequent present class is present 8, which has a suffix *|-^{sä}/sa-*| with *-ṣä-* in the 2sg., 3sg. and 2pl. active and middle, and *-sa-* in the 1sg., 1pl. and 3pl. active and middle, e.g. *ṣtām^{caus.}* ‘put’:

	sg.act.		pl.act.	
1	<i>ṣtāmsam</i>	<i>ṣtāmsa-m</i>	<i>ṣtāmsamās</i>	<i>ṣtāmsa-mäs</i>
2	<i>ṣtmäṣt</i>	<i>ṣtāmsä-t</i>	<i>ṣtmäs</i>	<i>ṣtāmsä-c</i>
3	<i>ṣtmäṣ</i>	<i>ṣtāmsä-ṣ</i>	<i>ṣtāmseñc</i>	<i>ṣtāmsa-yñc</i>

Remarks:

- Most of the forms of the example are inferred.
- Note the alternation between ṣtām° and ṣtmä° , which depends on the vowel of the suffix, i.e. *a* or *ä* / zero.
- The 2pl. in *-ś* shows assimilation of the expected *-ṣc*.

23. Infinitive, present participle and present gerund

The following nonfinite forms are derived from the present stem: infinitive, present participle and present gerund.

The infinitive is formed with the suffix *-tsi*, e.g. *lkātsi* from *lākā-* ‘see’, prs.5 |*lākā-*|. In stems with an alternating suffix like prs.8 |*-ṣä/ṣa-*|, it is formed from the variant *-ṣä-*; however, the expected cluster *-ṣts-* is assimilated to *-ss-*, e.g. *ṣtmässi* to *ṣtäm-*^{caus.} ‘put’. The infinitive is mostly final, i.e. *lkātsi* ‘in order to see’. It is only rarely used as a noun, e.g. *śwātsi* ‘food’, pl. *śwātsintu*.

The present participle is formed with the suffix *-mām*, e.g. *lkāmām* from *lākā-* ‘see’. In stems with an alternating suffix like prs.8 |*-ṣä/ṣa-*|, it is formed from the variant *-sa-*, which undergoes vowel weakening, e.g. *ṣtmāsmām* |*ṣtämsa-mām*| to *ṣtäm-*^{caus.} ‘put’.⁴ The present participle is indeclinable and functions mostly as an adverb. Often it forms nonfinite, converbial subclauses.

The present gerund denotes necessity. It is formed with the suffix *-l*. In stems with an alternating suffix like prs.8 |*-ṣä/ṣa-*|, it is formed from the variant *-ṣä-*, e.g. *ṣtämṣäl* to *ṣtäm-*^{caus.} ‘put’. The inflexion is almost identical to that of *āṣtār* ‘pure’ above (this particular paradigm inferred):

	sg.m.	pl.m.	sg.f.	pl.f.
nom.	<i>ṣtämsäl</i>	<i>ṣtmäṣlye</i>	<i>ṣtmäṣlyi</i>	<i>ṣtmäṣlaṃ</i>
obl.	<i>ṣtmäṣlām</i>	<i>ṣtmäṣlyes</i>	<i>ṣtmäṣlyām</i>	<i>ṣtmäṣlaṃ</i>
gen.	<i>ṣtmäṣlyāp</i>			

24. Subjunctive

The subjunctive denotes future tense in main clauses, and has several functions in subclauses, like conditionality, iterativity, uncertainty, indefiniteness. Conditional clauses may be marked with a conjunction, like *kuprene* ‘if’, but may also be marked only with the subjunctive.

The subjunctive has the same endings as the present, but is distinguished from it by means of the stem. In the causatives, which make up a large part of the most frequent present class 8, the corresponding subjunctives of class 8 have a vowel *ā* before the suffix |*-ṣä/ṣa-*|, i.e. |*-ā ṣä/ṣa-*|: prs.8 |*ṣtāmṣä/ṣa-*| ~ sbj.8 |*ṣtāmāṣä/ṣa-*|.

In subjunctive class 5, like present class 5 ending in *-ā* and mostly consisting of root formations, the root may show ablaut. The singular active has full grade *a*, and all other forms, finite as well as nonfinite, have weak or zero grade *ä* / zero. In the full grade forms, the *ā* of the second syllable is reduced to *a*, e.g. *kräsā-* ‘know’:⁵

⁴ Vowel weakening is here a morphological process no longer conditioned by the vowel in the preceding syllable.

⁵ The notation of the root as *kräsā-* is to account for the position of the full grade vowel, i.e. 3sg.sbj. *krasaṣ*, not ***karsaṣ*. The position of the *ä* itself is governed by the rules for *ä* discussed earlier.

	sg.act.		pl.act.		sg.mid.	pl.mid.
1	<i>krasam</i> krasā-m > krasa-m		<i>kärsāmäs</i> kräsā-mäs		<i>kärsāmār</i>	<i>kärsāmtār</i>
2	<i>krasat</i> krasā-t > krasa-t		<i>kärsāc</i> kräsā-c		<i>kärsātār</i>	<i>kärsācār</i>
3	<i>krasaṣ</i> krasā-ṣ > krasa-ṣ		<i>kärseñc</i> kräsā-yñc		<i>kärsātār</i>	<i>kärsāntār</i>

As in the case of *kräsā-* ‘know’, a subjunctive of class 5 often corresponds to a nasal present of class 6 or 7.

The present and subjunctive stems may also be from different roots, e.g. *läkā-* ‘see’ with prs.5 |läkā-| and sbj.5 |pälkā-| from another root. Usually, in cases of suppletion the non-present stems are formed from the same root.

25. Subjunctive gerund and verbal noun

The following nonfinite forms are derived from the subjunctive stem: subjunctive gerund and verbal noun.

The subjunctive gerund denotes possibility. Its formation and inflexion are identical to the that of the present gerund, e.g. prs.ger. *ṣtāmṣäl* ‘is to be put’ vs. sbj.ger. *ṣtmāṣül* ‘may be put’.

The verbal noun is formed with the suffix *-lune* in the same way as the subjunctive gerund, i.e. in stems with an alternating suffix like prs.8 |^{sä}/sa-|, it is formed from the variant *-ṣä-*. In stems with *a*, *ā*, *e* or *o* in the first syllable, *-lune* causes reduction of a second-syllable *a* to *ä* / zero. The verbal noun is alternant and forms a plural in *-ntu*. The basic form is *-luneyäntu*, but the most frequent is *-luneyntu*. Other variants are *-lunentu*, *-luneytu*.

Since the present and the subjunctive have the same endings, the infinitive, present participle and verbal noun are important to determine the present and subjunctive stems of a given verb.

Exercise

- 1) Determine the following forms of ‘give’: *esmām*, *elune*, *essi*, *esam*, *āyeñc*, *el*, *em*, *eṣäl*, *eṣ*, *eseñc*, *esamäs*, *ec*, *et-ñi*, *eś-äm*.
- 2) Make the following forms of *läkā-* ‘see’: verbal noun, infinitive, present gerund, subjunctive gerund, 1sg.prs.act., 1sg.sbj.mid., 2pl.prs.mid., 2sg.prs.act., 2pl.prs.act.-pl.obj., 1pl.prs.act.-2sg.obj.
- 3) How do you say in Tocharian A, “If you give it to me, I will give it to him”? (You don’t need to use personal or demonstrative pronouns; a conjunction is not necessary either.)

26. Preterite

The preterite is the default past tense. It may have present tense reference, as a resultative. Most preterites have a stem ending in *-ā*, but the *-ā* is dropped in the 3sg.act. The preterite has its own set of personal endings. Preterites corresponding to subjunctives of class 5 with ablaut have a similar ablaut, but with the full grade in the plural active. The singular active may have initial palatalisation, e.g. *kräsā-* ‘know’:

	sg.act.		pl.act.		sg.mid.		pl.mid.
1	<i>śärsā</i> śärsā-ā		<i>krasamäs</i> krasa-mäs		<i>kärse</i> /kräsā-y	<i>kärsāmät</i>	/kräsā-mät
2	<i>śärsāṣt</i> śärsā-ṣt		<i>krasas</i> krasa-s		<i>kärsāte</i> kräsā-te	<i>kärsāc</i>	kräsā-c
3	<i>śärs</i> śärsā-Ø > śärs		<i>krasar</i> krasa-r		<i>kärsāt</i> kräsā-t	<i>kärsānt</i>	kräsā-nt

Remarks:

- As in the 3pl.prs.act, the 1sg.prt.mid. *-e* results from contraction of the stem-final *-ā* with a palatal element, here analysed as *|-y|*.
- The 2pl.sbj.mid. *kārsāc* is identical to the 2pl.prt.mid., but both forms are so rare that no such pair is attested.
- The 1sg.prt.mid. *kārse* is identical to the short 3pl.sbj.act.
- The stem-final *-ā* is not dropped if an object marker follows, i.e. 3sg.prt.-1sg.obj. *śārsā-ñi* ‘he knew me’.

The *s*-preterite of class 3 shows an element *-sā-* in the middle. In the active, its shortened form *-s* is found in the 3sg.act., while the other active forms do not have this element. The active has *a*-grade and the middle has *ä*-grade. If possible, the active has initial palatalisation. *tānk-* ‘stop’ may have had the relevant contrasts, but most of the paradigm is inferred:

	sg.act.		pl.act.	sg.mid.		pl.mid.
1	<i>caṅkwā</i>	<i> caṅk-wā </i>	<i>caṅkmäs</i>	<i>tānkse</i>	<i> täṅk-sā-y </i>	<i>tāṅksāmät</i>
2	<i>caṅkäšt</i>	<i> caṅk-št </i>	<i>caṅkäs</i>	<i>tāṅksāte</i>	<i> täṅk-sā-te </i>	<i>tāṅksāc</i>
3	<i>caṅkäs</i>	<i> caṅk-sā-Ø > caṅk-s </i>	<i>caṅkär</i>	<i>tāṅksāt</i>	<i> täṅk-sā-t </i>	<i>tāṅksānt</i>

Remarks:

- The 1sg. ending here is *-wā*, not *-ā*.
- The element *-sā-* in the active is visible before an object marker, e.g. 3sg.prt.act.-pl.obj. *caṅksā-m* ‘he stopped them’.

The basic preterite type for causatives is the reduplicated preterite of class 2 with initial palatalisation and reduplication of the first consonant with a vowel *a*, cf. *štām^{caus.}* ‘put’ with palatalisation of *št-* to *ś-*:

	sg.act.		pl.act.
1	<i>śāśmāwā</i>	<i> śa-śāmā-wā </i>	<i>śāśmāmäs</i> <i> śa-śāmā-mäs </i>
2	<i>śāśmāšt</i>	<i> śa-śāmā-št </i>	<i>śāśmās</i> <i> śa-śāmā-c </i>
3	<i>śāśām</i>	<i> śa-śāmā-Ø > śa-śām </i>	<i>śāśmār</i> <i> śa-śāmā-r </i>

Remarks:

- The 1sg.act. has the longer form *-āwā*.
- The 3sg. has a variant *śāśśām* that seems to preserve the length of the unpalatalised *-št-* medially in the form of a geminate.

27. Imperfect

Compared to the preterite, the imperfect is a marked past tense. It may denote iterativity, or it may give the background to actions expressed in the preterite.

The imperfect is formed from the present stem with the suffix *|-’ā-* and takes preterite endings. For instance, the imperfect to the present *|krop<n>a-* of *kropa-* ‘gather’ is *|kropñā-*. The imperfect suffix is not subject to vowel weakening.

A small number of verbs form a strong imperfect with initial palatalisation and *ā*-grade in the root, e.g. *krāsā-* ‘know’, prs.6 *|krās<n>ā-*, ipf. *|śārsa-*. The root-final *-ā* is in the strong imperfect subject to vowel weakening and becomes *-a*.

28. Optative

The optative denotes wishes, obligation or uncertainty, and in subclauses it mostly forms unreal conditionals.

The optative is formed with the suffix |-’i-| (= |-’äy-|) from the subjunctive stem. A stem-final *-ā* is deleted, but blocks the palatalisation. e.g. *kräsā-* ‘know’, subj. |kräsā-|, opt. |kräsā-’äy- > kārsi-|. The endings are those of the present.

29. Preterite participle

The preterite participle may be used attributively, but also often makes nonfinite subclauses. Like the preterite, it may have present tense reference as a resultative. There are many subtypes, showing reduplication or not, palatalisation or not, differ in vocalism, etc. Two common types are those of *kräsā-* ‘know’ (ending *-o*, no palatalisation or reduplication), *kārso*, and *štäm*^{-caus.} ‘put’ (ending *-u*, palatalisation as well as reduplication), *śásmu*. The endings are the same for all subtypes.

	sg.m.	pl.m.	sg.f.	pl.f.
nom.	<i>kārso</i>	<i>kārsoṣ</i>	<i>kārsoṣ</i>	<i>kārsont</i>
obl.	<i>kārsont</i>	<i>kārsoñcäs</i>	<i>kārsoṣām</i>	<i>kārsont</i>
gen.	<i>kārsontāp</i>	<i>kārsoñcäsši</i>		

30. Imperative

The stem formation of the imperative correlates to that of the preterite, and to a lesser extent the subjunctive. It has a prefix *p-* and its own endings. The verb *kräsā-* ‘know’ has full grade in the act.sg., like in the subjunctive. The middle forms are not attested but inferred. The paradigm of *tänk-* ‘stop’ is completely inferred.

	act.	mid.	act.	mid.
2sg.	<i>päkras</i> p-kras-Ø	<i>pkärsār</i> p-kräsā-r	<i>ptänk</i> p-tänk-Ø	<i>ptänksār</i> p-tänk-sā-r
2pl.	<i>pkärsäs</i> p-kräs-s	<i>pkärsāc</i> p-kräsā-c	<i>ptänkäs</i> p-tänk-s	<i>ptänksāc</i> p-tänk-sā-c

Exercise

- 1) Determine the following forms of the verb *tärkā-* ‘let go’: *tarkam*, *tärkāt*, *tärkāc*, *cärk*, *cärkā-m*, *tarkar*, *ptark*, *tärkāmät*, *tärke*, *tärkiṣ*, *cärkar*.
- 2) Make the following forms of *läm*^{-caus.} ‘place’, which inflects like *štäm*^{-caus.} ‘put’: prt.ptc. f.pl., prt.ptc. nom.sg.m., prs.ger. obl.sg.f., sbj.ger. nom.pl.m., 3pl.prt.act.-2sg.obj., 1sg.opt.act.-3sg.obj.
- 3) How do you say, “If he knew, you would stop him”?

31. Ablaut, palatalisation and the verbal root

Ablaut and palatalisation are important morphological processes in the Tocharian verb: a large number of distinctions are made with ablaut or palatalisation. However, in many instance ablaut and palatalisation are excluded. Especially when ablaut is not possible, it may be replaced by different morphological processes, notably suffixation.

The basic palatalisation sets are: *k* → *ś*, *t* → *c*, *n* → *ñ*, *l* → *l̄* (*ly*), *s* → *ṣ*, *ts* → *ś*. The palatalised counterparts of these sets cannot undergo “further” palatalisation, and the consonants *p*, *m*, *y*, *r*, *w* have no palatalised counterpart.

Only roots that may have root ablaut may also have initial palatalisation. These roots are set up with an *ä* in the first syllable (including *i* and *u* as /äy/ and /äw/). All verbs with another vowel, mostly *ā*,

cannot have ablaut or initial palatalisation (the same is true for all verbs with a initial vowel). For instance, *kātk*-^{caus.} ‘please’ cannot follow the same stem pattern as *štām*-^{caus.} ‘put’ because it cannot form a causative preterite of class 2, 3sg.prt. *śāsām*. Instead, it forms a different preterite derived through suffixation, [kātq̄sā-]. It also forms a different prt.ptc. Instead of the type *śās̄mu*, we find *kākātq̄su*.

33. Verbal stem patterns

šā/*sa*-prs.[8] + *ā*^{šā}/*sa*-sbj.[9] + red.prt.[2]: example *štām*-^{caus.} ‘put’

<i>šā</i> / <i>sa</i> -prs.[8] štām ^{šā} / <i>sa</i> -	3sg. <i>štām̄s*</i> , 3pl. <i>štām̄señc</i>
<i>ā</i> ^{šā} / <i>sa</i> -sbj.[9] štām̄ ^{šā} / <i>sa</i> -	3sg. <i>štām̄s*</i> , 3pl. <i>štām̄señc*</i>
red.prt.[2] śās̄śāmā-	3sg. <i>śās̄śām</i> , 3pl. <i>śās̄mār*</i>
prt.ptc. <i>śās̄mu</i>	
ipv. sg. <i>pāš̄śām</i> , pl.mid. <i>pāš̄māc</i>	

Stem pattern found with 57 verbs; gradation pattern only with palatalisable initials of verbs with initial palatalisation in the preterite of the base verb: *kān*-^{caus.} ‘bring about’, *kārñ*- ‘strike’, *kāry*- ‘consider’, *kāl*- ‘bear’, *kāln*-^{caus.} ‘let resound’, *kālp*-^{caus.} ‘let obtain’, *kāl̄t̄*-^{caus.} ‘press’, *kās*-^{caus.} ‘make extinct’, *klāys*-^{caus.} ‘make sleep’, *tākw*-^{caus.} ‘?’, *tātk*- ‘prolong’?, *tāl*- ‘lift up; carry’, *trāysk*- ‘drone, make drone’, *trāws*- ‘tear to pieces’, *nātk*- ‘push away’, *nām*-^{caus.} ‘bow (intr.)’, *nār̄k*- ‘keep away’, *nāw*- ‘roar’, *nāwt*-^{caus.} ‘destroy’, *nāt̄w*-^{caus.} ‘starve (tr.)’, *pālk*-^{caus.} ‘burn’, *pālk*-^{caus.} ‘show’, *pyāwtk*-^{caus.} ‘come about (A); accomplish (M)’, *prānk*-^{caus.} ‘reject’, *prāwtk*-^{caus.} ‘block, fill up’, *prās*-^{caus.} ‘sprinkle’, *māy*- ‘harm’, *yāt*- ‘decorate’, *yār*-^{caus.} ‘bathe (tr.)’, *yāw*-^{caus.} ‘aspire to, turn towards (intr.)’, *rāytw*-^{caus.} ‘attach, adapt (tr.)’, *lāwt*-^{caus.} ‘confuse’?, *lāwtk*-^{caus.} ‘turn into (tr.)’, *wārp*-^{caus.} ‘urge’, *wāt*-^{caus.} ‘set up’, *wātk*-^{caus.} ‘command, decide’, *wām*-^{caus.} ‘let go down’?, *wāyk*-^{caus.} ‘avoid; remove’, *wāyp*-^{caus.} ‘make wet’, *wār*- ‘practise’, *wārt*- ‘throw’, *wās*-^{caus.} ‘dress sb.’, *lām*-^{caus.} ‘place, put’, *śārs*-^{caus.} ‘let know’, *šārttw*- ‘incite’, *šārp*-^{caus.} ‘point out’, *štām*-^{caus.} ‘put, establish’, *sātk*-^{caus.} ‘spread (tr.)’, *sāy*-^{caus.} ‘satiating’, *sālp*-^{caus.} ‘make glow’, *spārtw*-^{caus.} ‘turn (tr.)’, *spār̄k*-^{caus.} ‘make perish’, *srāwk*-^{caus.} ‘kill’, *r̄ām*-^{caus.} ‘promote’, *r̄ār*-^{caus.} ‘separate (tr.)’, *r̄ālp*-^{caus.} ‘redeem’, *r̄āw*-^{caus.} ‘put together’.

<n>/*nā*-prs.[6] + √-prt.[1]-sbj.[5]: example *krāsā*- ‘know’

<n>/ <i>nā</i> -prs.[6] kārs<n>ā-	3sg. <i>kārsnāš</i>
√-prt.[1]-sbj.[5]	
sg.sbj.act./pl.prt.act. krasā- > krasa-	3sg.sbj. <i>krasāš</i> , 3pl.prt. <i>krasar</i>
sg.prt.act. śārsā-	3sg. <i>śārs</i>
elsewhere krāsā-	3pl.sbj. <i>kārseñc</i> , 3sg.prt.mid. <i>kārsāt</i>
prt.ptc. <i>kārso</i>	
ipv. sg. <i>pākras</i> , pl. <i>pākārsās</i>	

Stem pattern found with 36 verbs; gradation pattern only with *ā|ā*-roots; palatalisation pattern only with palatalisable initials: *kārpā*- ‘descend (intr.)’, *kāwtā*- ‘chop’, *kātā*- ‘strew’, *kār̄kā*- ‘steal’, *kār̄štā*- ‘cut off’, *kālā*- ‘bring’, *kālpā*- ‘obtain’, *kāl̄t̄ā*- ‘oppress’, *krāwpā*- ‘gather’, *krāsā*- ‘know’, *klāysā*- ‘sleep’, *tār̄kā*- ‘let go’, *tpāwkā*- ‘hide (intr.)’, *pālā*- ‘praise’, *pāsā*- ‘slaughter’?, *māwsā*- ‘rise (intr.)’, *mrāsā*- ‘forget’, *yāwkā*- ‘conquer’, *rāmā*- ‘bow (intr.)’, *rāytā*- ‘seek’, *rāsā*- ‘stretch (tr.)’, *rāswā*- ‘tear out’, *lāwā*- ‘send’, *wātā*- ‘stab’?, *wāyā*- ‘let sprout’, *wātā*- ‘put (on, around)’, *wārpā*- ‘receive’, *wāytā*- ‘appear’?, *sākā*- ‘follow’, *sāwkā*- ‘bring’, *sāwmā*- ‘take away’, *skāyā*- ‘try’, *r̄ākā*- ‘pierce’, *r̄ākā*- ‘pull out’, *r̄āytā*- ‘touch’.

a-prs.[3] + √-prt.[1]-sbj.[5]: example *wāykā*- ‘dwindle’

<i>a</i> -prs.[3] wāyka-	3sg.mid. <i>wikatr̄ä*</i> , 3pl.mid. <i>wikantār</i>
√-prt.[1]-sbj.[5]	
sg.sbj.act./pl.prt.act. waykā- > weka-	3sg.sbj. <i>wekaš</i> , 3pl.prt. <i>wekar*</i>
elsewhere wāykā-	3pl.sbj. <i>wikeñc*</i> , 3sg.prt.-pl.suff. <i>wikā-m</i>
prt.ptc. <i>wiko</i>	

Stem pattern found with 19 verbs: *k^wālā*- ‘fail (intr.)’, *k^wālpā*- ‘desire’, *tāpā*- ‘be high’, *trāykā*- ‘be confused’, *trāywā*- ‘mix (intr.)’, *nār̄wā*- ‘starve (intr.)’, *pār̄kā*- ‘rise’, *pālā*- ‘be extinguished’, *mālā*- ‘be overwhelmed’,

yāwā- ‘turn towards (intr.)’, *yāwtkā-* ‘be worried’, *rāytwā-* ‘be attached’, *läytā-* ‘fall, pass’, *wātkā-* ‘be separated, decided’, *wāykā-* ‘dwindle, perish’, *sātkā-* ‘spread (intr.)’, *sāykā-* ‘be flooded’, *spāntā-* ‘trust’, *t^sāmā-* ‘grow (intr.)’.⁶

ṣä/ṣa-prs.[8] + ñ^ä/a-sbj.[7] + s-prt.[3]: example *tānk-* ‘stop’

<i>ṣä/ṣa-prs.[8] tānk^{ṣä/ṣa-} </i>	3sg. <i>tānkāṣ</i> , 3pl. <i>tānkseñc*</i>
<i>ñ^ä/a-sbj.[7] tānkñ^ä/a- </i>	3sg. <i>tānkñāṣ</i> , 3pl. <i>tānkñeñc*</i>
<i>s-prt.[3] cank^ṣ/ṣä- </i>	3sg. <i>cankäs*</i> , 3pl. <i>cankär</i>

Stem pattern found with 16 verbs; gradation pattern only with *ä|ā*-roots; palatalisation pattern only with palatalisable initials: *ar-* ‘cause’, *ār^{-s-tr}* ‘abandon’, *āl-* ‘keep away’, *kärk-* ‘bind’, *kāw-* ‘pour’, *klānk^{-s-tr}* ‘doubt’, *tānk-* ‘stop’, *trānk-* ‘cling’, *nāk-* ‘blame’, *yāt^{-s-tr}* ‘tame’, *lānk^{-s-tr}* ‘let dangle’, *lāwt-* ‘remove’, *wāk^{-s-tr}* ‘split (tr.); differ’, *ṣārp-* ‘point out’, *sāk^{-s-tr}* ‘restrain’, *sāy-* ‘support’. In addition, most of the verbs with a *ṣä/ṣa-prs.[8]* and a *s-prt.[3]*, but unknown subjunctive stem, must belong here too: *ās-* ‘dry’, *ep-* ‘cover’, *pātw-* ‘climb’, *pāl^{-s-tr}* ‘extinguish (tr.)’, *yärk-* ‘honour’, *lāwk-* ‘illuminate (A); light up (intr.; M)’, *spärk^{-s-tr}* ‘get lost’.

a|ā-√-prs.[4] + √-prt.[1]-sbj.[5]: example *arā-* ‘cease’

<i>a ā-√-prs.[4] arā- > ara- </i>	3sg.mid. <i>aratär</i> , 3pl.mid. <i>arantr</i>
<i>√-prt.[1]-sbj.[5] ārā- > āra- </i>	3sg.sbj. <i>āraṣ</i> , 3pl.sbj. <i>āreñc</i> , 3sg.prt. <i>ār</i> , 3pl.prt. <i>ārar</i>

Stem pattern found with 16 verbs: *arā-* ‘cease (intr.)’, *artā-* ‘approve of’, *asā-* ‘dry (intr.)’, *klā-* ‘fall’, *pyāstā-* ‘be nourished’, *prāškā-* ‘be afraid’, *plantā-* ‘be pleased’, *mlāwskā-* ‘escape’, *yatā-* ‘be able, become’, *wankā-* ‘chat’, *sakā-* ‘remain’, *spartwā-* ‘turn (intr.)’, *t^sartā-* ‘weep’, *t^sarwā-* ‘be comforted’, *t^sārā-* ‘be separated’, *t^sältā-* ‘devour’, *t^sālpā-* ‘pass away; be redeemed’.

ä/a-prs.-sbj.[2] + ā-ipf.-prt.[1]: example *pās-* ‘protect’

<i>ä/a-prs.-sbj.[2] pā^{ṣä}/sa- </i>	3sg.mid. <i>pāṣtrā</i> , 3pl.mid. <i>pāsantär</i>
<i>ā-ipf.-prt.[1] pāṣā- </i>	3sg.mid. <i>pāṣāt</i> , 3pl.mid. <i>pāṣānt*</i>
prt.ptc. <i>pāpṣu</i>	
ipv. sg.mid. <i>ppāṣār</i> , pl.mid. <i>ppāṣāc</i>	

Stem pattern found with 15 verbs (6 *x|Ø*-roots, 8 2|Ø-roots, 1 3|Ø-root): *kātk-* ‘be glad’, *pās-* ‘protect’, *pros-* ‘be ashamed’, *yārs-* ‘show respect’, *wlāys-* ‘carry out’, *sāw-* ‘live’; *kāṣäyñ-* ‘scold’, *krāṣäyññ-* ‘insult’, *klopäyññ-* ‘express sorrow’, *tāwnkäyññ-* ‘love’, *wāynās-* ‘honour’, *śewäyññ-* ‘yawn’, *slānkäyññ-* ‘?’, *swkaṣäyññ-* ‘feel happy’; *arṣaṣäyññ-* ‘fit’.

⟨n⟩/nkā-prs.[7] + √-prt.[1]-sbj.[5]: example *kātkā-* ‘cross’

<i>⟨n⟩/nkā-prs.[7] kāt⟨n⟩kā- > kätānkā- </i>	3sg. <i>ktānkāṣ*</i> , 3pl. <i>ktānkeñc</i>
<i>√-prt.[1]-sbj.[5]</i>	
sg.sbj.act./pl.prt.act. katkā- > katka-	3sg.sbj. <i>katkaṣ</i> , 3pl.prt. <i>katkar</i>
sg.prt.act. käckā-	3sg. <i>kcäk</i> , <i>štā(k)</i>
elsewhere kātka-	3pl.sbj. <i>kätkeñc</i> , 3sg.prt.mid. <i>kātka*</i>
prt.ptc. <i>kātko</i>	

Stem pattern found with 13 verbs; gradation pattern only with *ä|ā*-roots; palatalisation pattern only with palatalisable initials: *kātkā-* ‘rise’, *kātkā-* ‘cross’, *pālskā-* ‘think’, *pāwtkā-* ‘divide (tr.)’, *māskā-* ‘be difficult’, *mrāwskā-* ‘feel aversion’, *rāwtkā-* ‘remove (A); keep away from (M)’, *lātkā-* ‘cut off’, *lāwtkā-* ‘turn (intr.)’, *wāskā-* ‘move (intr.)’, *wnäyskā-* ‘torment’, *wrātkā-* ‘cut off’, *särkā-* ‘prepare’?, *spāltkā-* ‘make an effort’.

⁶ *t^sāmā-* forms a prs.4 instead of prs.3.

\ddot{a}/a -prs.[2] + $\sqrt{\text{pr}}.$ [1]-sbj.[5]: example *pänw-* ‘stretch’

\ddot{a}/a -prs.[2] pañw ^ä /a-	3sg. <i>pañwäṣ</i> , 3pl. <i>pañweñc</i>
$\sqrt{\text{pr}}.$ [1]-sbj.[5]	
sg.sbj.act./pl.prt.act. panwā- > panwa-	3sg.sbj. <i>panwaṣ*</i> , 3pl.prt. <i>panwar</i>
elsewhere pänwā-	3pl.sbj. <i>pänweñc*</i> , 3sg.prt. <i>pnu*</i>
prt.ptc. <i>pänwo</i>	

Stem pattern found with 6 verbs; gradation pattern only with \ddot{a}/\emptyset -roots: *täk-*, *pänw-*, *mäyw-*, *wamp-*, *wal-*, *wäs-*.

$nä^{\ddot{s}ä}/sa$ -prs.[10] + *a*-sbj.[3] + $\sqrt{\text{pr}}.$ [3]: example *näk-* ‘perish’

$nä^{\ddot{s}ä}/sa$ -prs.[10] näknä ^{sä} /sa-	3sg.mid. <i>näknäṣträ</i> , 3pl.mid. <i>nkämsanträ</i>
<i>a</i> -sbj.[3] näka-	3sg.mid. <i>nkatär</i> , 3pl.mid. <i>nkantr</i>
$\sqrt{\text{pr}}.$ [3] nak-	3sg.mid. <i>nakät</i> , 3pl.mid. <i>nakänt</i>
prt.ptc. <i>nanku</i>	

Stem pattern attested with 6 verbs: *kän-* ‘come about’, *täm-* ‘be born’, *näk-* ‘perish’, *päk-* ‘boil (intr.), ripen’, *wäl-* ‘die’, *ṛäk-* ‘burn (intr.)’.

$\sqrt{\text{pr}}.$ [1] + \bar{a} -prt.[1]-sbj.[5]: example ‘write’

$\sqrt{\text{pr}}.$ [1] päyk-	3sg. <i>pikäṣ</i> , 3pl. <i>pikiñc</i>
\bar{a} -prt.[1]-sbj.[5] päykā- > peka-	3sg.sbj.mid. <i>pekaträ</i> , 3pl.sbj.mid. <i>pekanträ*</i> , 3sg.prt.mid. <i>pekat</i> , 3pl.prt.mid. <i>pekant*</i>
prt.ptc. <i>pāpeku</i>	

Stem pattern found with 5 verbs: *päyk-* ‘write’, *pläw-* ‘float (on water or in the sky)’, *läyk-* ‘wash’, *säyp-* ‘anoint’, *sälp-* ‘glow’.

$sä^{\ddot{a}}/sa$ -prs.[8] + $\sqrt{\text{sbj}}$ [1] + *s*-prt.[3]: example *präk-* ‘ask’

$sä^{\ddot{a}}/sa$ -prs.[8] prak ^{sä} /sa-	3sg.mid. <i>prakäṣtär</i> , 3pl.mid. <i>praksantär*</i>
$\sqrt{\text{sbj}}$ [1] präk-	3sg.mid. <i>pärktär*</i> , 3pl.mid. <i>pärkäntär</i>
<i>s</i> -prt.[3] act. prak [∅] /sä- , mid. präksä-	3sg.mid. <i>präksät</i> , 3pl.mid. <i>präksänt</i>
prt.ptc. <i>papräku</i>	
ipv. sg.mid. <i>ppärksār</i> , pl.mid. <i>ppärksāc</i>	

Stem pattern attested with 4 verbs: *näk-*^{s-tr.} ‘destroy, lose’, *präk-* ‘ask’, *märk-* ‘take away, defile’, *ṛäk-* ‘glow’.

Short overview of paradigms

Nouns

nom.sg.	obl.sg.	gen.sg.	nom.pl.	obl.pl.
<i>ñkät</i> ‘god’	<i>ñkät</i>	<i>ñäktes</i>	<i>ñäктаñ</i>	<i>ñäktas</i>
<i>kapśaṇi</i> ‘body’	<i>kapśaṇi</i>	<i>kapśiññiis</i>	<i>kapśiññāñ</i>	<i>kapśiññās</i>
<i>käṣṣi</i> ‘teacher’	<i>käṣṣim</i>	<i>käṣṣiyāp</i>	<i>käṣṣiñ</i>	<i>käṣṣis</i>
<i>ri</i> ‘town’	<i>ri</i>	<i>riyis</i>	<i>riñ</i>	<i>ris</i>
<i>koṃ</i> ‘sun’	<i>koṃ</i>	<i>konis*</i>	<i>koñi</i>	<i>konäs*</i>
<i>wäl</i> ‘king’	<i>lānt</i>	<i>lānt</i>	<i>lāñś</i>	<i>lāñcäs</i>
<i>brāmaṃ</i> ‘brahmin’	<i>brāmaṃ</i>	<i>prāmne</i>	<i>brāmnāñ</i>	<i>brāmnās</i>
<i>śomim</i> ‘girl’	<i>śominām</i>	<i>śomine</i>	<i>śomināñ</i>	<i>śominās*</i>
<i>aśi</i> ‘nun’	<i>aśyām*</i>	<i>aśše</i>	<i>aśyāñ, aśśāñ</i>	<i>aśyās</i>
<i>pācar</i> ‘father’	<i>pācar</i>	<i>pācri</i>	<i>pācri</i>	<i>pācräs*</i>

sg. *wram* ‘thing’ pl. *wramām* gen.sg. *wramis* gen.pl. *wramnis* sg. *klop* ‘sorrow’ pl. *klopant*
 sg. *ñemi* ‘jewel’ pl. *ñemintu* gen.sg. *ñemiyis* gen.pl. *ñemintwis* sg. *pñi* ‘merit’ pl. *pñintu*
 gen.pl. -śśi. Sec.: ins. -yo, com. -aśśäl (‘together’), perl. -ā (‘through’), all. -ac (‘towards’), abl. -äṣ, loc. -am

Adjectives (gen.pl. = obl.pl. + -śśi, but very rare)

	m. ‘pure’	f.	m. ‘great’	f.	m. ‘done’	f.	m. ‘noble’	f.
nom.sg.	<i>āštär</i>	<i>āštri</i>	<i>tsopats</i>	<i>tsopatsi</i>	<i>yāmu</i>	<i>yāmus</i>	<i>klyom</i>	<i>klyomim</i>
obl.sg.	<i>āštrām</i>	<i>āštäryām</i>	<i>tsopatsām</i>	<i>tsopatsām</i>	<i>yāmunt</i>	<i>yāmusām*</i>	<i>klyomänt</i>	<i>klyominām</i>
gen.sg.	<i>āštäryāp</i>	<i>āštärye*</i>	<i>tsopatsāp</i>				<i>klyomäntāp</i>	<i>klyomine</i>
nom.pl.	<i>āštre</i>	<i>āštram</i>	<i>śāwe</i>	<i>śāwam</i>	<i>yāmuṣ</i>	<i>yāmunt</i>	<i>klyomäṣ</i>	<i>klyomināñ</i>
obl.pl.	<i>āštres*</i>	<i>āštram</i>	<i>śāwes</i>	<i>śāwam</i>	<i>yāmuñcäs</i>	<i>yāmunt</i>	<i>klyomäñcäs*</i>	<i>klyominās</i>

Pronouns

säs proximal, *säm* anaphoric, *saṃ* distal.

	sg.m.	sg.f.	sg.n.	pl.m.	pl.f.	1sg.m. <i>näs</i> , gen. <i>ñi</i> , f. <i>ñuk</i> , gen. <i>nāñi</i>	1pl. <i>was</i> , gen. <i>wasām</i>
nom.	<i>säs</i> : <i>saṃ</i>	<i>sās</i> : <i>sām</i>	<i>täs</i> : <i>taṃ</i>	<i>ceṣ</i> : <i>ceṃ</i>	<i>toṣ</i> : –	2sg. <i>tu</i> , obl. <i>cu</i> , gen. <i>tñi</i>	1pl. <i>yas</i> , gen. <i>yasām</i>
obl.	<i>caṣ</i> : <i>caṃ</i>	<i>tāṣ</i> : <i>tām</i>	<i>täs</i> : <i>taṃ</i>	<i>cesäs</i> : <i>cesām</i>	<i>tosäs</i> : <i>tosām</i>		
gen.	<i>caṣi</i> : <i>cani</i>	– : –	– : <i>tanis</i>	<i>cessi</i> : <i>cesni</i>	– : –		

Verb

	sg.prs.A	pl.prs.A	sg.prs.M	pl.prs.M	sg.prt.A	pl.prt.A	sg.prt.M	pl.prt.M	obj.sg.	obj.pl.
1	<i>-m</i>	<i>-mäś</i>	<i>-mār</i>	<i>-mtär</i>	<i>-ā, -wā, -u</i>	<i>-mäś</i>	<i>-e, -we</i>	<i>-mät</i>	<i>-ñi</i>	<i>-m</i>
2	<i>-t</i>	<i>-c</i>	<i>-tār</i>	<i>-cär</i>	<i>-št</i>	<i>-s</i>	<i>-te</i>	<i>-c</i>	<i>-ci</i>	<i>-m</i>
3	<i>-ṣ</i>	<i>-(i)ñc</i>	<i>-tär</i>	<i>-ntär</i>	<i>-Ø</i>	<i>-r</i>	<i>-t</i>	<i>-nt</i>	<i>-ṃ</i>	<i>-m</i>

	3sg./pl.prs.	3sg./pl.sbj.	3sg./pl.prt.	sg./pl.ipv.	prt.ptc.
<i>štäm</i> ^{caus.} ‘put’ (ACT)	<i>štmäs*</i>	<i>štmäs*</i>	<i>śasām, śasśām</i>	<i>päsśām</i>	<i>śasmu</i>
	<i>štämseñc</i>	<i>štmäseñc*</i>	<i>śasmar*</i>	<i>päsśmäs*</i>	
<i>kräsā</i> - ‘know’ (ACT)	<i>kärsnāṣ</i>	<i>krasaṣ</i>	<i>śärs</i>	<i>päkras</i>	<i>kärso</i>
	<i>kärsneñc</i>	<i>kärseñc</i>	<i>krasar</i>	<i>pkärsäs</i>	
<i>wäykā</i> - ‘dwindle’ (ACT/MID)	<i>wikatär</i>	<i>wekaṣ</i>	<i>wik*</i>		<i>wiko</i>
	<i>wikantär</i>	<i>wikeñc*</i>	<i>wekar*</i>		
<i>tänk</i> - ‘stop’ (ACT)	<i>tänkäṣ</i>	<i>tänkñäṣ</i>	<i>cañkäs*</i>		<i>tatänku*</i>
	<i>tänkseñc*</i>	<i>tänkñeñc*</i>	<i>cañkär</i>		
<i>arā</i> - ‘cease’ (ACT/MID)	<i>aratär</i>	<i>āraṣ</i>	<i>ār</i>		<i>āru*</i>
	<i>arantär</i>	<i>äreñc</i>	<i>ārar</i>		
<i>pās</i> - ‘protect’ (MID)	<i>pāštär</i>	= prs.	<i>pāšāt</i>	<i>ppāšār</i>	<i>pāpšu</i>
	<i>pāsantär</i>	= prs.	<i>pāšānt*</i>	<i>ppāšāc</i>	
<i>kätkā</i> - ‘cross’ (ACT)	<i>ktänkäṣ*</i>	<i>katkaṣ</i>	<i>kcäk, štä(k)</i>		<i>kätko</i>
	<i>ktänkeñc</i>	<i>kätkeñc</i>	<i>katkar</i>		