The Tocharian subjunctive

Peyrot, M.

2 MORPHOLOGY

In order to address the questions whether the subjunctive can be seen as a second present and to what extent the preterite stem is identical with the subjunctive stem, the morphological markers and stem patterns of the verb need to be analysed.

2.1 INTRODUCTION

The Tocharian verbal system is complex. The verb expresses person and number of the subject, tense, aspect, mood, and voice; the direct or indirect object may be expressed by a clitic attached to the verb. In addition, there is a system of derived transitive and intransitive verbs, which is so productive that it can without reserve be called a part of the grammar rather than the lexicon. The principal formal pillars of the verb are five different basic stems: present, subjunctive, preterite, preterite participle and imperative. From these basic stems, some additional stems and many infinite forms are derived.

The main reason for the complexity of the verbal system is the existence of different classes for each of the five basic stems. In my analysis, a verb can take only one class for a particular stem, but on the basis of a given stem it may be difficult or impossible to predict the class of another stem of the same verb. The set of stems of a particular verb is its stem pattern; the way in which different stem classes combine into stem patterns is one of the main topics of this chapter, as well as one of the recurrent issues in the whole book.

2.1.1 TRADITIONAL ANALYSIS

The traditional stem analysis of the Tocharian verb is that of the *Elementarbuch* (Krause and Thomas 1960), in many respects a step backwards compared to the old classification of the *Tocharische Grammatik* (Sieg, Siegling and Schulze 1931). With a stricter synchronic view and better linguistic insights, this old classification is often superior to that of the *Elementarbuch*. Unfortunately, the 1931 classification has passed into disuse, and since their class numbers interfere in a confusing way with the *Elementarbuch* system generally used nowadays, I will refrain from further reference to the old stem analysis.

The basic assumptions of the *Elementarbuch* classification are simple: 1) Tocharian A and Tocharian B are almost identical, 2) present and subjunctive are almost identical, 3) preterite and imperative are almost identical. The principles of their classification are based on the assumptions that: 1) Tocharian A and B should be classified in the same way, 2) present and subjunctive should be classified in the same way, 3) preterite and imperative should be classified in the same way.

Additional principles are: 4) all stems are formed from the root by means of a suffix, and, according to traditions of Sanskrit grammar, 5) complex suffixes follow simple ones in the system of class numbers. Further, the idea that Tocharian A and B are more or less the same leads to the bias that Tocharian B is the better candidate for showing the "Tocharian" situation because it is more archaic. This method has yielded a class system with 12 present classes, 11 subjunctive classes (numbered 1 to 7 and 9 to 12 with number 8 lacking), 6 preterite and 6 imperative classes. A number of blanks for Tocharian A attest the preference for Tocharian B.[3]

stem suffixes of the Tocharian verb

	present		subjunctive			preterite		imperative		
CLASS	TA	TB	TA	TB	CLASS	TA	TB	TA	TB	CLASS
1	Ø	Ø	Ø	Ø	1	ā	a	*base verb*		1
2	ʾä/$_{a}$	ʾə/$_{e}$	ʾä/$_{a}$	ʾə/$_{e}$	2	RED	C'aCa	CAUS	C'aCa	2
3	a	e	a	e	3	Ø/$_{sā}$	Ø/$_{sa}$	Ø/$_{sā}$	Ø/$_{sa}$	3
4	a	o	–	ʾəy	4	ṣā	ṣṣa	ṣā	ṣṣa	4
5	ā	a	ā	a	5	ññā	ñña	ññā	ññə/$_{e}$	5
6	nā	na	nā	na	6	ʾä/$_{a}$	ʾə/$_{e}$	*irregular*		6
7	‹n›	‹n›	ñä/$_{a}$	ñə/$_{e}$	7					
8	ṣä/$_{sa}$	ṣə/$_{se}$	–	–	8					
9	–	ṣṣə/$_{ske}$	ṣä/$_{sa}$	ṣṣə/$_{ske}$	9					
10	näṣä/$_{sa}$	nəṣṣə/$_{ske}$	näṣä/$_{sa}$	nəṣṣə/$_{ske}$	10					
11	säyṣä/$_{sa}$	səṣṣə/$_{ske}$	säyṣä/$_{sa}$	səṣṣə/$_{ske}$	11					
12	ññä/$_{a}$	ññə/$_{e}$	ññä/$_{a}$	ññə/$_{e}$	12					

There are a number of minor problems, some of which are caused by the restricted size of the scheme. For instance, Tocharian A seems to have two present classes in *-a* (3 and 4), but the actual difference is found in the vocalism of the root. The

[3] The classification of Sieg, Siegling and Schulze (1931) is still highly interesting, since it gives a completely synchronic analysis of Tocharian A. For instance, the imperfect has its own classes because it is not as predictable as it is in Tocharian B, and the subjunctive is discussed under the preterite, to which it is indeed very closely related (closer than in Tocharian B). The table below gives their classes ("SSS") compared to those of Krause and Thomas (1960, "TEB").

SSS	TEB	SSS	TEB	SSS	TEB	SSS	TEB	SSS	TEB
present						preterite			
1	1	6	6 (*na*)	10	10 (*nās*)	1a	1 (*a*)	4b	5
2	3	7a	6 (*nā*)	11	11	1b	1 (*ā*)	4c	1 (= ipf.)
3	4	7b	7	12	12	2	2	5	6
4	2	8	10 (*näs*)			3	3		
5	5	9	8			4a	1 (*Cā*-roots)		

imperative, which is difficult to classify because only few forms are attested, is presented in a very confusing way in the *Elementarbuch*, and it can hardly be rendered in an adequate manner here. More serious is the doubtful status of especially present and subjunctive 11 in both languages and subjunctive 7 in Tocharian B – classes that simply do not exist.[4]

However, the real problems are more basic. First, this scheme gives a very unrealistic and unnatural picture of the verb because it implicitly suggests that stems can pattern in 12 x 11 x 6 x 6 = 4,752 ways, or if the 4 classes of the preterite participle are added, 19,008. Of course, this is nonsense: the total number of verbs in both languages lies around 650. Admittedly, the number of different patterns is high, but many of the classes pattern in a predictable and logical way: there are much less possibilities than suggested by the scheme. An example of a logical pattern that is obscured in the scheme is that of a stem in *-a*, which is to be found under subjunctive 5 and preterite 1, whereas it is in fact *the same stem*.

Second, a large part of the stem classes in the *Elementarbuch* classification is not based on suffixes only, but on elements of the root, too: the suffixes have been separated wrongly. The same stem in *-a*, for example, is in many cases a root in *-a* without suffix: the recognition of such disyllabic roots ending in *-a* drastically simplifies the system. In addition, a number of other distinctions are actually due to properties of the first syllable of the root: for instance, preterite classes 2 and 4 are in complementary distribution, verbs with *ə*-vocalism in the first syllable taking preterite 2, and the ones with *a*-vocalism preterite 4.

Third, the principle that stems are formed from the root is in many cases demonstrably wrong and complicates matters unnecessarily: all preterites 4 are in fact *a*-preterites derived from subjunctives of class 9; likewise, all preterites 5 are derived from subjunctives 12.

Fourth, the system has no place for identical formations, a phenomenon especially frequent with presents and subjunctives. This failure leads to pointless statements like "subjunctives 9 pattern with presents 9"; well, they don't – it is just the same stem.

In sum, the assumptions and principles of the *Elementarbuch* classification are not only impractical and difficult to learn, they are in many respects simply false. As the class number system is confusing and difficult to memorise, I will always cite the suffix in order to refer to stems, only occasionally accompanied by the class number.

2.1.2 PROBLEM

The two central questions of this chapter are 1) whether the subjunctive can be seen as a second present and 2) whether the subjunctive stem can be equated with the preterite stem. While these questions lead to a large number of smaller questions

[4] Tocharian B subjunctive class 7 was eliminated by Hilmarsson (1991b).

about the formation of the subjunctive, they are both essential for the understanding of the verbal system as a whole. If the verb could *grosso modo* be characterised as a two stem system with a present, a preterite, and a mixed formation (a present from the preterite), this would simplify the description of the verb enormously. The idea of a basic two stem system will turn out to be a key concept in the historical account of the Tocharian subjunctive as well.

As they have identical endings, the present and the subjunctive can only be distinguished by their stems, and indeed they are in most cases. Therefore, as far as the endings are concerned, the subjunctive can be called a second present without reserve. The problem to be addressed in this chapter is whether the stem inventory of the present and the subjunctive is also the same. If the two stems are different, the present is in principle characterised by an extra suffix and it may be difficult to tell from a form in isolation whether it is a present or a subjunctive. Are those present-forming suffixes also found with subjunctives, or are they different? Are certain formations specific for presents and others for subjunctives? If there is an overlap in the suffix inventory, can those suffixes be combined?

The second question is intimately related to the first. There is little resemblance between the present and the preterite, neither in stem formation nor in the endings. Thus, if the present and the subjunctive make use of the same suffix inventory, the subjunctive and the preterite stems can hardly be identical. If, on the other hand, the formations of the subjunctive are different from those of the present, the preterite stem could theoretically be identical to that of the subjunctive.

2.1.3 METHOD

Although in this chapter a systematic inventory is made of various morphological markers such as palatalisation, accent, gradation, reduplication, and so on, the analysis is first and foremost based on suffixation, in which I follow the *Elementarbuch* (Krause and Thomas 1960). Unlike the *Elementarbuch*, and, for that matter, unlike most of the scholarly tradition, which is based on it, three other principles are applied: 1) suffixes are analysed according to their function, 2) stems may be derived from one another, and 3) stems may be identical.

One of the reasons for the wide variety of verbal suffixes in the *Elementarbuch* is that Krause and Thomas identify the function of a stem with the function of its suffix: if a stem is a subjunctive, its suffix is a subjunctive suffix. For instance, to explain the Tocharian B 3sg.prs. *aksaṣṣäṃ* '(s)he announces' next to the 3sg.sbj. *ākṣäṃ*, they posit a root *ak-* with a suffix *-sə^{ṣə}/$_{se}$-* for the present stem, which would imply that the subjunctive has a suffix *-^{ṣə}/$_{se}$-*.[5] However, as it turns out, there are no

[5] In fact, they have analysed the present in this way, whereas the subjunctive is assigned to class 2 with ^{ə}/$_{e}$-suffix (1960: 215). Evidently, such an analysis leads nowhere, since it leaves us with a miraculous difference between a root *ak-* for the present and a root *aks-* for the subjunctive (a notation *ak-s-* is no solution for this problem).

forms of the verb 'announce' without *-s-*, so that the root can easily be posited as *aks-*. Consequently, there is no need for a subjunctive suffix *-ˢᵊ/ₛₑ-* (which, in fact, is not found elsewhere): the subjunctive stem can be analysed as *aks-ᵓᵊ/ₑ-*. Likewise, the present can now be segmented as *aks-aṣṣ-äṃ* with a suffix *-ṣṣᵊ/ₛₖₑ-* that surfaces as *-aṣṣ-*. This suffix *-ṣṣᵊ/ₛₖₑ-* is the only distinction between the subjunctive and the present: its function is to form a present and therefore it is a present suffix.[6]

If the analysis of the *Elementarbuch* were to be carried through, the preterite *ākṣa* '(s)he announced' would have to be a *ṣa*-preterite. Such a *ṣa*-preterite is a direct consequence of the principle that all stems are derived from a root *ak-*. However, the element *ṣ* was also seen in the subjunctive *ākṣäṃ*, where *ṃ* is the ending, so that the only element that distinguishes the preterite from the subjunctive is *a*. Thus, as soon as derivation among stems is allowed, the number of stem-forming elements can be reduced: the element *a* is found in a large number of other preterite classes as well.

In another verb, we find the element *-ṣṣᵊ/ₛₖₑ-*, which was just analysed as a present suffix, in a subjunctive: *äkläṣṣäṃ* '(s)he will teach'. However, since the present is also *äkläṣṣäṃ* '(s)he teaches', it is not clear what the function of the *ṣṣᵊ/ₛₖₑ-* suffix is in this form. In principle, two analyses are possible: 1) *-ṣṣᵊ/ₛₖₑ-* has two functions because it forms presents *and* presents with identical subjunctives, or 2) since we know that *-ṣṣᵊ/ₛₖₑ-* is a present suffix, we suppose that it distinguishes the present here as well. In the latter case, the subjunctive must be a secondary extension of the present, but without the explicit marking with a suffix. We can call such a derivation "zero-derivation": the present is formed with the suffix *-ṣṣᵊ/ₛₖₑ-* and the subjunctive is formed from the present without a suffix or with a "zero suffix".

In the Tocharian verb, both the analysis of a suffix like *-ṣṣᵊ/ₛₖₑ-* as a present-subjunctive suffix and the analysis of the subjunctive as "zero-derived" can be fruitful. In some cases, for instance, it seems that all verbs need to have a subjunctive because a certain category is derived from it; in others, the present-subjunctive category seems to be a real category, for instance because its suffixes are limited in number and zero-derivation is not possible with all present suffixes.

2.1.4 STRUCTURE

As an introduction to my morphological analysis, I present the categories of the verb in 2.2 (p 26), whereas the principles of the stem pattern are given in 2.3 (p 39). The different root types, which play an important role in verbal stem formation, are presented in 2.4 (p 44), and 2.5 (p 47) is devoted to the different types of morphological markers. Then, the system of stem derivation is analysed for the three most important stems – present, subjunctive and preterite – for Tocharian A in 2.6 (p 94)

[6] On the basis of this example alone, it cannot be excluded that the same suffix distinguishes a subjunctive elsewhere. As it turns out, this suffix only forms presents, but there are other suffixes that may form presents in one category and subjunctives in another.

and for Tocharian B in 2.7 (p 117). The remaining formation patterns of the imperative (2.8, p 137) and the preterite participle (2.9, p 146) are followed by a short summary of the main findings in 2.10 (p 152).

2.2 CATEGORIES OF THE VERB[7]

Categories expressed by the verb are person and number of the subject (2.2.1, p 26), tense (2.2.2, p 31), aspect (2.2.3, p 32), mood (2.2.4, p 33), voice (2.2.5, p 36), and valency (2.2.6, p 37). Phonologically, a pronoun clitic is also part of the verb (2.2.7, p 38).

2.2.1 PERSON AND NUMBER OF THE SUBJECT

In the Tocharian languages, person and number of the subject are expressed in the finite verb. Both languages have a nominative-accusative system and so the agent of a transitive clause is marked in the same way as the subject of an intransitive clause. The subject can always, but need not be expressed explicitly elsewhere in the clause. Persons distinguished are the first, which is the speaker, the second, which is the person addressed, and the third, which is any subject outside the speech setting. Numbers distinguished are the singular, the dual and the plural. However, the dual is rare and not obligatory: apart from imperatives, only third person dual forms are attested, and normally the plural is used with dual subjects.

In neither language is the expression of person independent of that of number: the main locus of expression is the personal ending, which denotes person and number combined. However, the personal ending not only combines person and number, but it also expresses voice (see 2.2.5, p 36) and tense (see 2.2.2, p 31, and also 2.2.3, p 32 and 2.2.4, p 33). Thus, the personal ending carries a heavy functional load and the expression of person and number is not constant, but varies according to the other categories that are simultaneously expressed by the personal ending. If we disregard the dual for the moment, we can distinguish three sets of endings, which all distinguish the two numbers singular and plural, and the two voices active and middle. Two of these, the present set and the preterite set, distinguish all three persons; one, the imperative set, does not express person. Generally, the imperative always refers to the second person, but the Tocharian A imperative plural may also refer to the first. In Tocharian B, the present set is divided into three, where differences are confined to the singular active: the endings of the present and the subjunctive, those of the imperfect and the optative, which are identical formations, and those of the present-preterite, a formation that functions as a preterite but has the endings of a present. In both languages, the preterite set is divided into two: *a*-preterite endings vs *s*-preterite endings.

[7] Cf in general Winter (1994a: 286-287).

The endings are given in the schemes below:

Tocharian A	present	
	active	middle
1sg.	*-m*	*-mār*
2	*-t*	*-tār*
3	*-ṣ*	*-tär*
1pl.	*-mäs*	*-mtär*
2	*-c*	*-cär*
3	*-ñc*, *-y*	*-ntär*

Tocharian A	preterite				imperative	
	active		middle		active	middle
	ā-prt.	*s*-prt.	*ā*-prt.	*s*-prt.		
1sg.	*-ā*, *-wā*	*-wā*, *-w*	*-e*, *-we*	*-e*		
2	*-ṣt*	*-ṣt*	*-te*	*-te*	*-Ø*	*-ār*
3	*-Ø*	*-Ø*	*-t*	*-t*		
2du.					*-(y)nes*	
3	*-ynes*					
1pl.	*-mäs*	*-mäs*	*-mät*	*-mät*		
2	*-s*	*-s*?	*-c*	*-c*	*-s*	*-āc*
3	*-r*	*-r*	*-nt*	*-nt*		

Tocharian B	present			
	active			middle
	prs.-sbj.	ipf.-opt.	prs.-prt.	
1sg.	*-w*	*-m*	*-w*	*-mar*
2	*-tə*	*-tə*	*-Ø*	*-tar*
3	*-n*	*-Ø*	*-Ø*	*-tər*
3du.	prs. *-ten*; sbj. *-ys*?			*-ytər*
1pl.	*-mə*	*-mə*	*-mə*	*-mtər*[8]
2	*-cer*	*-cer*	*-sə*[9]	*-tər*
3	*-n*	*-n*	*-n*	*-ntər*

[8] The variants *-mttər* and *-mtte*, often cited, are in fact late; probably, they have to be read *-mntər* and *-mnte* respectively (Peyrot 2008a: 155-156).
[9] Attested is only *latso* B33a8.

Tocharian B	preterite active		middle	imperative active	middle
	a-prt.	*s*-prt.			
1sg.	*-wa*	*-wa*	*-may*		
2	*-sta*	*-sta*	*-tay*	*-Ø*	*-r*
3	*-Ø*	*-Ø*	*-te*		
2du.					*-yt*
1pl.	*-mə*	*-mə*	*-mte*[8]		
2	*-sə*	*-sə*?	*-t*	*-sə*	*-t*
3	*-re*	*-r*	*-nte*		

Peculiarities are the following:

dual

In both languages, the number of dual forms attested is limited and their analysis is far from certain. In Tocharian B, the ending *-ys* is attested in 3du. *stāmais* to sbj. {st$^{á}/_{ś}$ma-} 'stand' and 3du. *ltais* to prt. {l$^{əcə}/_{te}$-} 'go out', probably {stáma-ys} and {ləté-ys}, respectively. Apparently, *-teṃ* is used for presents and *-ys* for subjunctives, which would mean that the present-preterite of *lət-* 'go out' follows the subjunctive pattern instead of the present pattern. The 3du.mid. ending is attested in *tasaitär* of *təs-* 'put', which probably is to be analysed as {tasé-ytər} because the stem must be alternating: {ta$^{şə}/_{se}$-}. The imperative ending is attested in arch. *pyamttsait* to the stem {pə-yam-sa-} to 'do', probably {pə-yám-sa-yt}. In Tocharian A, only two forms are attested: 3du.prt. *tāken(e)s* to {tākā-}, probably {tākā-ynes}, and du.ipv. *pines* 'go!'. Since the root *y-* for 'go' contains a *y*, *pines* is ambiguous: it could either be {p(ä)-y-nes}, or it could have the same ending as *tākenes*: {p(ä)-y-ynes}.

TA 1sg.prt.

The distribution of the Tocharian 1sg.prt. forms is not easily presented in a scheme. In the *s*-preterite, the normal active ending is *-wā*, which has a rare relic variant *-u* {-w} (partly attested with the same verbs). In the preterite in *-ā* the normal active ending is *-ā*, which has a variant *-wā* that is attested only in imperfects and in reduplicated preterites (but for all verbs where it is attested, the more regular variant in *-ā* is always attested next to it). The long middle ending *-we* is only attested as a variant in imperfects. Additionally, we find *-we* in *yāmwe* 'I did' (~ *yāmpe*), the only 1sg. (middle) form of the *sā*-less preterite (next to the regular *s*-preterite ending *-e* in *yāmtse* 'id'); perhaps *-we* is regular in this subcategory (on these forms, see Winter 1965b: 206-209; Schmidt and Winter 1992).

a or *e* to the ending

In both languages, there are some endings that are difficult to separate from the preceding suffix. This ambiguity arises in *x*|Ø-root presents or subjunctives, and in

presents or subjunctives with the suffix TA {ʾä/$_{a}$}, TB {ʾə/$_{e}$}, where we find the *a* (TA) or *e* (TB) of the ʾä/$_{a}$- or ʾə/$_{e}$-suffix also in some endings of the *x*|Ø-root presents or subjunctives. The endings concerned are the 1sg., 1pl., and 3pl. active.

"mobile" *ā* in TA

In Tocharian A, there is variation between Ø and *ā* (or weakened *a*) in the preterite, where only the suffixed 3sg.act. ends in *-ā* (or weakened *a*), e.g. unsuffixed *tāk* 'it was' vs suffixed *tākaṃ* 'it was to her/ him'. Since the final *a* is found in all other forms of *tākā-*, it seems preferable to analyse *tākaṃ* as *tāka-ṃ* and take *tāk* as a special form of underlying {tākā-Ø}; forms such as the 2sg. *tākaṣt*, 3pl. *tākar* would then be {tākā-ṣt} and {tākā-r}, respectively. The alternative would be to set up the stem as {tāk-} and analyse *tākaṣt* and *tākar* as {tāk-āṣt} and {tāk-ār} instead. The former analysis, with the *a* or *ā* as a part of the stem and not of the ending, has the advantage that the endings of the *s*-preterite are the same as those of the *ā*-prt., e.g. 2sg. *yāmäṣt* {yām-ṣt} 'you did' and 3pl. *yāmär* {yām-r} 'they did'. This analysis also takes the *-s* of the unsuffixed 3sg.act. of the *s*-preterite as a shortened form of the *sā*-suffix found before a suffixed pronoun and in the middle, e.g. *yāmäs* {yām-sā-Ø} '(s)he did)' vs *yāmtsā-ṃ* {yām-sā-n} '(s)he did it' or '(s)he did for her/ him' and 3sg.mid. *yāmtsāt* {yām-sā-t} '(s)he did for herself/ himself'.

The only category where this analysis encounters problems is the imperative (see e.g. Winter 1994b: 405; 1994a: 304). Whereas the singular *päkras* of *kräsā-* 'know' could still be {p-krasā-Ø} with the same deletion rule as for the preterite, the plural *pkärsäs* clearly shows that the stem is {p-kräs-} with an ending *-s*, so that the singular must also be {p-kras-Ø}. This implies that the middle endings are {-ār} and {-āc} (*not* {-r} and {-c}), but the analysis of the suffixed singular becomes difficult. For instance, we find *pkanāñi* and *pyāmāṃ*, which have to be analysed as {p-kan-ā-ñäy} and {p-yām-ā-n} with an extra *ā*, or as {p-kan-āñäy} and {p-yām-ān} with special imperative variants for the suffixed pronouns. Probably, an analysis with an extra *ā* is preferable, since we even find one set of variants of this type: *pyāmñi* without *ā* vs *pyāmāṃ* with *ā* (without distinguishable difference in meaning). The special character of the *ā* in the endings of the imperative is also shown by its stability, i.e. it is never weakened to *a* or *ä* as in the preterite or subjunctive.

TA 3pl.prs. *-y*

By far the most frequent 3pl.prs. ending in Tocharian A is *-ñc*, which changes a preceding *a* or *ā* to *e*, and an *ä* to <i>, e.g. *tākeñc* {tākā-ñc} 'they will be' or *träṅkiñc* {tränk(ä)-ñc} 'they say'. Next to the *ñc*-endings, we find endings without *ñc*, but with the colouring that it brings along, so that the only possible analysis is *y* (as it is presented in the table above), e.g. *tāke* {tākā-y} and *träṅki* {tränk(ä)-y}.

Apart from the personal ending, person and number may be expressed additionally by changes of the stem. For instance, TA 3sg.prs.mid. *eṃtsäṣtär* {ent^{s}-ṣä-tr} '(s)he

takes' and 3pl.prs.mid. *eṃtssanträ* {ent^{s}-sa-ntr} 'they take' are not only distinguished by their different endings *-tär* and *-nträ*, but also by a difference in the present suffix: 3sg.prs.mid. *-ṣä-* vs 3pl.prs.mid. *-sa-*. Likewise, TA 3sg.sbj. *kalkaṣ* {kalka-ṣ} '(s)he will go' and 3pl.sbj. *kälkeñc* {kälkā-ñc} 'they will go' are distinguished both by the endings *-ṣ* and *-ñc*, and the difference in vowel grade of the stem: *kalka-* vs *kälke-* or *kälkā-*.

The same situation is found in Tocharian B, and there it plays an even more important role. Although some Tocharian A endings are homophonous, as for instance the 2sg.prs.act. and the 3sg.prt.mid, which are both *-t*, the endings of one set are always neatly distinct. In Tocharian B, however, homophonous endings are also found within sets: the 3sg.prs. and the 3pl.prs. in *-n*, the 3sg.prs.mid. and the 2pl.prs.mid. in *-tər* and the 1sg.ipf.-opt. and the 1pl.ipf.opt. in *-m(ə)*.[10] In some cases, these forms are indistinguishable indeed, but in others, the additional stem changes can make the difference. In Tocharian B, these changes are therefore not always additional in the literal sense: they distinguish different persons and numbers, i.e. in practice only singular forms from plural forms with homophonous endings. For instance, *tärkanaṃ* must be a third person present form of 'take', but the number is ambiguous. In the corresponding subjunctive forms, the numbers are distinguished by the vowel grade of the root: 3sg.sbj. *tārkaṃ* {tárka-n} vs 3pl.sbj. *tarkaṃ* {tə́rka-n}. In many cases, it is the present suffix that makes the difference: 3sg.prs. *weṣṣäṃ* '(s)he says' vs 3pl.prs. *weskeṃ* 'they say' are distinguished only by the present suffix *-ṣṣə-* vs *-ske-*. The homophonous *m*-endings for the first person are only found together in the imperfect-optative and in *yə-* 'go'. In the imperfect-optative, the 1pl. ending always combines with the suffix variant *-əye-*, whereas the 1sg. is found after *-əy-*, so that they could alternatively be analysed as *-m* and *-em*, respectively. In the verb for 'go', they are distinct because the 1pl. has a special root variant: the 1sg. is {yə-m}, the 1pl. {yəne-mə} or {yən-emə}. The endings *-tər* of the 3sg. and 2pl. middle always yield homophonous forms because the stem alternations in the root and the suffix that sometimes disambiguate the other homophonous endings are not found among the two variants of *-tər*. Since the distinctions between homophonous endings of different sets are fully dependent on the stems they are used with, these are not discussed here, but in 2.5 (especially 2.5.2, p 56 and 2.5.4, p 64), and in 2.6 (p 94) and 2.7 (p 117).

In both languages, the main verb of a clause can also be a nominal (or infinite) form; principally a gerund or a participle. As nominal forms, they express relations totally different from finite verb forms. The gerunds, for instance, agree with the subject when intransitive and with the object when transitive, whereas the preterite participle may agree with the subject or the object; the present participle expresses

[10] On the basis of the variants of the first person endings elsewhere, we should probably posit the 1sg. as *-m* and the 1pl. as *-mə*, since only the latter may receive a mobile *-o*. As far as I could check, this longer 1pl. ending *-mo* is not attested for the imperfect-optative.

no agreement. If agreement is expressed, it conforms to the categories of the nominal system: the preterite participle and the gerunds are inflected for number, gender and case.

2.2.2 TENSE[11]

Tense, aspect and mood are all correlated in Tocharian and the meaning of the different categories is highly dependent on their syntactic function. The aim of this section and the following about aspect and mood is to give the general impression that is needed for a rough understanding of the verbal system; details can be found in chapter 3.

In both languages, tenses distinguished are present and past as well as future, as argued in chapter 3. Present tense is expressed by the present; past tense by the preterite and the imperfect. The subjunctive denotes future events, but it also has other functions, notably in subclauses. The present tense is hardly used to denote future or past events, but it may refer to "tenseless" events in general statements. The preterite may sometimes have present reference; the difference with the category present is then one of aspect.

As concerns the formal expression of tense, the two languages diverge. In Tocharian A, both preterite and imperfect take the preterite endings, which are exclusively used in these two categories. Thus, there is a one-to-one correspondence between the preterite endings and past tense. The contrast between the subjunctive (in future function) and the present is expressed by a difference in stem: the endings of present and subjunctive are identical, so that one could say that they have non-past reference.

In Tocharian B, the situation is more complicated. In this language, the preterite endings are exclusively used with the preterite, so that they are clear markers of past tense. However, the imperfect takes different endings and therefore there is no one-to-one correspondence between the preterite endings and past tense. The endings of the imperfect belong to the present set and within that set to the imperfect-optative subgroup, used with the imperfect and the optative. Although the optative is sometimes used in past contexts, this is clearly not the core meaning of that category. Accordingly, the imperfect-optative endings are no tense markers: in the case of the imperfect, tense is expressed by the combination of the endings and the imperfect-optative suffix on the one hand, and the difference in stem between the imperfect

[11] It is very difficult to find good examples showing whether the tense of a complement clause is defined by the time of utterance (absolute tense, e.g. Du. *ik wist* [prt.] *dat hij ging* [prt.] 'I knew he went') or by the time of reference (relative tense, e.g. Gm. *ich wußte* [prt.], *dass er geht* [prs.] 'id'). With verbs of saying, thinking etc the content is in Tocharian normally expressed as direct speech, i.e. the typical complement clauses are simply not there. For comparison clauses in Tocharian A that seem to have relative tense, see 3.3.9 (p 208); for a complex construction in Tocharian B where the tenses seem to be relative, see 3.7.1 (p 276).

(formed from the present stem) and the optative (formed from the subjunctive stem) on the other. Since the present and the subjunctive stem need not be formally distinct, imperfect and optative may be identical in form, too.

The expression of tense is in Tocharian B further blurred by the existence of marginal mixed categories. The first is best termed the present-preterite because it functions as a preterite, but it has morphological features of the present-subjunctive.[12] The endings are those of the present set, even though the 2sg. has a unique zero ending and the 2pl. is taken from the preterite set; however, the stem is clearly not the present stem, although it is difficult to say what other stem it resembles most because of the small number of forms. The second mixed formation is even more hidden: it is the copula 3sg. *ste*, 3pl. *skente*. The copula has a stem that looks like a present stem, i.e. {ˢˢˢᵊ/ₛₖₑ-} (with *ṣṣə-* turning into *s-*), while the endings are the ones of the preterite middle, i.e. 3sg.mid. {-te}, 3pl.mid. {-nte}.

The nominal forms may have tense reference, too. The preterite participle may denote past events, although it seems to be used with present reference even more often than the finite preterite. In principle, the present participle denotes present events, but in subclauses it also expresses contemporaneity with the event of the main clause. The subjunctive gerund mostly refers to future events, but the core meaning of this form is possibility: the future notion is derived from it through inference. The present gerund expresses necessity, which may be close to the notion of present tense in the sense that according to the speaker the event should follow shortly after the moment of speaking, but taken by itself the present gerund does not have present tense reference.

To sum up, both languages have a difference between present and past tense, but the expression of this distinction is straightforward only in Tocharian A: in Tocharian B there are several different kinds of morphological marking. There are no different degrees of remoteness of the past tense. Future tense is expressed by the subjunctive, which is also used in other functions in subclauses.

2.2.3 ASPECT[13]

In Tocharian, the most important expression of aspect is found in the past tense. Both languages have two past tenses, namely a preterite and an imperfect, and the difference between the two is one of aspect. However, it is difficult to draw a sharp distinction between the two. First of all, the preterite is used much more often than the imperfect and it seems to have a certain default value, whereas the imperfect is the marked variant. The imperfect has two uses which can be defined as imperfective: it is used to describe backgrounds and states of affairs, and it may

[12] One may compare the Germanic preterite-present, which functions as a present but has preterite features in its morphology.

[13] For the syntax of the past tenses, cf Thomas (1957).

denote a repeated event. In contrast, the preterite is preferred for isolated and foreground events and consecutive actions. If the two are used together in a narrative, background information is in the imperfect whereas focal events are in the preterite.

An additional value of the preterite is resultative, i.e. it may depict a given present situation as still relevant although it is the result of a past event. This resultative use blurs the distinction between past and present tense: since the focus is on the present situation, the resultative preterite has present tense reference. In resultative use, the preterite differs from the present on the aspectual level: the present denotes a present event with indefinite boundaries, whereas the preterite denotes a present state resulting from a recent change. In contrast, the imperfect is never used to denote present events. With the preterite participle, the resultative meaning is even more salient than with the finite preterite. If the preterite participle is used with an imperfect copula, it denotes a state that prevailed in the past.

The morphological expression of the distinction preterite versus imperfect is primarily made by means of different stems. In Tocharian A, imperfect and preterite have the same endings (see also 2.2.1, p 21), so that the two are distinguished only by a difference in stem. In Tocharian B, however, the endings are taken from different sets. Next to the different endings, the two categories are also distinguished by different stems. In both languages, the preterite and imperfect stems are not distinguished by a simple morphological contrast, but by a double one: the preterite is formed from the basic preterite stem, whereas the imperfect is formed from the basic present stem extended with an extra suffix. In Tocharian A, a marginal category is formed by imperfects that are derived from the root by means of internal stem change.

2.2.4 MOOD

There are two primary modal categories in Tocharian: the imperative and the optative, which are both deontic in principle. That is, the imperative and the optative denote irreal events that the subject should actualise according to the speaker, a third person or external circumstances, comparable to English *do!*, *may (s)he do* or *(s)he should do*. Principally in subclauses, the optative has epistemic functions, too: it may express the probability or possibility of an irreal event, comparable to English *(s)he may do* or *(s)he could do*.

With the imperative, the deontic source is the speaker: it is a command or a request of the speaker. The subject of the imperative is always the addressee, but it is not explicitly expressed. Thus, there are only second person imperative forms, and it is not necessary to indicate person when citing imperative forms. The only exception is found in Tocharian A, where plural imperatives can be used for the first person too, thus not only denoting more than one addressee, but including the speaker him or herself. However, the first person plural imperative has no special formal person marking, as it is a normal plural imperative form. The imperative cannot be negated:

with a negation, the present or the subjunctive is used. The present is used when the event has already started and should stop (INHIBITIVE), whereas the subjunctive is used for a future event (PREVENTIVE).

With the optative, the deontic source is either the speaker or external circumstances. If the deontic source is the speaker, the difference with the imperative is that the claim is less strong. In other words, the imperative is closer to a command and the optative closer to a wish, i.e. literally OPTATIVE. If the deontic source is formed by external circumstances, we can call its function OBLIGATIVE. In OBLIGATIVE function, the speaker plays an important role too. In the first place, the external circumstances that require the subject to carry out a certain action are reported by the speaker, and in this way it is the speaker who directs the subject, although the fundamental motives are external. In the second place, it is of course the speaker who selects and interprets these external motives, so that the influence of the speaker on the pragmatic end result may in fact be considerable. However, this influence is not part of the core meaning of the optative. Next to its deontic function, the optative has epistemic functions, which will be discussed below.

In main clauses, the subjunctive denotes future tense and it is not modal. However, its uses in subclauses could perhaps be analysed as instances of epistemic modality: the subclause subjunctive denotes decreased certainty about the truth of a proposition as evaluated by the speaker. Examples of these uncertainty uses are REAL CONDITIONAL, i.e. *if he does*, CONCESSIVE, i.e. *even though he does* and ITERATIVE, i.e. *each times he does*; for a detailed discussion of these subclause uses, see chapter 3, especially 3.2 (p 166) on Tocharian A and 3.6 (p 250) on Tocharian B.

The non-deontic, epistemic uses of the optative are best seen as extensions of the subclause subjunctive system. Like the subjunctive, its main functions in subclauses are hypothetical, concessive and iterative. With conditionals, the truth claim of the optative is weaker than the subjunctive: instead of a real conditional it denotes an IRREAL CONDITIONAL, i.e. *if he did* in conditional clauses. Likewise, the optative in main clauses does not denote future, but an uncertain future event: DUBITATIVE, i.e. *he could do*. The concessive and iterative optative is limited to past tense use and it is parallel to the subjunctive: while the subjunctive is used with present tense main clauses, the optative is used with past tense main clauses.

Apart from the primary modals listed above, there are also modal nominal forms and compound modals. The modal nominal forms are the present and the subjunctive gerunds.[14] Although the finite present is not a modal category, its gerund definitely is (even though a relationship with present tense is imaginable): the present gerund denotes that an event is to take place on external, mostly objective grounds. The grounds can be moral, but according to generally accepted principles, and in most cases the event is to the benefit of the agent, or at least the consequences of the event will benefit the agent. As pointed out above, the gerund may morpho-

[14] For the gerunds, cf in particular Thomas (1952).

logically agree with the patient; indeed, it seems that the deontic value is also directed towards the patient: the focus is on the event that should be carried out, not on any particular agent.

The subjunctive gerund is also modal, but not deontic: it denotes the possibility of an event. This possibility is defined as favourable circumstances for the agent to carry out the event, or rather favourable circumstances for the event to be carried out. If the agent is explicit, possibility and ability may be difficult to distinguish, but the ability of the agent to carry out the event is certainly a special case of favourable circumstances. Permission does not belong to the semantic core of the subjunctive gerund, as it can be seen as a special case of favourable circumstances.

There are many combinations possible of modal nominal forms with a copula or nominal forms with a modal copula, but most of them are not real compound tenses, aspects or moods (see chapter 3, especially 3.4, p 216, for Tocharian A and 3.7, p 276, for Tocharian B). There is only one frequent and important mood, which is formed by a combination of the subjunctive gerund with an imperfect copula. This construction is to be compared syntactically with the conditional subjunctive and optative. While the subjunctive denotes a probable condition, and the optative a possible, but not probable one, the subjunctive gerund with an imperfect copula in principle expresses a purely theoretical conditional that is not possible. The impossibility of the conditional is usually caused by its situation in the past and it is in principle contrary to fact, i.e. COUNTERFACTUAL; however, there is at least one example where the construction expresses only a very low probability, *not* counterfactuality (see 3.7.1, p 276).

	deontic	epistemic (main clause)	epistemic (subclause)
imperative	IMPERATIVE (command)		
optative	OPTATIVE (wish); OBLIGATIVE (obligation)	DUBITATIVE (doubt)	IRREAL CONDITIONAL; PAST ITERATIVE
subjunctive	PREVENTIVE (negative command)	FUTURE	REAL CONDITIONAL; CONCESSIVE; PRESENT ITERATIVE
present	INHIBITIVE (negative command)		
prs.ger.	NECESSITY		
sbj.ger.		POSSIBILITY	
sbj.ger. + ipf.cop.		COUNTERFACTUAL or LOW PROBABILITY	COUNTERFACTUAL CONDITIONAL

To sum up, the optative, being both deontic and epistemic, denotes wishes and obligations (OPTATIVE and OBLIGATIVE), and non-actual and improbable events (DUBITATIVE, IRREAL CONDITIONAL, PAST ITERATIVE); the imperative is deontic and is used for commands; the subjunctive denotes future tense in main clauses, while in subclauses it is used for uncertain but probable events (such as REAL CONDITIONAL, CONCESSIVE and PRESENT ITERATIVE), which could be classified as epistemic modality.

The morphological marking of mood is straightforward. The imperative has its own stem and its own set of endings; the subjunctive has its own stem and present endings; the optative is derived from the subjunctive basic stem by means of a suffix and has present endings (in Tocharian B of the imperfect-optative subset). The gerunds are formed from the present and subjunctive basic stems respectively, by means of the gerund suffix.

2.2.5 VOICE[15]

In Tocharian, all finite verb forms are marked for voice, which has a binary opposition: active versus middle. In contrast, all infinite forms have no such marking. Most verbs do not have contrastive voice, as they are either active only, middle only, or medio-active. The medio-active is a special morphological category where some stems are active only (mostly subjunctive, preterite and imperative; otherwise preterite and imperative) and some are middle only (mostly the present; otherwise present and subjunctive). Only in a small group of verbs do we find a contrast between active and middle for the same stem.

Although transitivity and voice interfere in many ways, they do not exclude each other: all four voice types, i.e. active only, middle only, medio-active, and active and middle, may be intransitive or transitive. However, among verbs with contrastive voice, intransitive verbs, i.e. verbs that have an intransitive *active* inflexion, are extremely rare, see 'come' below. In verbs with contrastive voice, the middle is mostly a passive or an indirect reflexive; we also find MIDDLE, i.e. intransitive events without agent, like 'perish'. In some cases, the semantic difference between active and middle is not evident from the texts, but a close relationship between the event and the subject seems to be a constant element. The reflexive is mostly indirect, but it can also be direct, or it can express a genitive relation between the subject and the object – this range of relations is reminiscent of the situation with the pronoun clitics, which are discussed below.

It is important to distinguish simple verbs from phrasal verbs, i.e. verbs that combine with an invariable element, in Tocharian usually an (almost) incorporated object. For instance, TB *tərka-* 'let go' is active only, whereas the phrasal verb *wiyai tərka-* 'frighten' (?) is middle only. TB *kəla-* and the phrasal verb *epiyac kəla-* have

[15] For the middle in general, cf Schmidt (1974).

both contrastive voice, but with a different function: *kəla-* has a semantic difference between 'bring' in the active and 'bring along' in the middle, whereas *epiyac kəla-* has a valency difference between transitive 'remind' in the active and intransitive 'remember' in the middle.[16] Probably, the middle of the only certain example of an intransitive verb with contrastive voice, 'come', is to be analysed as a (different) phrasal verb, too: it always combines with TB *ṣe*, *ṣesa*, TA *ṣyak* to mean 'come together'.

In the other categories, i.e. active only, middle only and medio-active, it seems that only some tendencies can be observed. Active only verbs are more often transitive, and middle only verbs are more often intransitive, but as indicated above, all combinations are possible. That the voice type is at least to a certain extent independent from the syntax and semantics of the verb, is for instance shown by 'stand', which is suppletive in both languages: TA present *käĺ-*, other stems *ṣtämā-*, TB present *kəĺ-*, other stems *stəma-*; the root that supplies the present is middle only, but the root that supplies the other stems is active only. The reverse is found with TB 'carry', which has the active only present *pər-*, but the middle only preterite *kama-*. Thus, voice is not (purely) grammatical when it is not contrastive, but rather part of the lexicon.

2.2.6 VALENCY

In the Tocharian verb, valency plays an important role. However, it has no simple expression, but is reflected in a number of other distinctions, which I will mention briefly here. Valency may be marked on three levels: it may be marked on the stem, on the ending, or by means of derivation. Stem marking is the most complicated of the three because there are several different types of marking that are not obligatory on the one hand, and not exclusive on the other; since stem marking presupposes an analysis of the stem system, it is not discussed here. Ending marking of valency functions by means of voice, i.e. valency is not directly marked by the endings, but voice is correlated with valency: the middle, for instance, may – but need not – decrease valency (see above for more details).

An important feature of the Tocharian verbal system is derivation marking, which may be described as a fourfold system. In the traditional analysis,[17] derivation marking is a system of a base verb with up to two fully-fledged derived causative verbs, namely *s*-causatives and *sk*-causatives. It was thought that the base verb is intransitive and the causatives increase its valency, without there being a clear distinction between *s*-causatives and *sk*-causatives (in TA, *s*-causatives with reduplicated preterites). However, it seems that the actual derivation patterns are more

[16] In Dutch and German, for instance, this set is transitive vs reflexive, e.g. Du. *herinneren* 'remind' vs reflexive *zich herinneren* 'remember'.

[17] Cf Sieg, Siegling and Schulze (1931), Krause (1952), Krause and Thomas (1960).

complicated. First of all, many "base verbs" are of the same regular type and so they are clearly part of the derivation system, but perhaps not the starting point, the base: instead, they could be derived intransitives. Second, although the *sk*-causatives must be derived indeed, it is not obvious that the *s*-causatives are. Third, some of these causatives and intransitives are related to verbs of different types, which yields the fourfold system: *s*-causatives, *sk*-causatives (TA *s*-causatives with reduplicated preterites), intransitives and other verbs.

2.2.7 PRONOUN SUFFIX[18]

The Tocharian pronoun suffixes are different from all categories discussed up to now because they are not part of the verb proper, but of the pronoun system. However, they are closer to the verb than to any other category because they are part of the argument structure of the verb, and they can only be suffixed to the finite verb, so that they form one (accentual) word with the finite verb.

Whereas the endings of the finite verb agree with the subject, the pronoun suffixes agree with an object. There is only one set, in which the two functions of indirect and direct object are left undistinguished. Since in Tocharian there is no difference between genitive and dative, the indirect object must be understood as covering genitive relations, too, the most important being possession and agency (with passives). Although an event may have up to two arguments other than the subject, only one can be marked with a pronoun suffix. Thus, it may be impossible to tell on the basis of the form only what a pronoun suffix refers to.

The shapes of the pronoun suffixes are the following (person is not distinguished in the plural number):

	1sg.	2sg.	3sg.	pl.
Tocharian A	*-ñi* {-ñäy}	*-ci* {-cäy}	*-n*	*-m*
Tocharian B	*-ñ*	*-c*	*-ne*	*-me*

The plural form stands out within Tocharian because it has no distinction for person: for this asymetry there is no parallel either in the verb nor in the pronominal system. To stress the possible ambiguities of this system, it may be helpful to note that TA *-m*, TB *-me* may be translated with 'us', 'you', 'them', or 'to us', 'to you', 'to them', or 'of us', 'of you', 'of them'.

The pronoun suffixes differ from the personal endings in that they are not obligatory and their referents are not normally explicitly expressed elsewhere in the clause, whereas personal endings may be combined with explicitly expressed subjects. There seems to be a certain functional overlap between the pronoun suffixes and the middle endings, since the middle endings may express the same

[18] On the syntax of the pronoun suffix, cf Carling (2006).

relations: direct object, indirect object and possessive. There are also differences, however: the middle endings cannot refer to the agent of a passive and they are of course coreferential with the subject, whereas the pronoun suffixes are used exactly for non-subject referents. Pronoun suffixes can be combined with middle endings as the direct object when the verb is transitive (principally with middle only verbs), or as the agent when the verb is passive (this applies mainly to verbs with distinctive voice), or as the indirect object with intransitive and passive middles.

2.3 THE STEM PATTERN

In this section, I describe the morphological lay-out of the Tocharian verb in general; particular stem classes are discussed in sections 2.6-2.7 (p 94). First the basic stems are discussed (2.3.1), then the derived stems and forms (2.3.2, p 40).

2.3.1 BASIC STEMS

The five basic stems are the present, subjunctive, preterite, preterite participle and imperative stems. These can be called basic stems because they are not derived by simple morphological patterns, but make up a complicated system of different stem patterns themselves. The derived stems and forms, on the other hand, are formed from the basic stems with invariable suffixes following predictable patterns.

The basic stems are named after the basic categories formed from them. Thus, the present is formed from the present stem, the subjunctive from the subjunctive stem, the preterite from the preterite stem, the preterite participle from the preterite participle stem and the imperative from the imperative stem. An example of a complete set of stems is TA *kräsā-*, TB *kərsa-*, both 'know':

	TA	TB
present	*kräsnā-*	*kərsə́na-*
subjunctive	*krasa-*, *kräsā-*	*kársa-*, *kə́rsa-*
preterite	*śräsā-*, *krasa-*, *kräsā-*	*śərsá-*, *kərsá-*
preterite participle	*kräso*	*kərsáw-*, *kərsoṣ-*
imperative	*-kras-*, *-kräs-*	*-karsa-*, *-kərsa-*

The finite forms are obtained by adding the endings, and the imperative prefix in the imperative in addition, e.g.: 3sg.prs. TA {kräsnā-ṣ} *kärsnāṣ*, TB {kərsə́na-n} *kärsanaṃ*; 3sg.sbj. TA {krasa-ṣ} *krasaṣ*, TB {kársa-n} *kārsaṃ*; 3sg.prt. TA {śräsā-Ø} *śärs*, TB {śərsá-Ø} *śarsa*; sg.ipv. TA {pä-kras-Ø} *päkras*, TB {pə-karsa-Ø} *pkārsa*. The preterite participle is a nominal form: nom.sg.m. TA {kräso-Ø} *kärso*, TB {kərsáw-Ø} *kärsau*; obl.sg.m. TA {kräso-nt} *kärsont*, TB {kərsoṣ-Ø} *kärsoṣ*.

If we look at the shape of the stems, we see that the affinity between subjunctive, preterite and imperative is much larger than that of any of these to the present. Although each of the three non-present stems – subjunctive, preterite and imperative

– has its peculiarities, there are several overlaps: the root shapes *krasa-* and *kärsā-* occur in all three in TA, and *kərsa-* in all three in TB. Moreover, TA *kärs-* and TB *kərs-* recur in the preterite participle. The present stands out in having a nasal *n* that is not found in the other stems.

This rough dichotomy between present stem on the one hand and subjunctive, preterite, imperative and preterite participle stems on the other is found with many verbs. It is also found, for instance, in suppletive verbs such as 'stand':

	TA	TB
present	*käl$^{i\ddot{a}}$/$_{a}$-*	*kəl$^{i\partial}$/$_{e}$-*
subjunctive	*ṣtama-*, *ṣtämā-*	*stáma-*, *stáma-*
preterite	*śämā-*, *ṣtama-*	*ścəmá-*
preterite participle	*ṣtämo*	*stəmáw-*, *stəmoṣ-*
imperative	*-ṣtam-*, *-ṣtäm-*	*-stama-**, *-stəma-**

In this case, the present deviates in having its own root, whereas all other stems are formed from one other root. The exceptions to the general pattern that all non-present stems go together form a current theme throughout this study; the interplay of the non-present stems and their relation to the present stem are discussed in this chapter (sections 2.6-2.7, p 94).

2.3.2 DERIVED STEMS

From the five basic stems all other verbal forms can be derived. The derived stems are the imperfect and the optative stems, from which – naturally – the imperfect and the optative are formed.

In Tocharian B, there is one suffix for the imperfect and the optative, which is {-'əy-}. The ipf.-opt. suffix is added to the basic present stem to form the imperfect stem, and to the basic subjunctive stem to form the optative stem, e.g. prs. {kərsə́na-} → ipf. {kərsə́na-'əy-}; sbj. {kársa-, kə́rsa-} → opt. {kə́rsa-'əy-}. A few morphophonological rules are needed to obtain the ultimate outcome, one of which is *a'əy* → *oy*. Accordingly, the 3sg. forms are ipf. *kärsanoy* {kərsə́na-'əy-Ø} and opt. *karsoy* {kə́rsa-'əy-Ø}. The other rules are *e'əy* → *əy* and *o'əy* → *əy* (the ' denotes morphological palatalisation, a phenomenon that is discussed below in 2.5.4, p 64). If the subjunctive stem has two variants, it is normally the weak variant, i.e. the variant with *ə*-vocalism in the root, that is taken as a basis for the optative stem. There are two irregular imperfects that are discussed further below.

In Tocharian A, imperfect and optative are formed differently. The optative is formed according to a regular pattern that is similar to the one observed for Tocharian B. The optative suffix {-'äy-} is added to the subjunctive stem, and likewise to the weak variant, if there are two variants. The morphophonological rules of Tocharian A are comparable to Tocharian B, but not identical: *a'äy* and *ā'äy* both combine to give simple (non-palatalising) *äy*.

As in Tocharian B, the Tocharian A imperfect is mostly formed from the present stem. The most frequent type is formed with the suffix {-'ā-}, the only morphophonological rule being that any *a* or *ā* of the present stem is deleted, or: *a'ā* → *'ā* and *ā'ā* → *'ā*. If the present stem has an alternating suffix like {-$^{ṣā}/_{sa}$-}, the result is e.g. *-ṣā-*.

Next to this frequent type, there is a rare type that could be called "strong" because it is formed by root-internal changes. It has initial palatalisation if possible, a root vowel *ā*, and a suffix *a* (certainly a weakened *ā*), and it seems to be formed to the root (or to the subjunctive or the preterite; at least typical present markers are not found): ipf. {cārkā-} to *tärkā-* 'let go' (prs. {tärnā-}, sbj. {tarkā-, tärkā-}, prt. {cärkā-, tarkā-}). The only examples of a strong imperfect formed to the present are {pārā-} to *pär-* 'carry' and {ĺākā-} to *läkā-* 'see', both suppletive: 'carry' has the sbj. {kāmā-}, 'see' has the sbj. {pälkā-} etc). There are also some formations that function as imperfects, but are formally identical to preterites. As these occur only in suppletive systems, their formation is analysed as if they were preterites.

In both languages an aberrant type is attested in two verbs, namely 'be' and 'go'. In the case of 'go', there is obviously a formal relation between the present and the imperfect, but the imperfect of 'be' is suppletive; the root is not attested otherwise. The present stems of 'go' are TA {y-}, TB {y-}, and the imperfect stems are TA {ye-}, TB {yey-}; apparently, the suffix is {-e-} in Tocharian A and {-ey-} in Tocharian B. In Tocharian B, it inflects as a normal imperfect, but in Tocharian A it takes present endings, whereas all other imperfects take preterite endings. In both languages, 'be' is exactly parallel: TA {ṣe-}, TB {ṣey-}.

2.3.3 DERIVED FORMS

The inventory and the distribution of the infinite forms is nearly the same in Tocharian A and Tocharian B; the only exception is the infinitive, which is derived from the present stem in Tocharian A, but from the subjunctive stem in Tocharian B.

From the present stem are derived:

- the present gerund, which is formed with the suffix {-l} in TA, with {-lle} in TB, from the TA *ä-* or TB *ə*-variant of presents with an alternating suffix in $^{'ä}/_{a}$ or $^{'ə}/_{e}$, respectively;
- the present participle, which is formed with the suffix {-mān} in TA, with {-mane} in TB, from the TA *a-* or TB *e*-variant of presents with an alternating suffix;
- several different agent nouns, all formed from the TA *ä-* or TB *ə*-variant of presents with an alternating suffix;
- a verbal adjective in TB *-mo*, from the *ə*-variant of presents with an alternating suffix;

– the TA infinitive with the suffix {-tˢäy}, formed from the *ä*-variant of presents with an alternating suffix.

From the subjunctive stem are derived:

– the subjunctive gerund, which is formed with the suffix {-l} in TA, with {-lle} in TB, from the TA *ä*- or TB *ə*-variant of subjunctives with an alternating suffix, and from the *ə*- or *ä*-grade variant of subjunctives with two root variants;
– the verbal noun, which is derived from the subjunctive gerund, in TA with the suffix {-une}, in TB with {-ññe}, combining to {-lune} and {-lñe} (rarely {-llәññe}) respectively;
– the agent noun in {-əwca} in TB, from the *ə*-variant of subjunctives with an alternating suffix;
– the privative in TA and TB, which is formed with a circumfix consisting of a prefix TA {an-}, TB {en-} (which undergoes heavy changes to TA {a-, ā-}, and TB {e-, on-, an-, a-}), and a suffix TA {-t}, TB {-tte}, from the TA *ä*- or TB *ə*-variant of subjunctives with an alternating suffix;
– the TB infinitive with the suffix {-tˢəy}, formed from the *ə*-variant of subjunctives with an alternating suffix, and from the *ə*-grade variant of subjunctives with two root variants.

From the preterite participle is derived:

– the abstract in TA {-r}, TB {-r}, in TB from the stem found in e.g. the obl.sg.m. The abstract is often used with the ablative suffix in both languages, and also with the perlative in TA, to form an absolutive construction.[19]

No forms are derived from the preterite or the imperative stem.

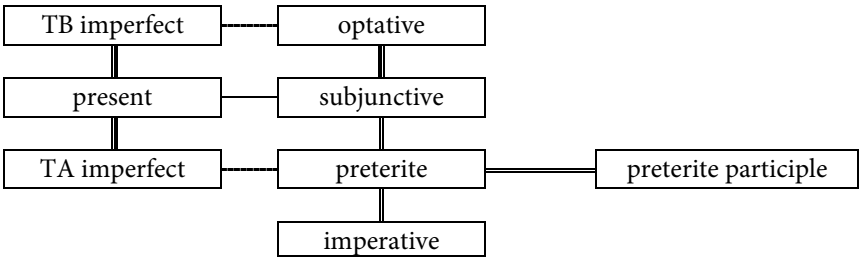
2.3.4 OVERVIEW

For the analysis of the stem patterns, all forms mentioned above may play a role, as they could help identify a certain stem. For convenience, an overview of the basic stems and their derivations is given below (from the basic preterite and imperative stems no other stems are derived).

[19] For the usage cf Thomas (1960).

	present stem	*subjunctive stem*	*preterite ptc. stem*
Tocharian A	infinitive	strong imperfect	
Tocharian A and B	present	subjunctive	abstract
	(weak) imperfect	optative	
	present gerund	subjunctive gerund	
	present participle	verbal noun	
	agent nouns	privative	
	verbal adjective		
Tocharian B		infinitive	
		uca-agent noun	

The most important morphological relationships between the different stems are expressed in the scheme below.



In this scheme, the basic and derived stems are represented in boxes, while the affinities between the stems are represented by different types of lines. The threefold line indicates strong affinity, which is found between the derived stems and their basic stems; double lines are used to indicate the subjunctive-preterite-imperative complex (including the preterite participle) hinted at above; the simple line denotes the weaker connection between present and subjunctive, or between the present and the subjunctive-preterite-imperative complex. The dotted lines indicate the connections between the TB imperfect and the optative (both in the endings and the suffix), and those between the TA imperfect and the preterite (only in the endings). If the imperfect had to be described in terms of the other stems, one could call it the optative of the present stem in Tocharian B, and the preterite of the present stem in Tocharian A.

As remarked above, the scheme is simplified, and the subjunctive-preterite-imperative complex is explained in the remainder of the chapter (especially 2.6-2.7, p 94). Hopefully, it can serve as a guideline for sections 2.6-2.7.

2.4 THE ROOT[20]

In both Tocharian languages, there are different root types, which are essential to the formation of the basic stems. Four main types as well as some marginal subtypes can be distinguished. The most important dichotomy is between roots ending in TB *-a*, TA *-ā* (or weakened *-a* or *-ä*) and roots without root-final *-a* or *-ā*; both types are further divided into a grading type with basic root vocalism TA *ä*, TB *ə* and a non-grading type with basic root vocalism TA *ā*, TB *a* (or, in some cases, TA and TB *e* or *o*, and marginally TA *a*).

The importance of distinguishing different root types is easily demonstrated with some examples from Tocharian B. In this language, there are four basic types of preterite participles, which do not fully agree with the root types, but nevertheless have a strong correlation with them. The fourth preterite participle type is found with all roots with *a*-vocalism in the root and a root-final *-a*, e.g. *taka-* 'be', prt.ptc.4 *tatākau*, *tatākaṣ*; the third participle type is found with all roots with *ə*-vocalism in the root and root-final *-a*, e.g. *kərsa-* 'know', prt.ptc.3 *kärsau*, *kärsoṣ*. Participle types 1 and 2 cannot be predicted on the basis of the root type alone, but all verbs without root-final *-a* form these types, and for instance the reduplication vowel of type 2 is determined by the root vowel (i.e. mainly *ə* or *a*). Another example is the formation of the preterite stem of causatives, which follow the basic rule that if the root has *ə*-vocalism, it is strong, i.e. derived from the root, e.g. *kərs-* 'let know', prt. {śársa-}, whereas with *a*-vocalism in the root it is derived from the subjunctive stem, e.g. *karp-* 'let descend', prt. {kárpəṣṣa-}.

I denote the four root types with the symbols *ə*|Ø, *a*|Ø, *ə*|*a*, and *a*|*a*, respectively, i.e. for example "*ə*|Ø-roots" or "roots of the *ə*|*a*-type". When speaking of Tocharian A only, I will use the symbols *ä*|Ø, *ā*|Ø, *ä*|*ā*, and *ā*|*ā*:

root types	without root-final *a*		with root-final *a*	
with *ə*-vocalism in the root	TA *ä*|Ø	TB *ə*|Ø	TA *ä*|*ā*	TB *ə*|*a*
with *a*-vocalism in the root	TA *ā*|Ø	TB *a*|Ø	TA *ā*|*ā*	TB *a*|*a*

To denote larger groups of roots, for instance all roots with root-final *a* or all roots with *a*-vocalism in the root, the cover symbol "x" will be used, e.g. "*x*|*a*-roots" and "*a*|*x*-roots", respectively.

If the final *ə* or *ä* – which may but need not be there – is not counted as a separate syllable, most Tocharian *x*|Ø-roots are monosyllabic, e.g. TA *yām-*, TB *yam-* 'do', whereas most *x*|*a*-roots are disyllabic, e.g. TA *kräsā-*, TB *kərsa-* 'know'.[21]

[20] See in general Hackstein (1995: 16).

[21] Admittedly, this has the disadvantage that the accent of some preterite (and a couple of subjunctive) stems is not placed on the stem itself, but on an intervening shwa, cf {prek-ə́}, prt. of *prək-* 'ask', or {yam-ə́}, sbj. of *yam-* 'do'. With a final shwa, the accent could be noted as {prekə́-} and {yamə́-}, respectively.

There is a small number of disyllabic roots ending in a consonant, principally roots that are built on a present formation such as TA *wäynās-*, TB *wəynask-* 'honour'. Only in Tocharian B do we find a small set of trisyllabic *x*|*a*-roots (including the root-final *a*), e.g. *sanapa-* 'anoint'.

2.4.1 *X*|Ø-ROOTS

A verb has an *x*|Ø-root or a root without root-final *a* if it has at least one stem without root-final *a* where it cannot be lost by regular morphophonological rule. If a verb with an *x*|Ø-root has a stem ending in *a*, this *a* must be analysed as a suffix and the stem itself is secondary. Thus, TA *yām-* 'do' and TB *yam-* 'id' have an *x*|Ø-root because they never show a stem variant TA *yāmā-*** or TB *yama-***. At the same time, the preterite stem of 'say', TA *weña-*, TB *weña-*, does not suffice to posit an *x*|*a*-root *weña-* because a shorter root variant *weñ-* is found in the subjunctive TA *weñ*$^{ä}/_{a}$-, TB *weñ*$^{ə}/_{e}$-: the preterite is secondarily derived with the suffix *a* and the root is of the *x*|Ø-type.

2.4.2 *X*|*A*-ROOTS

A verb has an *x*|*a*-root or a root with root-final *a* if all its stems end in root-final *a*. In some cases this analysis is straightforward because the *a* is clearly visible in all stems, but in many cases there is one stem that is in need of an explanation, mostly the present stem. The most important formations that need special comment are the *e*-, *o*-, and *na*-presents of Tocharian B, and the *a*-and *nā*-presents of Tocharian A.

Tocharian B *e*-presents are formed to roots that have root-final *a* in all stems, but this *a* is not visible in the *e*-presents themselves, for example prs. *wəyke-* 'perish' vs prt. and sbj. *wəyka-*. The problem with the *o*-presents is completely parallel, for example prs. *korpo-* 'descend' vs prt. and sbj. *karpa-*. In the case of the *o*-presents, a morphophonological rule *ao* > *o* could account for the lack of the root-final *a* in the present, but a similar rule can hardly be motivated for the *e*-presents, although *o*-present verbs are otherwise exactly parallel to *e*-present verbs. The reason to take *e*-present roots to be of the *x*|*a*-type as well is the parallelism to the *o*-presents.

In Tocharian A, *a*-presents are also paired with other stems with root-final *ā*, for example prs. *wäyka-* 'perish' vs prt. and sbj. *wäykā-*. Although there are no parallels for a change *ā.a* > *a*, *a*-present roots are analysed as *x*|*ā*-roots because this makes the analysis of the other stems much easier.

Tocharian B *na-* and Tocharian A *nā*-presents are easier to account for because in this case we could say that *na* or *nā* is not a suffix, but the root-final *a* or *ā* preceded by an infix ‹n›. Thus, compared to the prt. and sbj. stems TB *tərka-*, TA *tärkā-* 'let go', the present stems TB *tərkna-*, TA *tärknā-* 'let go' contain an infix *-n-*, not a suffix *-na-* or *-nā-*; the notation of the infixed stems is e.g. TB *tərk‹n›a-*, TA *tärk‹n›ā-*.

2.4.3 *ə|X*-ROOTS

ə|x-roots form the heart of the Tocharian verbal system because they can bear morphological distinctions that *a|x*-roots cannot, but, the other way round, they have all the possibilities of *a|x*-roots, too. The morphological distinctions exclusive for *ə|x*-roots are gradation (see 2.5.2, p 56) and initial palatalisation (see 2.5.4, p 64), and in that order, because some roots have gradation, but no initial palatalisation, whereas the opposite is exceedingly rare. Because gradation in *ə|x*-roots is rarely lacking where it would be expected according to a certain morphological pattern, the term "gradable" would in many cases be suitable.

Since some morphological categories are dependent on gradation or (less frequently) palatalisation, *a|x*-roots may be excluded from these categories (cf the example of the causative preterites above in the introduction to 2.4, p 44).

A special, but marginal, category is formed by roots with stable *e*- or *o*-vocalism. In most respects, they behave like *a|x*-roots, since they have no gradation. In some cases, however, they go together with the *ə|x*-roots, especially with reduplication or weakening of the suffix vowel.

2.4.4 *A|X*-ROOTS

a|x-roots, or roots with a stable root vowel *a*, are clearly secondary to *ə|x*-roots within the Tocharian verbal system, since they are not liable to gradation (see 2.5.2, p 56) and palatalisation (see 2.5.4, p 64), both essential morphological distinctions. As a consequence, certain morphological categories are not "open" to *a|x*-roots. In addition, *a|x*-roots are more prone to weakening processes than *ə|x*-roots, especially in Tocharian A, because they may have a very heavy structure; for instance, TA *kākmu* 'carried' is all that rests from underlying {kā-kāmā-w}.

Especially in *x|a*-roots, a kind of secondary *a|a*-roots may arise, i.e. roots that are in fact *ə|a*-roots but have certain stems with stable *a*-vocalism, generally in the subjunctive and preterite stems. These roots will be treated as *ə|a*-roots and the *a*-vocalism of the other stems will be described as a morphological pattern.

On roots with a stable root vowel *e* or *o*, cf 2.4.3 (p 46).

2.4.5 *VC*-ROOTS AND *CV*-ROOTS

Most Tocharian roots have the structure *C(C)VC(C)* or *C(C)VC(C)a*: only rarely do we find roots with the structure *C(C)V*-, and the ones we find all have something irregular (cf Sieg, Siegling and Schulze 1931: 380). Examples are TA *y*-, TB *y*- 'go', TB *kwa*- 'call', TA *knā*- 'know' (next to *kñas*-), *tā*- 'put' (next to *täs*-), *yā*- 'go', *Ĺā*- 'wipe off', *wā*- 'lead' (suppletive to *āk*-).[22] Tocharian A roots like *e*- 'give' and *o*- 'hit; start'

[22] On the alleged verb *plā*-, see the discussion in Peyrot (forth.d).

are better set up as *āy-* and *āw-* because of e.g. 1sg.opt. *āyim* 'may I give' or 1sg.prt. *āwu* 'I hit'. The Tocharian B copula root *sk-* consists of two consonants only.

There are also some roots with a vowel onset. These roots mostly behave like normal roots, but they resemble *a|x*-roots in having no gradation, and, of course, no initial palatalisation. In addition, they cannot be reduplicated.

2.4.6 WEAK CONSONANT ROOTS IN TOCHARIAN A

In Tocharian A there are some "weak consonant" roots that display irregular patterns, mostly with an alternation *w* ~ Ø. In most cases, the *w* is original, so that the stems where it is not found are irregular, but sometimes the *w* is secondary.

Although it is not evident synchronically, the *w* is original in vn *mewlune* vs 3sg.prs. *meṣ* 'trembles', 3pl. *meyeñc* – there is no reason why it should have been inserted in the subjunctive stem (incidentally, this is corroborated by the Tocharian B cognate *məyw-*). Likewise, it is unlikely that the *w* of 3pl.prs. *klawantr* 'they fall' vs 3pl.prt. *klār* is epenthetic (cf Winter 1965b: 203-205), nor that of 3sg.prs. *piwāṣ* vs prt.ptc. *pāpeyu*.

In at least two instances *w* is lost after the imperative prefix *p-*, compare *pleṣār* 'work!' with 3sg.prs.-sbj. *wleṣträ* and *peṃ* 'say!', pl. *penäs* with 3sg.sbj. *weñäṣ*.

The *w* is certainly secondary in 3sg.opt. *tāwiṣ* 'may he put' in view of the 3sg.sbj. *tāṣ*: normally the optative is formed from the subjunctive with the suffix *äy* which would in the case of *tāṣ* have yielded a phonologically impossible ***tāiṣ* or an overly short ***tiṣ*, so that *w* is most probably a hiatus-filler (cf e.g. Winter 1962: 32-33).

2.5 MORPHOLOGICAL DISTINCTIONS

In this section, an inventory of the morphological distinctions is given, which can be understood as an equivalent of "Die grammatischen Bildungsmittel" of Sieg, Siegling and Schulze (1931: 325-350). However, the aim is not to describe the whole verbal system, but only the distinctions important to the stem patterns; for the personal endings, the derived infinite forms and the imperfect and optative suffixes, see above (2.2, p 26, and 2.3, p 39, respectively).

2.5.1 AFFIXATION

The most salient morphological distinctions are made by means of affixes. In Tocharian, affixation regularly proceeds by means of suffixes, but there is one prefix, too, as well as one infix.

The only prefix both languages have is the imperative prefix: TA {p-}, TB {p-}. In Tocharian A, the prefix is regular in all imperatives, except 'see', which is a suppletive verb with the roots *läkā-* and *pälkā-*. The regular imperative would have been {p-pälkā-}, while we find {pälkā-}; possibly, *pälkā-* is to be analysed as {p-läkā-} instead of {Ø-pälkā-} (i.e., formed *with* the prefix *p-*, but from the present root *läkā-*

rather than the subjunctive root *pälkā-*). In two cases, the prefix has obscured the root, as the initial consonant of the root has disappeared: sg. *peṃ* {p-wen-Ø}, pl. *penäs* {p-wen-äs} to *tränk-* 'speak' and *pleṣār* {p-wlāyṣ-ār} to *wlāys-*[23] 'carry out' (see also 2.4.6, p 47). All other alternations of and with the prefix are phonological (i.e. *p-* ~ *pä-* ~ *pu-*).

In Tocharian B, the situation is a bit more complicated. First of all, the prefix is never found before *p-*, i.e. the imperative of *ləka-* 'see', {Ø-p$^{\text{a}}$/$_{\text{ə}}$lka-}, is regular. Second, the prefix is lost before obstruents in later stages, some examples being attested in classical texts already (Peyrot 2008a: 62).

If the *p*-prefix is there, it unambiguously identifies imperative forms. If it is lacking for some reason or other, the imperatives may still be recognised through the endings and the shape of the stem, but in some cases they merge with other forms. In Tocharian B, the most frequent merger is that of the 3sg.prt. and the sg.ipv., e.g. *tāka* '(s)he was; be!' (with late loss of *p-* in the cluster *pt-* in the imperative form). In Tocharian A, the only merger is that of the 2pl.prt. and the pl.ipv.mid. of 'see': *pälkāc* 'you (pl.) have seen; look (pl.)!' (Sieg, Siegling and Schulze 1931: 346).

There is one infix, *-n-*, which is found in both languages. It exclusively forms present stems. Because of its prominent role in stem derivation, the nasal infix is discussed with the suffixes below, noted as "‹n›".

A more structural form of affixation is suffixation. Suffixes are much more frequent than prefixes in Tocharian; in the noun, for instance, it is the principal way of derivation. In the verb, too, suffixes are frequent. Below, a scheme of the attested suffixes – including the nasal infix ‹n› – is given:

Tocharian A

<table>
<tr><th>present</th><th>subjunctive</th><th>preterite</th></tr>
<tr><td>{$^{\text{ṣä}}/_{\text{sa}}$}
{nā$^{\text{ṣä}}/_{\text{sa}}$}
{nä$^{\text{ṣä}}/_{\text{sa}}$}</td><td>{nāk}
{ñ$^{\text{ä}}/_{\text{a}}$}
{ā$^{\text{ṣä}}/_{\text{sa}}$}
{iññ$^{\text{ä}}/_{\text{a}}$}</td><td rowspan="2">{ā}
{$^{\text{Ø}}/_{\text{sā}}$}</td></tr>
<tr><td colspan="2">{$^{\text{'ä}}/_{\text{a}}$}
{a}
{‹n›}</td></tr>
</table>

Tocharian B

<table>
<tr><th>present</th><th>subjunctive</th><th>preterite</th></tr>
<tr><td rowspan="2">{e}
{o}
{$^{\text{ṣə}}/_{\text{se}}$}
{$^{\text{ṣṣə}}/_{\text{ske}}$}
({na$^{\text{ṣṣə}}/_{\text{ske}}$})
{nə$^{\text{ṣṣə}}/_{\text{ske}}$}
{ññ$^{\text{ə}}/_{\text{e}}$}</td><td>{$^{\text{Ø}}/_{\text{e}}$}
{'əy}</td><td>{$^{\text{Ø}}/_{\text{sa}}$}</td></tr>
<tr><td colspan="2">{a}</td></tr>
<tr><td colspan="2">{‹n›}</td><td></td></tr>
<tr><td colspan="3">{$^{\text{'ə}}/_{\text{e}}$}</td></tr>
</table>

The suffixes will be presented in some more detail below, arranged by their functions (for convenience, the class numbers of Krause and Thomas' 1960 *Elementarbuch* are indicated as well, but they will not be used systematically throughout this work). In my analysis, a suffix is not the stem minus the root, i.e. the elements that derive a

[23] The vocalism *āy* instead of *e* is needed for the preterite participle *wāwleṣu*.

stem from the root, but an element that distinguishes one stem from another: in Tocharian, stems are not always formed from the root, but also from one another. Thus, for example, there is no preterite suffix {ṣṣa} in Tocharian B because it does not distinguish the preterite: in fact, the element *ṣṣ* is evidently the same as in the present suffix {$^{ṣṣə}/_{ske}$},[24] to which the preterite marker {a} is added.

In both languages, some stems have no suffix. In the above list, these are not represented exactly because there is no suffix. Unsuffixed stems are found in TA and TB presents, subjunctives, and preterites.

A complicating factor in examining the suffix inventory of the Tocharian verb is that roots may have a final TA *ā*, TB *a*, which also occurs as a suffix in exactly the same shape. In my analysis, the *ā* or *a* is a suffix when it is not found in all stems (for a discussion of different root types, cf section 2.4, p 44).

The suffixes of Tocharian A are:

{-$^{ṣä}/_{sa}$-} present (TEB prs. class 8)

This is by far the most frequent present suffix. The same element is found in the combined suffixes {-nā$^{ṣä}/_{sa}$-} and {-nä$^{ṣä}/_{sa}$-}, while {-$^{ṣä}/_{sa}$-} seems to be composed of *s* and {-$^{'ä}/_{a}$-} itself. It is also frequent in subjunctives, but it does *not* distinguish these subjunctives from another stem, since the present has the same {-$^{ṣä}/_{sa}$-} suffix, while the subjunctive is marked by an additional {-ā-} before it: e.g. sbj. {läm-ā-$^{ṣä}/_{sa}$-} vs prs. {läm-$^{ṣä}/_{sa}$-} of *läm-* 'place' (the combination *ā*$^{ṣä}/_{sa}$ is analysed as a separate suffix, see further below). The suffix may conflate with the 3sg.prs. ending, cf *eṣ* prs. {āy-ṣä-ṣ} '(s)he gives' or sbj. {āy-ṣ} '(s)he will give', but before a suffixed pronoun the double *ṣṣ* is preserved: *eṣ-äṃ* {āy-ṣ-n} '(s)he will give it to him/ her' vs *eṣṣ-äṃ* {āy-ṣä-ṣ-n} '(s)he gives [it] to him/ her'.

{-nā$^{ṣä}/_{sa}$-} present (TEB prs. class 10)

This present suffix is very rare. It is obviously composed of *-nā-* (in turn from ‹n› before a root-final *-ā*) and *-*$^{ṣä}/_{sa}$*-*, but in two instances there is no bare *nā*-stem next to it: prs. {päknā$^{ṣä}/_{sa}$-} of 'intend' and prs. {yäknā$^{ṣä}/_{sa}$-} of 'be careless' next to sbj. {päknāk-} and {yäknāk-}, respectively. Since the subjunctive stem does not show *nā* only, but an extended *nā-k*, it is difficult to analyse the present as {-nā-$^{ṣä}/_{sa}$-}. If the subjunctive received another explanation, the presents could be analysed as "normal" *$^{ṣä}/_{sa}$*-presents. The combination -nā$^{ṣä}/_{sa}$- is certainly composed of *-nā-* and *-*$^{ṣä}/_{sa}$*-* in prs. {yomnā$^{ṣä}/_{sa}$-} of 'reach' because the sbj. is {yomnā-}.

[24] The preterite is actually derived from the subjunctive; the subjunctive is identical to the present because it is zero-derived.

{-näˢä/ₛₐ-} present (TEB prs. class 10)

This present suffix seems to contain a {-ˢä/ₛₐ-} suffix, too; however, since the first element *n* does not occur independently as a suffix, there is no doubt about the status of this suffix. In one instance, the *n* is assimilated to a preceding *l*: *wälläˢä/ₛₐ-*, i.e. {wälläˢä/ₛₐ-} or {wäl-näˢä/ₛₐ-} of 'die'. The resulting geminate *ll* is sometimes simplified to a single *l*, always together with syncope of the first *ä*, so that we get {wläˢä/ₛₐ-}. For a discussion of the morphological status of geminates, cf 2.5.8 (p 90).

{-ʾä/ₐ-} present and subjunctive (TEB prs. and sbj. class 2)

This suffix functions as a present and subjunctive suffix; however, in the first function its distribution is limited, since the three certain cases are all from suppletive verbs. The *ʾä/ₐ*-suffix may be difficult to recognise because some forms of the paradigm may become indistinguishable from other classes. On the one hand, the *ä*-variant forms may merge with root stems if the root-final is not palatalisable; on the other hand, the *a*-variant forms may merge with forms with an invariable *a*-suffix, or the *a*-vowel may be syncopated. Clear indications for the *ʾä/ₐ*-suffix are the alternation of palatalised and unpalatalised forms and the alternation of *ä*- and *a*-variants.

{-a-} present and subjunctive (TEB prs. and sbj. class 3)

The invariable *a*-suffix is not to be confused with the alternating *ʾä/ₐ*-suffix discussed above. The *a*-suffix is attested in present and subjunctive function, but it is much more frequent in the former. In both functions, it is exclusively middle. The *a*-suffix may merge formally with the *ʾä/ₐ*-suffix (see above) or with the *ā*-suffix, when the latter is reduced to *a*. Only in relatively few cases does a merger of the *a*- and *ā*-suffixes lead to a complete merger of the stems, however: often there is still a difference in the vowel grade of the root. In finite forms, the *a*-suffix can be excluded if the forms are active, but middle forms are no sufficient positive indication for the *a*-suffix, since *ʾä/ₐ*- and *ā*-presents and subjunctives may also be middle. A complication with this suffix in subjunctive function is that there is one active form that shows *ä* instead of *a*: 2sg.sbj. *nakät*. On the basis of this form alone, we should actually set up the subjunctive as {-ä/ₐ-} and the present suffix as {-a-}; the question is whether this one form is sufficient proof to change the entire analysis.

{‹n›} prs. and sbj. (TEB prs. and sbj. class 6, prs. class 7)

The *n*-infix has two variants: in most cases, it is infixed before a root-final *-ā*, which yields a sequence *nā* (traditionally class 6), but in a small subgroup of verbs with roots ending in a consonant cluster with final *-k* it is infixed before the *-k*, which yields a sequence *ṅkā* (traditionally class 7). The *nā*-variant of the infix principally forms presents, but there is one certain subjunctive attested, too: {yomnā-} of 'reach'. Two other verbs look like *nā*-subjunctives, but they have an unexplained *k*-extension

(see at {-nāk-} below). After strong root vowels (*a*, *ā*, *e*, *o*), {-nā-} is reduced to *na* (the only exception being {yomnā-}), and after strong vowels and before endings with the same vowels it is even further reduced to *n(ä)*, e.g. *skenmāṃ*, prs.ptc. of 'try' {skāy-nā-mān} (see 2.5.2, p 56). The *ṅkā*-variant of the infix forms only presents, and because infixing yields an extra *ä*-syllabe, the root-final *ā* is never weakened, e.g. *kātkā-* 'rise' has a present stem {kāt‹n›kā-} that is always trisyllabic *kātäṅkā-*.

{-ññ$^{ä}/_{a}$-} present and subjunctive (TEB prs. and sbj. class 12)

This suffix certainly forms subjunctives, but whether it also forms presents is not clear: there are not enough forms attested. The geminate *ññ* may be reduced to simple *ñ* before consonants, and before *t*, which is quite frequent in the endings, it is reduced to *n*. If *ññ$^{ä}/_{a}$* is preceded by *ä*, this *ä* is always coloured to *i*, i.e. the most frequent surface form of the suffix is *iññ$^{ä}/_{a}$-*.

{-nāk-} subjunctive (TEB sbj. class 6)

This suffix is attested only twice, i.e. in two verbs one time each, and it is isolated in the system. It is further striking that no subjunctive forms are attested, but only two optative forms. In view of the *nā*-sbj. {yomnā-}, which is otherwise partly parallel, we would rather expect a subjunctive stem in {-nā-} as well, to which the optative would probably be *-ni-*; possibly, the complex *-nāśśi-* or *-nāśi-* contains a hiatus-filling *ś* (or *śś*). However, *ś* is not a normal hiatus-filler and therefore we can only analyse the complex as containing a subjunctive suffix {-nāk-}.

{-ñ$^{ä}/_{a}$-} subjunctive (TEB sbj. class 7)

This subjunctive suffix is rather frequent; unlike the *ññ$^{ä}/_{a}$*-suffix, it is not normally reduced to *n* before *t*. In some forms, e.g. *riñmār* 'I will abandon', the *a*-vowel is lost although the normal rules for vowel weakening (see 2.5.2, p 56) do not apply.

{-ā$^{ṣä}/_{sa}$-} subjunctive (TEB sbj. class 8)

This suffix exclusively forms subjunctives and it is always found next to $^{ṣä}/_{sa}$-presents. It is clearly composed of *ā* and $^{ṣä}/_{sa}$, but it is not attractive to analyse it that way because *ā* would have to be an infix (see also below).

{-ā-} subjunctive and preterite (TEB prs. and sbj. class 5)

The problem with this subjunctive and preterite suffix is that there are also roots ending in *ā*; however, there are very clear cases of an *ā*-suffix, like in prs. {sälp-} of 'glow', sbj. {sälpā-}. Whether verbs with an *a*-present are to be analysed as having a root in *ā* is unclear: these verbs behave like roots in *ā* in all other stems, but it is uncertain whether the addition of the present suffix *a* to a root-final *ā* would yield *a*. Nevertheless, I will analyse verbs with *a*-presents as having a root-final *ā*. The *ā*-suffix may be reduced to *a* after strong root vowels (*a*, *ā*, *e*, *o*); if it is in addition

followed by an ending with a strong vowel (including the vn suffix *-lune*), it is reduced to *ä* or Ø. There is one suffix that is clearly composed of *ā* and $^{ṣä}/_{sa}$, the subjunctive suffix {-ā$^{ṣä}/_{sa}$-}. Since that suffix is found next to $^{ṣä}/_{sa}$-presents, an alternative analysis could theoretically take the *ā* of the subjunctive suffix as an infix, which would be unique within the system (see also above).

{-$^{Ø}/_{sā}$-} preterite (TEB prt. class 3)

This preterite and imperative suffix is alternating. In the preterite, the zero forms are found in the active except the 3sg., and the *sā*-forms are found in the middle and in the 3sg.act. In the imperative, decisive forms are lacking, but the assumption that the sg.act. is a zero form, whereas the other forms are *sā*-forms – parallel to the situation in Tocharian B – is not contradicted by the attestations. Next to preterites with the $^{Ø}/_{sā}$-suffix, there is also a preterite that is similar, but lacks the suffix *sā*; I will call the latter preterite "*sā*-less preterite".

The suffixes of Tocharian B are:

{-e-} present (TEB prs. class 3)

This present suffix is exclusively middle; it may be confused with *e*-forms of the alternating $^{ə}/_{e}$-suffix. The *e*-suffix is in complementary distribution with the *o*-suffix: the former is found in roots with *ə*-vocalism (including *əy*, *əw*) and some roots with *e*-vocalism, whereas the latter is found in roots with *a*-vocalism (alternating with *o*-vocalism before the *o*-suffix).

{-o-} present (TEB prs. class 4)

Like the *e*-present, this present suffix is exclusively middle. It is in complementary distribution with the *e*-present: the latter occurs in roots with *ə*- and *e*-vocalism, whereas *o*-presents are found in roots with *a*-vocalism (including the diphthongs /ay/ <ai> and /aw/ <au>). Through mutation, the root-*a* of *o*-presents changes to *o* in non-diphthongal roots; *ai* and *au* remain unchanged. In most cases, *o*-presents can be identified easily, but there are a few instances where they merge with the imperfect-optative. In the imperfect-optative, the 3pl. of *na*-present stems and *a*-subjunctive stems is sometimes *-oṃ* instead of *-oyeṃ*, and sporadically we find the same phenomenon in middle forms, i.e. *-onträ* instead of *-oyenträ* (Peyrot 2008a: 142-144). Since the *o*-present occurs in roots with *a*-vocalism only, forms like *wärponträ* B284b5 are unambiguously optative: the root has *ə*-vocalism. However, a form like *laikontär-ñ* B241b6 could theoretically be ambiguous because the root has *a*-vocalism.

{-ᵴᵊ/ₛₑ-} present (TEB prs. class 8)

This alternating present suffix is usually easy to identify. The *ə*-variant of the *ᵴᵴᵊ/ₛₖₑ*-suffix may be reduced to *ṣ*, but since it has a variant *s* before *t*, *ᵴᵊ/ₛₑ*-forms are still distinct in that context: *ᵴᵊ/ₛₑ*-presents have *ṣt* whereas *ᵴᵴᵊ/ₛₖₑ*-presents or subjunctives have *st*.

{-naᵴᵴᵊ/ₛₖₑ-} present (TEB prs. class 10)

This present suffix is obviously composed of *-na-* and *-ᵴᵴᵊ/ₛₖₑ-*, and most of the instances of the element *-naᵴᵴᵊ/ₛₖₑ-* can be explained as *ᵴᵴᵊ/ₛₖₑ*-presents derived from *na*-subjunctives, e.g. sbj. {pəkná-} of 'intend' vs prs. {pəknáᵴᵴᵊ/ₛₖₑ-}. However, there are also instances of *naᵴᵴᵊ/ₛₖₑ*-presents to *a*-subjunctives, so that these cannot be analysed as *ᵴᵴᵊ/ₛₖₑ*-presents. Since these *naᵴᵴᵊ/ₛₖₑ*-presents are only found with roots ending in a resonant that is assimilated to a geminate, an alternative analysis could take the gemination as a morphological marker instead of the *n*: prs. {kəllᵃᵴᵴᵊ/ₛₖₑ-} of 'bring' next to sbj. {kᵃ́/ₔla-} could be analysed as {kəllá-ᵴᵴᵊ/ₛₖₑ-} instead of {kəl-náᵴᵴᵊ/ₛₖₑ-}. If the geminate is analysed as a morphological marker, or perhaps just a morphological irregularity, all remaining instances of *-naᵴᵴᵊ/ₛₖₑ-* can be explained as composed of {-na-} and {-ᵴᵴᵊ/ₛₖₑ-}, and there would be no independent suffix {-naᵴᵴᵊ/ₛₖₑ-} (on gemination, see 2.5.8, p 90).

{‹n›} prs. and sbj. (TEB prs. and sbj. class 6, prs. class 7)

The *n*-infix has two variants: in most cases, it is infixed before a root-final *-a*, which yields a sequence *na* (traditionally class 6), but in a small subgroup of verbs in *-k* is it is infixed before the *k*, which yields a sequence *ṅk* (traditionally class 7).

The *na*-variant of the infix principally forms presents, but it occurs a couple of times as a subjunctive suffix, too. In three of its occurrences, it obscures an element of the root: in {malla-} to *məl-* 'oppress' it causes gemination of the *l*, just as in {kəllá-} to *kəlpa-* 'obtain', where the *p* is lost in addition, and in {kərná-} to *kərya-* 'buy' it does not cause gemination, but the *y* is lost. In two other cases, however, there are no root changes and the *n* is clearly a subjunctive marker: {pək‹n›á-} to *pəka-* 'intend' and {yək‹n›á-} to *yəka-* 'be careless'. There are three presents where the *n*-element has caused gemination: {təllá-} of 'lift', {pəllá-} of *pəla-* 'praise' and {skərrá-} of *skəra-* 'scold'. Whether these are to be analysed as containing an *n*-infix or as having morphological gemination is discussed in 2.5.8 (p 90).

The *ṅk*-variant of the infix forms only presents. It is mostly found after clusters with final *-k*, such as *kətka-* 'cross', prs. {kət‹n›k-}, i.e. *kättaṅkä-*, but it is also attested before single *-k* in *pəyka-* 'write', prs. {pəy‹n›k-}, i.e. *piṅkä-*, and before *-t* in *kəta-* 'strew', prs. {kə‹n›ta-}. Although it is evident that the *ṅk*-variant of the nasal infix is an infix, its behaviour is difficult to describe because the *ṅk*-forms have no root-final *-a*. Since all other stems of the *ṅk*-presents do have a root-final *-a* and they are otherwise completely parallel to *na*-presents, it is preferable to take the absence of the *a* as a special feature of the *ṅk*-presents. *ṅk*-presents are predominantly found

with *tk*-roots, which regularly show gemination of the *t*, as in the example mentioned above: *kətka-* 'cross', prs. *kättaṅkä-* (see 2.5.8, p 90).

The distribution of the *na*-variant and the *ṅk*-variant is not perfect: except for *pəyka-* 'write', all *ṅk*-presents either have *na*-present forms beside them, or the number of attested forms is so small that *na*-variants are probably not attested by chance. In addition, there are also well-attested verbs with roots in *-k*, including roots in *k*-clusters, that form only *na*-presents, such as *pləska-* 'think', prs. {pləsk‹n›a-}. On this distribution and its historical explanation, see 4.6.4 (p 435).

{-nəˢˢˢᵃ/ske-} present (TEB prs. class 10)

This present suffix is not frequent, but its existence is certain: it occurs at least in three different well-attested verbs. However, in all three cases the root undergoes changes because of the suffix: in {kənmáˢˢˢᵃ/ske-} to *kəm-* 'come' and {tənmáˢˢˢᵃ/ske-} to *təm-* 'be born', metathesis of *mn* to *nm* has taken place; in {yənmáˢˢˢᵃ/ske-} to *yəp-* 'enter', *p* was first assimilated to *m*, after which metathesis took place.

Yet a fourth possible instance, {lənnáˢˢˢᵃ/ske-} to *lət-* 'go out', is a difficult case altogether. Since the basic root is *lət-*, it is tempting to connect the double *nn* found in the subjunctive {lənn-} and the present {lənnáˢˢˢᵃ/ske-} with the *nəˢˢˢᵃ/ske-*suffix. However, strictly synchronically, the present is derived from the subjunctive root *lənn-* with the present suffix {-ˢˢˢᵃ/ske-}; the relationship to the root *lət-* found in e.g. the preterite is simply irregular.

There is one possible case of a *nəˢˢˢᵃ/ske-*present-subjunctive: {tánməˢˢˢᵃ/ske-}, caus. of *təm-* 'be born'. However, on the evidence of the prt.ptc. {tetánməṣṣəw}, the *n* has spread throughout the causative verb, so that the root must be set up as *tənm-* 'beget', which makes {tánməˢˢˢᵃ/ske-} rather a *ˢˢˢᵃ/ske-*present.

{-ˢˢˢᵃ/ske-} present (TEB prs. and sbj. class 9)

This present suffix is certainly the most frequent suffix with this function. It is found in other stems, too, but it never distinguishes those stems; the *ṣṣa-*preterite, for instance, is clearly built on the present in {-ˢˢˢᵃ/ske-} by means of the preterite suffix {-a-}.[25] The suffix undergoes a remarkable change before *t*: instead of the expected *ṣt* from *ṣṣə-t* (after syncope; with degemination of *ṣṣ* to *ṣ* before a consonant), we find *st*. This peculiarity enables us to distinguish *ˢˢˢᵃ/ske-*forms with *st* from *ˢᵃ/se-*forms with *ṣt*.

{-ññᵊ/e-} present (TEB prs. and sbj. class 12)

This alternating suffix forms presents. The same element is sometimes found in the preterite, but these preterites are clearly built on the corresponding present, enlarged

[25] Below, I will argue that the preterite is in fact derived from the subjunctive, which was identical to the present because it was zero-derived from it.

with the preterite suffix {-a-} (cf above about {-$^{§§ə}/_{ske}$-}).[25] The *ññ$^{ə}/_{e}$*-suffix may sometimes be difficult to recognise because it disappears almost completely in the 3sg., where {-ññə-n} combines to simple /-n/. However, the obscured suffix of these forms is shown by the accent (if the latter can be determined): 3sg. *käskaṃ* '(s)he strews' must have the structure {kəskáññə-n} because otherwise it would not be possible to explain the final accent /kəskán/. In the middle, the 3sg. looks exactly like a 3pl., and if the form is isolated (and the number is not known), there is nothing to decide the matter; without context, *kwipenträ* can only be identified as a *ññ$^{ə}/_{e}$*-present instead of an *e*- or $^{ə}/_{e}$-present because of the 3pl.mid. *kwipeññenträ* beside it.

{-$^{ə}/_{e}$-} prs., sbj. and prt. (TEB prs. & sbj. class 2, prt. class 6)

This alternating suffix shows most functional variety of all suffixes: it may form presents, subjunctives and preterites. It is rather frequent as present and subjunctive, but there are only three verbs with an $^{ə}/_{e}$-preterite. These preterites further stand out in having present endings, which makes them unique within the system.

{-$^{Ø}/_{e}$-} subjunctive (TEB sbj. class 3)

The $^{Ø}/_{e}$-suffix is very similar to the $^{ə}/_{e}$-suffix. However, the distribution of the Ø- and *e*-variants is totally different: in $^{ə}/_{e}$-stems, *ə*-variants are found in the 2sg., 3sg. and 2pl. in both active and middle, but in $^{Ø}/_{e}$-stems, Ø-variants are found throughout the active and *e*-variants throughout the middle. There is a striking resemblance between the middle only present suffix {-e-} and the middle variant of the $^{Ø}/_{e}$-suffix; the only reason to keep them apart is the difference in function and the existence of active Ø-forms next to the middle *e*-subjunctives.

{-'əy-} subjunctive (TEB sbj. class 4)

This subjunctive suffix is formally almost identical to the imperfect-optative suffix; there is often no way to distinguish optative and subjunctive on formal grounds in this category. An exception is the 1sg., which is {-'əy-ew} in the subjunctive and {-'əy-m} in the optative.

{-a-} subjunctive and preterite (TEB sbj. class 5, prt. class 1)

The *a*-suffix is frequent as subjunctive and preterite suffix, but it is not attested in present function. The problem with the *a*-suffix is that there are also roots ending in *a*. In my analysis, the *a* belongs to the root when it is found in all stems, and it is a suffix when it is lacking in one stem or other (for details see 2.4.2, p 45).

{-$^{Ø}/_{sa}$-} preterite (TEB prt. class 3)

This preterite and imperative suffix has two variants: a zero or *ə*-variant and a *sa*-variant. The Ø-variant is found in the active of the preterite, except the 3sg., and in the active of the imperative, whereas the *sa*-variant is found in the 3sg.act. of the

preterite and the whole middle of preterite and imperative. On the accent pattern of the formations with this suffix, see 2.5.7 (p 85).

2.5.2 GRADATION

The gradation patterns of Tocharian A and B must be discussed separately because of the differences in their vowel systems and other points of divergence specific to gradation.

In Tocharian A, vowel weakening causes a kind of secondary suffix gradation, which will not be treated as such, since it is largely predictable (see Winter 1994b). As a rule, *ā* cannot be preceded by a strong vowel such as *a*, *ā*, *e*, *o*; it is automatically weakened to *a*. If one of the strong vowels *a*, *ā*, *e*, *o* is followed by a strong vowel two or three syllables further, the syllable directly following the first strong vowel syllable can only contain *ä*, *e* or *o*; a medial *a* or *ā* is weakened to *ä*. In practice, the first strong vowel syllable is mostly the first syllable of the word, and the weakened syllable is the second. Since vowel weakening is always progressive, the first syllable is never affected; it is only the vowel of medial syllables that may disappear or merge with others. Weakening may occur twice in the same word, i.e. a heavy sequence *ā_ā_ā_V* may be weakened to *ā_ä_ä_V* (this applies especially to preterite participles, see 2.9.1, p 146).

There is one phenomenon that is parallel to affection as it is found in Tocharian B. In Tocharian B, a suffix vowel *o* affects a preceding *a* to become *o*, too. In Tocharian A, a similar process takes place, but since the "affecting" vowel *a* is not in any way distinct from other suffix vowels *a*, the change of *ā* to *a* in the root can hardly be called affection in the synchronic sense. This "affection" will be analysed as a special type of gradation.

The basic gradation vowels of Tocharian A are *ä*, *a*, *ā*. However, the analysis of the Tocharian A gradation system is complicated by the fact that in roots with *i* and *u* the morphological equivalents of both *a* and *ā* are *e* and *o*. Whereas *i* and *u* can be analysed phonologically as *ä* followed by *y* and *w*, respectively, the analysis of *e* and *o* as *ay* and *aw* or *āy* and *āw* leads very far away from the graphic forms that are actually attested. However, as far as morphology is concerned, such analyses allow for a thorough simplification of the system, and therefore that analysis is adopted here (it has great advantages for the description of reduplication as well; see 2.5.6, p 81).

A minor complication is the alternation between *rä* and *är*, where *är*-spellings form a vast majority, even when full grade forms of the root have *ra* or *rā*. On the phonological level, *är* and *rä* are clearly not distinctive, and whether they are to be analysed as /är/, /rä/ or syllabic /ṛ/ is of no relevance to us; morphologically, *är* and *rä*-spellings will be treated alike, analysed as *är* next to full grades *ar* or *ār* and as *rä* next to full grades *ra* or *rā*. The different types of gradation vowels are represented in the scheme below:

root type	*ä*-grade			*a*-grade			*ā*-grade		
plain	<ä, Ø[26]>	/ä/	{ä}	<a>	/a/	{a}	<ā>	/ā/	{ā}
-y-	<i>	/äy/	{äy}	<e>	/e/	{ay}	<e>	/e/	{āy}
-w-	<u>	/äw/	{äw}	<o>	/o/	{aw}	<o>	/o/	{āw}
-är-	<är, rä>	/är/	{är}	<ar>	/ar/	{ar}	<ār>	/ār/	{ār}
-äl-	<äl, lä>	/äl/	{äl}	<al>	/al/	{al}	<āl>	/āl/	{āl}
-rä-	<är, rä>	/är/	{rä}	<ra>	/ra/	{ra}	<rā>	/rā/	{rā}
-lä-	<äl, lä>	/äl/	{lä}	<la>	/la/	{la}	<lā>	/lā/	{lā}

Gradation does not mark one morphological distinction in particular and it is only rarely the sole distinction between two forms; generally, gradation is co-distinctive. Gradation may distinguish or co-distinguish different forms of one stem, or one stem from another.

Gradation that distinguishes different forms of one stem is exclusively of the type *ä* : *a*, but the distribution of these grades differs.

In the *ä*|*ā*-root subjunctive, *a*-grade may distinguish the singular active forms from the other forms with *ä*-grade of the active and middle paradigms, for instance 2sg. *katkat* {katkā-t} (with weakening of root-final *ā* to *a* after *a*) of *kätkā-* 'cross' vs 2pl. *kätkāc* {kätkā-c}, or 3sg. *krasaṣ* {krasā-ṣ} of *kräsā-* 'know' vs 3pl. *kärseñc* {kräsā-ñc}, 3sg.mid. *kärsātär* {kräsā-tär}. In this type, gradation is never distinctive by itself because the endings sufficiently mark person and number. A similar pattern is found in the imperative of the same verbs, where the pattern is *a* in the singular active and *ä* in the plural active and the middle, cf sg. *päkras* {p-kras-Ø} of *kräsā-* 'know' vs pl. *pkärsäs* {p-kräs-äs}. The only middle form attested is sg.mid. *päklār* {p-käl-ār} of *kälā-* 'bring', but because of the parallels with the subjunctive pattern, the pl.mid. probably had *ä*-grade, too.

In the closely related *ä*|*ā*-root preterite, *a*-grade may distinguish the plural active forms from the other forms with *ä*-grade, whereas initial palatalisation may distinguish the singular active from the middle, for instance 3pl. *kalar* {kalā-r} of *kälā-* 'bring' vs 3sg. *śäl* {śälā-Ø} and 3sg.mid. *klāt* {kälā-t}, or 3pl. *mrasar* {mrasā-r} of *mräsā-* 'forget' vs 3sg. *märs* {mräsā-Ø}. Again, gradation is only co-distinctive, as the endings mark person and number.

In the *s*-preterite, gradation is also found, but only in two verbs; it is certainly a relic. It distinguishes the active paradigm with *a*-grade from the middle paradigm with *ä*-grade: cf of *täs-* 'put' 3sg. *casäs* {cas-sā-Ø}, 3pl. *casär* {cas-r} vs 2sg.mid. *tsāte* {täs-(s)ā-te}, 3pl.mid. *tsānt* {täs-(s)ā-nt} and of *präk-* 'ask' 3sg. *prakäs* {prak-sā-Ø} vs 3sg.mid. *präksāt* {präk-sā-t}. Obviously, the difference between active and middle is not only marked by gradation, but by the endings, too; in *täs-* 'put', it is additionally marked by initial palatalisation in the active.

[26] *ä* is regularly syncopated in open syllables.

Gradation is also found in suffixes: the gradation in the suffix {-ˀä/$_{a}$-} and its derivatives {-ṣä/$_{sa}$-, -näṣä/$_{sa}$-, -näṣä/$_{sa}$-, -ññä/$_{a}$-, -ñä/$_{a}$-} does not distinguish different stems, or active from middle paradigms, but co-distinguishes certain forms of a paradigm: the palatalising *ä*-variant is used with the 2nd and 3rd person singular and the 2nd person plural (all both active and middle), and the non-palatalising *a*-variant is used with the 1st person singular and the 1st and 3rd person plural (all both active and middle). This type of gradation may be blurred by vowel weakening because the *a* of the alternating suffixes is sometimes weakened to *ä*. In most alternating suffixes, the alternation is still recognisable after vowel weakening because the palatalisation is co-distinctive – the suffix may become e.g. -*ṣä*/*ṣä*-. However, for the suffixes {-ññä/$_{a}$-} and {-ñä/$_{a}$-}, and {-ˀä/$_{a}$-} after palatalisation-neutral consonants (see 2.5.4, p 64), this results in total merger of the alternating variants. A further complication with suffix gradation is that the gradation vowel is directly followed by the ending, and there are some endings that have enlarged variants, i.e. 1sg.prs. *-m* has a variant *-am*, which after palatalisation-neutral consonants makes the *ä*- or Ø-suffix indistinguishable from the *ˀä*/*a*-suffix in these forms (see 2.2.1, p 26).

In an indirect way, stem-internal gradation also distinguishes forms from each other that belong to different stems, namely when endings are identical: 3sg.prt. and sg.ipv. *-Ø*; 2sg.prs. and 3sg.prt. *-t*; 1pl.prs. and 1pl.prt. *-mäs*; 2pl.prs., 2pl.prt.mid. and pl.mid.ipv. *-c*; 2pl.prt. and pl.ipv. *-s*; 3pl.prt. *-r* and sg.mid.ipv. *-är* are indistinguishable after *ā*. Since many forms are lacking, the gradation distinctions will be shown with deduced forms of 'know' (the subjunctive forms have present endings, of course): 3sg.prt. *śärs* with *ä*-grade vs sg.ipv. *päkras* with *a*-grade; 2sg.sbj. *krasat* with *a*-grade vs 3sg.prt. *kärsät* with *ä*-grade; 1pl.sbj. *kärsämäs* with *ä*-grade vs 1pl.prt. *krasamäs* with *a*-grade; 2pl.prs. and 2pl.prt.mid. *kärsäc* and pl.mid.ipv. *pkärsäc* all with *ä*-grade; 2pl.prt. *krasas* with *a*-grade vs pl.ipv. *pkärsäs* with *ä*-grade (but the ipv. also has a different stem without final *ā*); 3pl.prt. *krasar* with *a*-grade vs sg.mid.ipv. *pkärsär* with *ä*-grade (morphologically, the difference is larger: {krasā-r} vs {p-kräs-är}). In other words, with the exception of the 2pl. in *-c*, all forms with identical (or nearly identical) endings are disambiguated by their root grade.

The remaining gradation types, and *ā*-gradation in general, only serve to distinguish stems from each other. Distinctive *a*-grade is found in a few infrequent present classes, in one frequent present class, and in one frequent preterite class.

There seem to be three present classes with *a*-grade alternating with *ä*-grade elsewhere, but in total only eight verbs are attested, and some of them only fragmentarily:

ˀä/*a*-present:	certain for {pañwä/$_{a}$-} of 'pull'; deduced for three other verbs: {waṣä/$_{sa}$-} of 'dress' (otherwise *ṣä*/*sa*-present), {maĺwä/$_{a}$-} of 'grind', {waĺä/$_{a}$-} of 'cover' (both otherwise *ä*-present);
a-present:	certain for {śama-} of 'grow', {śalpa-} of 'be redeemed'; deduced for {śalca-} of uncertain meaning;
ṣä/*sa*-present:	only attested for {prakṣä/$_{sa}$-} of 'ask'.

In the $^{\text{'ä}}/_{a}$-presents, the *a*-grade alternates with *ä*-grade or stem-internal gradation elsewhere, and this is the main argument to add the verbs for which an $^{\text{'ä}}/_{a}$-present is not totally certain: their gradation would otherwise be without parallel. In the *a*-presents, there is a whole category of verbs that also have *a*-grade in the root (see directly below); however, these differ in having stable *ā*-grade elsewhere, whereas the *śama*-type has *ä*-grade or stem-internal gradation elsewhere, and characteristic initial palatalisation. The combination of initial palatalisation and *a*-grade in the root is the reason why *śalca-* is added here. $^{\text{ś}}/_{sa}$-presents to roots with gradation normally have *ä*-grade, so that *prak*$^{\text{ś}}/_{sa}$- clearly stands out, cf its stem-internal gradation in the *s*-preterite, matched only by *täs-* (cf below).

Further, there is one present class with distinctive *a*-grade: *a*-presents with *ā*-grade elsewhere. In fact, gradation has a heavy functional load in this class, since it distinguishes the present from the subjunctive, categories that would otherwise be identical because the endings are the same. The *a*-grade in this class is different from the gradation of the classes discussed above because it alternates not with *ä*-grade, but only with *ā*-grade: a unique pattern in Tocharian A. Roots with *y-* or *w*-vocalism cannot carry this distinction, since e.g. {āw} and {aw} are both /o/; thus {pota-} of 'honour' may be both prs. and sbj. It would certainly be too artificial to analyse *pota-* as representing two different underlying stems, prs. {pawta-} and sbj. {pāwta-}, as there is simply no difference between the two.

In the preterite, the only class that has distinctive *a*-grade is the *s*-preterite. However, the *s*-preterite may also have stable *ä*-grade or another stable root vowel (for the two verbs with stem-internal gradation see above). If a verb has stable *ä*-grade in the *s*-preterite, all other stems have *ä*-grade, too; if a verb has *a*-grade in the *s*-preterite, the other stems always have *ä*-grade. To this distribution there is only one exception, in a verb which shows other irregularities as well: *kñas-* of 'know' has *a*-grade alternating with *ā*-grade in the other stems, e.g. prs. {knāna-}, and no stem with *ä*-grade. The grading *s*-preterites {cas-$^{\text{Ø}}/_{\text{sā}}$-, täs-(s)ā-} of 'put' and {prak-$^{\text{Ø}}/_{\text{sā}}$-, präk-sā-} of 'ask' have different grades in other stems, too: *präk-* has *a*-grade in the present and *täs-* has *ā*-grade elsewhere. *a*-grade in the *s*-preterite normally, but not always, goes together with initial palatalisation of non-palatal consonants (see 2.5.4, p 67).

The remaining gradation type is *ä* : *ā*. This type is found in three patterns: the strong imperfect, two minor present classes, and two irregular verbs. The strong imperfect is straightforward: it has *ā*-grade, is formed from a *ä*|*x*-root, and non-palatal initial consonants are palatalised (see 2.5.4, p 66). *ä*-grade presents are of at least two different types: one has root-final *ā*, the other has not; both have *ā*-grade elsewhere, cf:

ä|*ā*-type: sbj. and prt. *pālā-* vs prs. *pällā-* of *pälā-* 'praise';
sbj. and prt. *māntā-* vs prs. *mäntā-* of *mäntā-* 'disturb';
ä|Ø-type: sbj. and prt. *pekā-* vs prs. *päyk-* of *päyk-* 'write';
sbj. and prt. *lekā-* vs prs. *läyk-* of *läyk-* 'wash'.

The two irregular verbs that have *ā*-gradation have both been mentioned above: *knā-* 'know' and *täs-* 'put' have *a*-grade and *a* : *ä*-gradation in the *s*-preterite, respectively, and *ā*-grade elsewhere.

To sum up the most important characteristics of Tocharian A root gradation:

ä : *a*: the most frequent. *a*-grade distinguishes the active singular from the active plural and the middle in suffixless subjunctives; the active plural from the active singular and the middle in the corresponding preterites; and some *s*-preterites and three small present classes from other stems;

ā : *a*: is found in one category, where *a*-grade distinguishes *x*|*ā*-root presents from the other stems that have *ā*-grade;

ä : *ā*: not very common. *ā*-grade is found in the strong imperfect, and in some verbs it distinguishes all other stems from the present stem.

In Tocharian B, the types of gradation show many similarities to Tocharian A, but there are some essential differences, and there are more different patterns in general. The basic grading vowels are *ə*, *e* and *a*; exceptionally, we find *o*. As in Tocharian A, there are complications with roots containing a resonant *r* or *l* or a semi-vowel *y* or *w*; again, these complications are not identical to Tocharian A. In Tocharian B, morphological *ay* and *ey* both surface as /ay/, but in archaic texts, there is a difference between *aw* and *ew*, whereas in classical and late texts both *aw* and *ew* surface as /aw/. The resulting /ay/ and /aw/ are special in being real diphthongs, i.e., the *a* in these combinations does not undergo the effects of stress (and so stress is not detectable in these combinations); for morphological reasons it is best to analyse these diphthongs as composed of a gradation vowel *e* or *a* plus a semi-vowel *y* or *w*. The *ə*-grade of *re*, *er* or *ra*, *ar* is always /ər/ (never /rə/), and of *le*, *el* or *la*, *al* it is always /əl/ (never /lə/), compare the following scheme:

root type	*ə*-grade			*e*-grade			*a*-grade		
plain	<a, ä>	/ə/	{ə}	<e>	/e/	{e}	<ā, a>	/a/	{a}
-y-	<i>	/əy/	{əy}	<ai>	/ay/	{ey}	<ai>	/ay/	{ay}
-w-	<u>	/əw/	{əw}	<au>; <e_u>, <ew>	/aw/; /ew/[27]	{ew}	<au>	/aw/	{aw}
-ər-	<är, ar>	/ər/	{ər}	<er>	/er/	{er}	<ār, ar>	/ar/	{ar}
-əl-	<äl, al>	/əl/	{əl}	<el>	/el/	{el}	<āl, al>	/al/	{al}
-rə-	<är, ar>	/ər/	{rə}	<re>	/re/	{re}	<rā, ra>	/ra/	{ra}
-lə-	<äl, al>	/əl/	{lə}	<le>	/le/	{le}	<lā, la>	/la/	{la}

Another peculiarity of the Tocharian B gradation system is *a*-affection, which blurs the gradation system. *a*-affection is a morphological change of *e*-grade to *a*-grade

[27] The diphthong /ew/, written <e_u>, <ew>, is confined to archaic Tocharian B.

before an *a* in the following syllable. It is a morphological change because the sequence *e_a* is by no means impossible or even rare in Tocharian B; however, it is *not* morphologically distinctive, since there is no *morphological* contrast between forms with *a*-affection and forms without: *a*-affection is a morphological regularity that is concomitant with *e*-grade followed by *a* in certain classes. *a*-affection blurs the gradation system because it may leave *e*- and *a*-grade indistinct before *a*, so that structural arguments must be adduced to view surface *a*-grade before *a* as either real *a*-grade or as concealed *e*-grade.

Apart from *a*-affection, we also find *o*-affection in Tocharian B verbal morphology. *o*-affection does not interfere with the gradation system because an *o*-suffix is found in one present class only, where there is no gradation, neither stem-internal nor between stems. *o*-affection changes a preceding *a* to *o* before *o*, and in some rare cases it can proceed further back: in a sequence *a_a_o* both *a*'s are affected, so that *o_o_o* is the outcome (subsequently, the third *o* is syncopated, see 2.5.3, p 64). Like *a*-affection, *o*-affection is morphological, as *a_o* is an acceptable sequence in the language. *o*-affection is not morphologically distinctive, perhaps with the exception of a small class of verbs discussed in 2.5.3 (p 64), where it may be co-distinctive.

In stem-internal gradation patterns, *ə* : *e* is the basic type; all instances of *ə* : *a* gradation occur before a following *a*, and can thus be seen as derived from the basic pattern *ə* : *e* through *a*-affection. Stem-internal gradation is basically found in root subjunctives (both *ə*|Ø- and *ə*|*a*-roots) and in the *s*-preterite, and the corresponding imperatives of both.

ə : *e* gradation is found in a number of *ə*|Ø-root subjunctives, whereas the derived gradation *ə* : *a* is found in a number of *ə*|*a*-root subjunctives, one *ə*|*a*-root present-subjunctive, and in some *a*-subjunctives. The two types of gradation seem to represent the same basic type because they are in complementary distribution over root types with and without root-final *a*, and the gradation pattern is exactly the same. Both exhibit *e*- or *a*-grade respectively in the active singular, and *ə*-grade in all other subjunctive forms.

In forms derived from the subjunctive stem, *ə*-grade is also regular: the inf. *tārkatsi* /tárkatˢəy/ B21a5 of *tərka-* 'let go' is certainly a mistake in view of frequent and regular *tarkatsi* /tə́rkatˢəy/ (Lane 1959: 169; Cowgill 1967: 158).

The functional load of these gradation patterns is different from Tocharian A. First, the two most frequent forms of the subjunctive paradigm, the 3sg. and the 3pl., have the same ending *-n* and their distinction in the grading subjunctives is fully dependent on the vowel grade of the root; in Tocharian A, on the other hand, there are no identical endings within paradigms. Second, with other identical endings, within or between paradigms, the decisive distinction is never made by means of gradation: either there is another difference, for example in the accent or in a suffix, or the forms are really identical. I would expect a gradation difference between the 2pl. of the *s*-preterite and the corresponding pl. imperative, but the imperative must have had the prefix *pə-* as the main distinction between the two, and probably there was a difference in accent, too. Unfortunately, no such pair is attested – the 2pl. of

the *s*-preterite is not attested at all –, but the forms may have been: 2pl.prt. *tesas** /tesə́s/ {tesə́-sə} vs pl.ipv. *ptasäs** /ptə́səs/ {pə-tə́sə-sə} (attested is arch. *ptässo* /ptə́sso/ with mobile *o* for /ptə́ssə/). Gradation is certainly co-distinctive in the contrast between 2sg.sbj. and 2pl.prt.mid., e.g. 2sg.sbj. *kālat* {kála-t} of 'carry' vs 2pl.prt.mid. *klāt** {kəlá-t}.

The other stem-internal gradation pattern is found in a number of *s*-preterites, where the whole active has *e*-grade and the whole middle *ə*-grade. The functional load of this gradation type is low, since the endings are marked for voice, and the *s*-preterite has an alternating suffix that sets the active (except for the 3sg.) apart from the middle (and the 3sg. active). Although the number of attested forms is small, the same pattern seems to be found in the corresponding imperatives: the active forms have *e*-grade and the middle ones *ə*-grade.

One of the three present-preterites also has *e* : *ə* gradation. However, the pattern is similar to the gradation pattern of the *ə*|Ø-root subjunctive rather than that of the *s*-preterite, even though there is possibly a salient difference in the first person singular. The 1pl. *kmem* {kəmé-mə} and 3pl. *kameṃ* {kəmé-n} (/kə́men/) of 'come' with *ə*-grade in the root and the homophonous 2sg. and 3sg. *śem* {śemə-Ø} with *e*-grade conform to the general *ə*|Ø-root subjunctive pattern; however, the 1sg. *kamau* {kəmé-w} (/kə́maw/) seems to have *ə*-grade instead of the regular *e*-grade. The problem with this form is that it is attested only once in a fragmentary text, where its meaning and function cannot be verified; still, it is very likely to be a form of 'come' and the morphological pattern of this verb strongly suggests that it is a 1sg.prt.

Seemingly, a pattern derived from stem-internal *e* : *ə* gradation is *o* : *ə* gradation. The distribution of the grades is exactly the same, both in the *ə*|Ø-root subjunctives and in the *s*-preterite. However, it is not clear why the verbs that have *o*-grades do not have "regular" *e*-grades instead. We find {yop-} ~ {yəp-} of *yəp-* 'enter', which has *o*-grade in its *s*-preterite, but since the preterite has no middle, no *ə*-grade of the preterite is attested there; in {otk-}, the preterite stem of *wətk-* 'decide', likewise with *o*-grade for expected *e*-grade in the *s*-preterite, the initial *w-* seems to be lost additionally (on the prehistory of these forms, see 4.5.10, p 429).

A different pattern with *o*-grades does not combine with *ə*-grade, but with *a*-grade instead. This pattern is attested in only two verbs, apparently both of the *a*|Ø-root type, that is, the type that normally does not show gradation at all. We find {kow-} ~ {kaw-} 'kill' with the 3sg.sbj. *kowän* and the 3sg.prt. *kowsa*, forms where we would expect *e*-grade in *ə*|Ø-roots. The *o*-grade variant of {or-} ~ {ar-} 'give up' is attested in the 3sg.sbj. *oräñ-c* and the prt. 1sg. *orwa*, 2sg. *orasta*, 3sg. *orsa*, where we would expect *e*-grade in *ə*|Ø-roots; however, the *a*-grade in the 3pl.prt. *arar* is unexpected (see 4.5.10, p 429).

All other gradation patterns distinguish stems. We find *ə* : *e*, *ə* : *a* (before *a*), and marginally *e* : *a* (before *a*) and *o* : *a*.

The *ə* : *e* pattern distinguishes some $^{ə}/_{e}$-presents and *s*-preterites. The $^{ə}/_{e}$-presents that are distinguished by this pattern have stable *e*-grade, whereas the other stems have either *e* : *ə* gradation or *ə*-grade, e.g. $^{ə}/_{e}$-present {ce^{śə}/$_{ke}$-} of *tək-* 'touch'

vs sbj. {t^{e}/ək-}. The *s*-preterites distinguished by this pattern have stable *e*-grade. Of course, such a distinction can only be established with middle forms, since active *s*-preterite forms may have *e*-grade because of stem-internal gradation. All *s*-preterites with distinctive *e*-grade combine with the rare $^{Ø}/_{e}$-subjunctive with *ə*-grade and a present with *ə*-grade, e.g. prt. {nek-sa-} of *nək-* 'destroy; perish' vs sbj. {nəké-}. In the verb *nək-*, the subjunctive has a grading active {n^{e}/ək-} beside it, but the other verbs of this class have only middle subjunctive forms with *ə*-grade: {cəmé-} of *təm-* 'be born', {pəké-} of *pək-* 'boil, ripen' etc.

The *ə* : *a* pattern is only found before *a*. It is most frequent in the causative preterite, where it combines with initial palatalisation and distinctive initial accent. However, this class is also attested in verbs with palatalisation-neutral initials, and the accent is not distinctive in the 3sg. act., the most frequent form. Thus, the *a*-grade may be an important distinction between the causative and the non-causative, e.g. 3sg.prt. *śarsa* /śə́rsa/ {śərsá-Ø} '(s)he knew' of *kərsa-* 'know' vs 3sg.prt. *śārsa* /śársa/ {śársa-Ø} '(s)he let know' of *śərs-*$^{caus.}$ 'let know'. Four verbs show a slightly different pattern: {pĺawá-} to *pləw-* 'complain', {ĺaká-} to *lək-* 'see', {ĺawá-} to *ləw-* 'wipe off' and {śawá-} (with non-distinctive palatalised *ś-* throughout) to *śəw-* 'eat'. The only difference with the causative pattern is that the causative has root (initial) accent. The similarity between the two patterns is shown by the irregular causative to *ləka-*: it is the only causative with *ə*-vocalism where the preterite {lákəṣṣa-} is formed from the present-subjunctive, apparently because an *a*-grade preterite {ĺáka-}** would have been too close to the corresponding non-causative {ĺaká-}.

In all remaining cases of *ə* : *a* gradation the present stem is distinguished by *ə*-grade versus *a*-grade in all other stems. This pattern seems to be regular in *ññ^{ə}/$_{e}$*-presents (not *ññ^{ə}/$_{e}$*-present-subjunctives), and in some cases I have assigned ambiguous forms with this gradation pattern to the same class. Since the present is marked not only by gradation, but also by a special suffix, gradation is generally only co-distinctive in this class. However, in the 3sg. the present suffix may be concealed and become similar to the corresponding subjunctive, at least in the script, so that the root grade becomes the only distinction: 3sg.prs. *nittaṃ* {nəytə́ññə-n} /nəyttə́n/ vs 3sg.sbj. *naittaṃ** {náytta-n} /náyttan/. Nevertheless, the forms were certainly distinguished by a difference in accent, too, so that in real speech the root grade was only co-distinctive. *ə* : *a* gradation is further found in the verb *pəla-* 'praise', where it is also only co-distinctive because the present has a distinctive geminate *ll* in addition. Since with the *ññ^{ə}/$_{e}$*-presents and *pəla-* 'praise' *a*-grade combines with consistent root-final *a*, we may be dealing with original *e*-grade changed to *a* through *a*-affection.

e : *a* gradation is very rare and its *a*-grade only occurs before *a*: it is attested with certainty only for *klep-* 'touch', *tresk-* 'chew', *mens-* 'be sad' (see 4.7.1, p 454). The *e*-grade is found in the present stems, e.g. *tre^{śśə}/$_{ske}$-* and *men^{sə}/$_{se}$-* of the verbs *tresk-* and *mens-*, whereas *a*-grade combined with an *a*-suffix is found in the subjunctive and the preterite, e.g. *traska-* and *mant^{s}a-*. The rarity of the pattern may have instigated the creation of variants following other patterns that are more frequent,

which sets *mens-* apart from *mantsa-* {mánsa-} with a new present *mantsana-* {mansə́na-}. The verb *tresk-* is rare altogether, so that it may be a coincidence that secondary forms of the type {traskə́na-} are not attested.

o : *a* gradation occurs in one verb only: 'drink'. It has a present-subjunctive with *o*-grade and a present-preterite and preterite participle with *a*-grade. The gradation was in most forms only co-distinctive, but the nom.sg.m. of the prt.ptc., *yāku*, differed only in the vowel grade from the 1sg.prs.-sbj. *yoku*; the 1sg.prs.-sbj. must have been very similar to the unattested 1sg.prt., but probably there was still a difference in the suffix: 1sg.prs.-sbj. *yoku* {yokə-w} vs 1sg.prt. *yākau** /yákaw/ {yak-é-w}.

2.5.3 AFFECTION

Affection is only found in Tocharian B. Historically, *ā* : *a* gradation in Tocharian A, which distinguishes a class of presents with *a*-grade from subjunctives with *ā*-grade, goes back to affection, but synchronically, it is rather to be analysed as gradation. In the Tocharian A preterite participle we find *ā*-reduplication before an *ā* in the root, which could be called affection, but since there is also a correlation between absence of reduplication and *ä* in the root, it need not be (cf 2.9.1, p 146). In Tocharian B, affection is principally a non-distinctive morphological phenomenon.

In Tocharian B, affection comes in two forms: 1) *e* becoming *a* before *a*, and 2) *a* becoming *o* before *o*. Since the *a* or *o* remains, and there are no other *e* before *a* or *a* before *o* to contrast with, both types of affection are not distinctive.

There is one small subcategory where the affecting *o* disappears: *o*-presents to trisyllabic roots. In these presents, a sequence *CaCaCa* is affected by a following *o*, but this *o* is apocopated, so that the result is *CoCoC* instead of *CoCoCo*: {kolok-} to *kalaka-*, {porok-} to *paraka-*, {wolok-} to *walaka-* and {sonop-} to *sanapa-*. Strictly speaking, *o*-affection is not purely distinctive here either, since the difference between *a_a* and *o_o* is not the only one between e.g. the present and the subjunctive stem: the subjunctive stem is also longer, as it ends in *a*.

In view of the marginal variant *-ontr* for the optative ending *-oyentr* (see also 2.5.1, p 52), we would expect another instance of contrast there: a 3pl.opt. /arontr/* {ara-'əy-entr} vs a 3pl.prs. /orontr/* {oro-ntr}. Since these short optative endings are very rare in the middle (in contrast to the active), it can have been a very marginal contrast at most.

2.5.4 PALATALISATION

Apart from one or perhaps two secondary instances, there are no palatalising vowels in Tocharian. Phonetically, the front vowels of both Tocharian A and B are [i] and [e]. In Tocharian B, there are some cases of palatalisation in front of [i], which belong to the late language; the only consonants affected are *n* and *l*, cf *aṣañike* 'arhat' for *aṣanike* and *klyiye* 'woman' for *kliye* (Peyrot 2008a: 90-91; 109). The

existence of a parallel phenomenon for *e* is less clear: there are doublets of the type *pleksa* ~ *plyeṅksa*, but here the chronology rather seems to be reversed, and since such doublets are isolated, it might also be a morphological phenomenon. In Tocharian A, there is some variation between *li* and *lyi*, too; although the texts do not seem to display clear chronological differences, the palatalised variant is probably secondary compared to the non-palatalised variant. In all other cases, palatal consonants occur freely before all vowels, including back vowels, and all front vowels occur after all consonants, palatal and non-palatal.

In Tocharian, palatalisation is a morphological phenomenon: it is not a palatal feature added to a consonant, but it is a system of morphological alternations of non-palatal and palatal consonants. In some cases, one could argue that there are palatalised consonants on the phonological level, like <p> ~ <py>, but in the majority of cases palatal consonants are independent phonemes, not a non-palatalised consonant with a palatal feature added. This is fully in line with the fact that many consonants have no palatal variant, like *r*, and some share the same palatal variant, like *ts* and *k* in Tocharian A, which both alternate with *ś*.

A further argument for a morphological rather than a phonological analysis of palatalisation is that in some cases the palatal variant of a certain consonant or consonant group is specific for the morphological pattern. For instance, the palatal variant of Tocharian B *nk* is *ñc* in some categories, but *ṃś* in others, whereas *py*, the palatal variant of *p*, occurs in specific morphological patterns only. If palatalisation had been a phonological phenomenon, the palatalised variants would always have been the same.

As a morphological phenomenon, palatalisation is widespread. However, it is not fully independent: it is often associated with gradation. The relationship with gradation is not constant: certain vowel grades sometimes go together with palatalisation, but gradation may also occur without palatalisation, or palatalisation without gradation. Even if palatalisation and gradation are found side by side, the relationships may vary, cf nom.sg. *pācer* 'father' with palatal *c* before *e*-grade, obl.sg. *pātär* with non-palatal *t* before *ə*-grade or the present suffix {$^{ṣṣə}/_{ske}$} with palatal *ṣṣ* before *ə*-grade and non-palatal *sk* before *e*-grade. Although it is frequent and important, palatalisation is subject to two important types of restrictions. Even in categories where it is regular, palatalisation cannot affect certain consonants or consonant groups, and in roots of the *a*|*x*-type, i.e., those without gradation, initial palatalisation never occurs.

Thus, a description of palatalisation in Tocharian must address the following questions:

1) which consonants and consonant groups have palatal variants?
2) which palatal variants have these consonants and consonant groups?
3) which roots are affected by initial palatalisation and which are not?
4) in which categories do we find palatalisation and in which is it distinctive?
5) what is the correlation with gradation?

Roots that cannot undergo palatalisation (point 3) are of the *a*|*x*-type, as mentioned above, and they are discussed in 2.4.4 (p 46). Below, the other points are systematically treated, first for Tocharian A and then for Tocharian B: although the palatalisation systems have many similarities, differences are considerable, also structurally.

First, an inventory of palatalisation patterns is given: all verbal categories where palatalisation is found are discussed. Second, a list is presented of palatalisable consonants and consonant groups with their palatal variants, with references to the category where these variants are attested. Third, the system of palatal, non-palatal (but palatalisable) and neutral (non-palatalisable) consonants is briefly recapitulated. Fourth, an overview of the vowel grades following palatal consonants is given.

INVENTORY OF TOCHARIAN A:

initial palatalisation in the strong imperfect

There are only few strong imperfects; most have palatalised initials, and {pārā-}, which has not, certainly has an unpalatalisable initial: [+pal]: {cārkā-} (*tärkā-* 'let go'), {śākā-} (*tˢäkā-* 'pull out'), {śārsā-} (*kräsā-* 'know'), {śālpā-} (*kälpā-* 'obtain'), {ĺākā-} (*läkā-* 'see'); [−pal]: {pārā-} (*pär-* 'bring').

initial palatalisation in the *ä*|*ā*-root preterite

Palatalised initials in the active singular are attested for the following verbs: {śäwkā-} (*yok-* + *tˢäwkā-* 'drink'), {cärkā-} (*tärkā-* 'let go'), {śärsā-} (*kräsā-* 'know'), {śämā-} (*käĺ-* + *ṣtämā-* 'stand'), {śälā-} (*kälā-* 'bring'), {ĺämā-} (*ṣäm-* + *lämā-* 'sit'), {ĺäwā-} (*läwā-* 'send'). One verb does not fit the pattern, since it has medial palatalisation instead, next to one uncertain case of initial palatalisation; remarkably, the preterite participle, which should never be palatalised in this class, is attested with a palatalised variant, too: prt.ptc. *kätko*, *śätko* next to {käckā-} (*kätkā-* 'cross') and a fragmentarily attested (but regular) 3sg. *śtä*(*k*) {śätkā-Ø}. Many other verbs must belong to the same regular pattern, but their 3sg.act. forms are not attested, either by chance or because they are middle only. However, some verbs whose initial is certainly palatalisable (because they occur in the verbs listed above) have no palatalisation, so that we have to assume that there was an additional class without palatalisation, probably with intransitive verbs (see Winter 1980b: 553-555), e.g. {kälkā-} (*y-* + *kälkā-* 'go') and {tˢälpā-} (*tˢälpā-* 'be freed'). This complicates the search for unpalatalisable initials. Some examples of verbs without initial palatalisation where we would actually expect it on the basis of the morphological pattern are: {pälskā-} 'think', {päwtkā-} 'divide', {märtkā-} 'shave', {mäwkā-} 'give up', {mäwsā-} 'lift', {mräsā-} 'forget'. Accordingly, the initials *p-*, *m-* and *mr-* can be classified as unpalatalisable. Unclear is {tˢäytā-} 'touch' because it seems to be transitive, while its initial is certainly palatalisable.

initial palatalisation in the *s*-preterite[28]

Palatalisation is attested in the following verbs (all without attested preterite middle): {Ĺawck-$^{Ø}/_{sā}$-} of *läwtk-* 'turn into (tr.)', {kñas-$^{Ø}/_{(s)ā}$-} of *knā-* 'understand', {cank-$^{Ø}/_{sā}$-} of *tänk-* 'check', {crak-$^{Ø}/_{sā}$-} of *tärk-* 'dismiss', {ñak-$^{Ø}/_{sā}$-} of *näk-* 'destroy', {pĹawck-$^{Ø}/_{sā}$-} of *pläwtk-* 'arise', {śark-$^{Ø}/_{sā}$-} of *kärk-* 'bind', {śo-$^{Ø}/_{sā}$-} *käw-* 'pour', {Ĺayp-$^{Ø}/_{sā}$-} of *läyp-* 'leave behind', {Ĺawk-$^{Ø}/_{sā}$-} of *läwk-* 'shine'. On the basis of the middle preterites {tamä-} 'be born', {nakä-} 'perish', {t^{s}akä-} 'burn (intr.)', which are *sā*-less preterites with certainly palatalisable initials, this sub-class has no initial palatalisation. ({Ĺawk-$^{Ø}/_{sā}$-}, which is the only *sā*-less preterite with an active inflexion next to it, has a palatalised initial in the middle, perhaps because of the regular palatalisation in the active?)

Apart from unpalatalisable initials there are more subcategories where palatalisation is lacking. There is one verb with an alternation between palatalised and unpalatalised initials, where the unpalatalised variant is found in the middle, so that the lack of initial palatalisation in some verbs with only middle forms may be regular (see below): {$^{ca}/_{täs}$-$^{Ø}/_{(s)ā}$-} of *täs-* 'put' with an active {cas-$^{Ø}/_{sā}$-} and a middle {täs-(s)ā-}. Another difference between the palatalised and unpalatalised variants is that the former is followed by *a*-grade, just as all palatalised preterites listed above, and the latter is followed by *ä*-grade.

Preterites with unpalatalised initials, *a*-grade, and active forms are: {paĹ-$^{Ø}/_{sā}$-} of *päl-* 'extinguish', {mayt-$^{Ø}/_{sā}$-} of *mäyt-* 'set out', {mark-$^{Ø}/_{sā}$-} of *märk-* 'take away (?)' (Malzahn forth.b), {rak-$^{Ø}/_{sā}$-} of *räk-* 'stretch', {wack-$^{Ø}/_{sā}$-} of *wätk-* 'decide'. Since they all have initials of which it is rather likely that they are unpalatalisable on the one hand, and they occur in a category where we would certainly expect initial palatalisation on the other, we can safely classify these initials as unpalatalisable. The following verbs lack initial palatalisation and have *ä*-grade: {träyk-$^{Ø}/_{sā}$-} of *träyk-* 'be confused', {sräwk-$^{Ø}/_{sā}$-} of *sräwk-* 'kill', {spärk-$^{Ø}/_{sā}$-} of *spärk-* 'disappear', {säyn-$^{Ø}/_{sā}$-} of *säyn-* 'satiate', {tränk-$^{Ø}/_{sā}$-} of *tränk-* 'cling'. Of these, {säyn-$^{Ø}/_{sā}$-} certainly has a palatalisable initial, so that palatalisation must be absent for structural reasons – perhaps because it is middle only; {tränk-$^{Ø}/_{sā}$-}, also middle only, could be parallel. {träyk-$^{Ø}/_{sā}$-} is attested with one problematic form only; {sräwk-$^{Ø}/_{sā}$-} may have an unpalatalisable initial and {spärk-$^{Ø}/_{sā}$-} is unclear: it is active and we would expect *şp* (but it has *ä*-grade instead of *a*-grade). The remaining *s*-preterites are of the unpalatalisable *ā*|Ø-type or they have unpalatalisable initials.

The two imperfects {crank-$^{Ø}/_{sā}$-} of *tränk-* 'say' and {śayp-$^{Ø}/_{sā}$-} of *t^{s}äyp-* 'dance' perfectly conform to this pattern; on their being imperfects, see 2.6.7 (p 105).

A peculiarity of *s*-preterites is that we sometimes find medial palatalisation, in two cases combined with initial palatalisation, and in two other cases with unpalatalisable initials: {pĹawck-$^{Ø}/_{sā}$-} of *pläwtk-* 'arise', {pyawck-$^{Ø}/_{sā}$-} of *pyäwtk-* 'come into being', {Ĺawck-$^{Ø}/_{sā}$-} of *läwtk-* 'turn into (tr.)', {wack-$^{Ø}/_{sā}$-} of *wätk-* 'decide'.

[28] Cf e.g. Ringe (1990: 185-186).

Although a restored *palyä(ṣt)* A303a4 is often adduced to prove a stem {paĺ-$^{Ø}/_{sā}$-} of *päl-* 'extinguish', this restoration is very uncertain and the palatalised /Ĺ/ is not supported by the other verbs with medial palatalisation because these all have *tk* ~ *ck*. It is implausible that the *ck* in these verbs compensates for the impossibility of initial palatalisation:[29] {Ĺawck-$^{Ø}/_{sā}$-} and {pĺawck-$^{Ø}/_{sā}$-} have in fact palatalised initials, so that such an explanation could only work for {pyawck-$^{Ø}/_{sā}$-} and {wack-$^{Ø}/_{sā}$-}. In my view, the key to this phenomenon is the cluster *tk* because that is what the four verbs have in common (strikingly, the *ä*|*ā*-root preterite of *kätkā-* also shows an alternation *tk* ~ *ck*).

initial palatalisation in the reduplicated preterite

In the reduplicated preterite, we find initial palatalisation in a few verbs, medial palatalisation in two isolated cases (both with *l* ~ *Ĺ*), and no palatalisation in the bulk of the instances. With initial palatalisation we find: {ca-cälā-} (*täl-* 'lift'), {ña-ñäwā-} (*näw-* 'roar'), {Ĺa-Ĺämā-} (*läm-* 'establish'), {śa-śämā-} (*tˢäm-* 'promote'), {śa-śärā-} (*tˢär-* 'separate'), {śa-śśämā-} (*ṣtäm-* 'put'). On the basis of the preterite participles *cacpuku* and *śaśpäṅku*, we can assume that the relevant verbs formed a reduplicated preterite {ca-cpäwkā-} (*tpäwk-* 'hide') and {śa-śpänkā-} (*tˢpänk-* 'skin'?). Two verbs clearly exhibit initial palatalisation, but this palatalisation is found in the other stems, too: {śa-śärsā-} (*śärs-* 'let know', base verb *kräs-* 'know'), {ṣa-ṣärpā-} (*ṣärp-* 'point out'; see Winter 1980b: 555). In one verb, *spärk-* 'let perish', we find a similar phenomenon, with palatalised *ṣp-* at least in the sbj. {ṣpärkā$^{śä}/_{sa}$-} and the prt.ptc. *ṣaṣpärku*, while it is lacking precisely in the preterite {sa-spärkā-} if we are to base ourselves on 3pl.mid. *saspärkānt* A310a4.

With medial palatalisation we find: {ka-käĺpā-} (*kälp-* 'make obtain') and {pa-päĹkā-} (*pälk-* 'torment'). Many of the verbs without palatalisation have unpalatalisable initials, but some have certainly palatalisable ones, e.g. {ka-kälā-}, {ta-tätkā-}, {sa-sätkā-}. In two verbs, the present suffix has spread to the preterite, in its palatalised variant: {ta-tämṣā-} and {la-läkṣā-}. Although they look like imperfects, they must be preterites because of their reduplication.

initial palatalisation in the present and the subjunctive

Systematic initial palatalisation in the present seems to be attested only with *tˢ* ~ *ś* in Ø-presents with distinctive *a*-grade: {śama-} (*tˢämā-* 'increase'), {śalpa-} (*tˢälpā-* 'be freed'), and with additional irregularities possibly {śalca-} and {śertä-}, for which see 2.6.10 (p 115). Apart from verbs with initial palatalisation throughout, the following isolated cases can be mentioned: {cä$^{śä}/_{ka}$-?} 'touch', if 3pl. *ckeñc* is indeed from such a stem and at the same time related to *tkālune*; {śäm$^{ä}/_{a}$-} 'come', sbj. to the root *kʷäm-*;

[29] As argued by Ronald Kim (Poznań) in a lecture at the 2008 Fachtagung of the Indogermanische Gesellschaft in Salzburg.

{ṣämᵃ/ₐ-} 'sit', which has only a present, so that it cannot be seen whether the palatalisation belongs to the root or is characteristic of the present only.

medial palatalisation in present and subjunctive

All instances are found with the *ʾᵃ/ₐ*-suffix, which forms both presents and subjunctives. We find palatalisation in the following verbs: {āśᵃ/ₖₐ-} 'lead', {kāᶜᵏᵃ/ₜₖₐ-} 'be glad', {kĺoᵴᵃ/ₛₐ-} 'hear', {träyᵴᵃ/ₖₐ-} 'be confused', {pāᵴᵃ/ₛₐ-} 'protect', {pälᵴᵃ/ₖₐ-} 'torment', {proᵴᵃ/ₛₐ-} 'fear', {yärᵴᵃ/ₛₐ-} 'honour', {wlāyᵴᵃ/ₛₐ-}[30] 'work', {tᵴärᵴᵃ/ₖₐ-} 'separate', and the frequent *ᵴᵃ/ₛₐ*-suffix and its derivatives. We do not find palatalisation in the following: {kāwᵃ/ₐ-} 'kill', {cämpᵃ/ₐ-} 'can', {pärᵃ/ₐ-} 'bring', {śāwᵃ/ₐ-} 'live', {śämᵃ/ₐ-} 'come', {ṣämᵃ/ₐ-} 'sit', {yāmᵃ/ₐ-} 'do', {läñcᵃ/ₐ-} 'go out', {weñᵃ/ₐ-} 'say' (*nas-* is a special case, on which see 2.6.8, p 108). A special present type with a palatalised medial throughout the present, but not in other stems, is ascertained by {pañwᵃ/ₐ-} 'stretch', with possible parallels in {maĺwᵃ/ₐ-} 'grind', {waĺᵃ/ₐ-} 'cover' (cf under 2.6.9, p 110).

medial palatalisation in the imperfect

The medial palatalisation of the imperfect follows regular patterns. We mostly find *n ~ ñ*, *nk ~ ñś*, *s ~ ṣ* in e.g. (imperfect stems cited): {keñā-} 'call', {kātäñśā-} 'rise', {āyṣā-} 'give'. In addition, there are isolated cases like: {pälśā-} 'shine', {mäñcā-} 'hurt' and {säĺpā-} 'glow'. The following have an unpalatalisable medial: {yäpā-} 'do', {śāwā-} 'live', {ṣämā-} 'sit', {sāryā-} 'sow', and possibly {yäwā-} 'strive for'. In addition, we find palatal consonants such as *ĺ* in {käĺā-} 'stand', cf prs. {käĺᵃ/ₐ-}, and the cluster *ĺw* in {maĺwā-} 'grind', cf prs. {maĺwᵃ/ₐ-} (see 2.6.9, p 110).

overview

[−pal]	[+pal]	
k	*ś*	ipf. (initial); *ä*|*ā*-√-prt.; *ä*|Ø-√-prt.; red.prt.; *ʾᵃ/ₐ*-sbj. (initial); *ʾᵃ/ₐ*-prs. (medial)
kn	*kñ*	*ä*|Ø-√-prt.
t	*c*	ipf. (initial); *ä*|*ā*-√-prt.; *ä*|Ø-√-prt.; red.prt.; *ʾᵃ/ₐ*-prs. (initial)
tk	*ck*	*ä*|*ā*-√-prt. (medial); *ä*|Ø-√-prt. (medial); *ʾᵃ/ₐ*-prs. (medial)
tp	*cp*	red.prt. (inferred)
tr	*cr*	*ä*|Ø-√-prt.
tw	*cw*	*ʾᵃ/ₐ*-prs. (medial)
n	*ñ*	*ä*|Ø-√-prt.; red.prt.; ipf. (medial)
nk	*ńś*	ipf. (medial)
nt	*nc*	ipf. (medial)

[30] The vocalism *āy* instead of *e* is needed for the preterite participle *wāwleṣu*.

[−pal]	[+pal]	
nw	*ñw*	red.prt.; *ʾä/a*-prs. (medial)
pl	*pĺ*	*ä*|Ø-√-prt.
rk	*rś*	*ʾä/a*-prs. (medial)
rs	*rṣ*	*ʾä/a*-prs. (medial)
l	*ĺ*	ipf. (initial); *ä*|*ā*-√-prt.; *ä*|Ø-√-prt.; red.prt.; *ʾä/a*-prs. (medial)
lk	*ĺk*	red.prt. (medial)
	lś	*ʾä/a*-sbj. (medial); ipf. (medial)
lw	*ĺw*	*ʾä/a*-prs. (medial)?
lp	*ĺp*	red.prt. (medial); ipf. (medial)
ṣt	*ś(ś)*	*ä*|*ā*-√-prt.; red.prt.
s	*ṣ*	*ʾä/a*-prs. (medial); ipf. (medial)
sp	*ṣp*	red.prt.
tˢ	*ś*	ipf. (initial); *ä*|*ā*-√-prt.; *ä*|Ø-√-prt. (ipf. function); red.prt.; Ø-prs. (initial)
tˢp	*śp*	red.prt. (inferred)

Distinguishing palatal, non-palatal, and neutral consonants and consonant groups, it is best to start with the single consonants. Neutral consonants, which are never palatalised, are *p*, *m*, *r*, *w*; non-palatal consonants, which can undergo palatalisation, are *k*, *t*, *n*, *l*, *s*, *tˢ*; palatal consonants are *c*, *ñ*, *ĺ*, *ś*, *ṣ*. According to its behaviour, *y* should be classified as a neutral consonant – although it is itself palatal, of course –, since it cannot be palatalised and it is not the palatalised variant of another consonant. It is not surprising that combinations of neutral consonants are also neutral, and combinations of non-palatal consonants are non-palatal. In the latter category we generally find palatalisation of one of the consonants only: the first in *tk*, the second in *kn*, both in *nk*, *nt* (where the palatal nasal is not contrastive before *ś* and *c*). Of the cluster *lk* normally the second consonant is palatalised, but sometimes rather the first. Only *ṣt* is palatalised to something different from its parts: *ś* or *śś*, whereas *t* normally palatalises to *c* (as a palatal consonant, *ṣ* has no palatal counterpart). In clusters with combined neutral and non-palatal consonants, palatalised variants are attested for *tp*, *tr*, *tw*, *nw*, *pl*, *lp*, *lw*, *sp*, *tˢp*; in all cases, the non-palatal consonant is palatalised in the normal way and the neutral one remains unchanged. Possibly, *tr* and *sr* are neutral in some cases, but the evidence is not overwhelming (see p 67). Although *n* and *l* (and *nw* and *lw*) are certainly non-palatal in some categories, they are not in the *ʾä/a*-present or subjunctive: there they have palatal variants, but throughout the paradigm and not alternating with unpalatalised *n* and *l*.

Vowel grades after palatalised consonants are the following (all grades occur after non-palatal consonants as well):

	initial	medial
ä	*ä*|*ā*-√-prt.; sbj., red.-prt. (root initial); $^{\text{'ä}}/_{a}$-prs./sbj.	$^{\text{'ä}}/_{a}$-prs./sbj.
a	*ä*|Ø-√-prt.; red.-prt. (reduplication initial); Ø-prs.	
ā	strong ipf.	ipf.

INVENTORY OF TOCHARIAN B:

initial palatalisation in the *ə*|*a*-root preterite

In the *ə*|*a*-root preterite, the initial of the root is palatalised in the whole active, but not in the middle. Palatalised initials are attested in: {kĺəntˢá-} 'sleep', {ĺəmá-} 'sit', {ĺəwá-} 'send', {ĺəwka-} 'shine', {śətká-} 'cross', {śərsá-} 'know', {śəwtká-} 'embody', {ścəmá-} 'stand', {cərká-} 'let go', {śətá-} 'strew', {śərká-} 'rob', {śəlá-} 'bring'. The following preterites conform exactly to the same pattern except for the initial palatalisation, so that we can classify their initial as unpalatalisable: {krəstá-} 'cut off', {tˢənká-} 'rise', {pəwtká-} 'assign to', {pləská-} 'think', {mərsá-} 'forget', {rəwtká-} 'move (tr.)', {srəwká-} 'die'. There are some verbs with initials that are certainly palatalisable where we do not find palatalisation, so that there must be a subcategory without palatalisation (see Winter 1980b: 553-555): {kəryá-} 'buy', {kəlpá-} 'obtain', {kʷəlá-} 'fail', {sətká-} 'spread', and probably {spərká-} 'disappear'. Many of these seem to be intransitive, but not all (i.e. 'buy', 'obtain'). Some of the verbs with unpalatalisable initial listed above might belong to the subcategory without palatalisation, e.g. {mərsá-} and {srəwká-}, which both form the same *e*-present as the other verbs with unpalatalised palatalisable initials ({srəwká-} 'die' is also intransitive, but {mərsá-} is the only transitive verb in that present class).

Three verbs display irregularities that seem to be connected to the palatalisation pattern discussed above. In the preterite {ñətká-} 'prompt' we find *ñ* throughout the preterite, also in the middle. In {pərsá-} 'sprinkle' we find an <i> vowel in the 3pl. *pirsāre* that must reflect a prehistoric /ṕ/, but is inexplicable on the synchronic level. In {pəĺká-} 'look' we find medial palatalisation that might go back to initial palatalisation of the type {pĺəká-}, but since the other stems clearly have the shape {pəlka-}, i.e. sbj.sg. {palka-} etc, this formation is irregular synchronically.

initial palatalisation in the *a*-grade *ə*|*a*-root preterite

Three verbs with an *ə*|*a*-root preterite with *a*-grade in the root display palatalisation of the initial: {pĺawá-} 'complain', {ĺaká-} 'see', and {ĺawá-} 'rub'. A fourth verb has a palatal initial throughout: {śawá-} 'eat'. On the basis of middle forms of {ĺaká-} with palatalised initial, we have to assume that in this class initial palatalisation was found throughout the preterite (not only in the active).

initial palatalisation in the *s*-preterite

In the *s*-preterite, palatalisation is an isolated phenomenon. All cases concern *l* and *l*-clusters, and there is no difference between active and middle: {pᵉ/əĺk-$^{Ø}/_{sa}$-} of *pəlk-*

'burn (tr.)', {pĺew-$^{Ø}/_{sa}$-} of *pləw-* 'float', {Íe/əwk-$^{Ø}/_{sa}$-} of *ləwk-* 'shine', {Íe/əwt-$^{Ø}/_{sa}$-} of *ləwt-* 'drive away'. In one verb we find variation, between {plenk-$^{Ø}/_{sa}$-} and {pĺenk-$^{Ø}/_{sa}$-} of *pləṅk-* 'sell', where the forms with palatalisation seem to be more recent than the forms without. There are also two verbs with *l* and *l*-clusters where we do not find palatalisation: {pletk-$^{Ø}/_{sa}$-} of *plətk-* 'increase' and {leytk-$^{Ø}/_{sa}$-} of *ləytk-* 'remove'. Unlike all other palatalised forms, {pe/əĺk-$^{Ø}/_{sa}$-} has medial instead of initial palatalisation.

One irregular verb has a preterite with some similarity to the *s*-preterite: 'come'. The middle is a normal *s*-preterite {kəm-sa-}, but the active is different: it is an $^{ə}/_{e}$-present-preterite. This present-preterite resembles the *ə*|Ø-root subjunctive in having *e* : *ə* gradation in the root, but the distribution of the grades is different. In this paradigm, we find palatalisation in the forms with *e*-grade, i.e. the 2sg. and 3sg., both {śem-Ø}, whereas the other forms have no palatalisation and *ə*-grade, i.e. 1pl. /kmem/ {kəmémə}, 3pl. /kámen/ {kəmén} and probably 1sg. /kámaw/ {kəmé-w}.

initial palatalisation in the causative preterite

The causative preterite is the category with most instances of palatalisation in Tocharian B. In this category, some initials that are unpalatalisable elsewhere are palatalised nonetheless, and some initials have a second palatalisation product. Even in this category, however, not *all* initials are palatalisable. Palatalised initials are: *k* ~ *ky*, *k* ~ *ś*, *kl* ~ *kĺ*, *t* ~ *c*, *n* ~ *ñ*, *p* ~ *py*, *m* ~ *my*, *l* ~ *ĺ*, *w* ~ *y*, (*w* ~ *wy*), *ṣp* ~ *ṣpy*, *st* ~ *śc*, t^s ~ $t^s y$. Of these, *ky*, *py*, *my* and *wy*, *ṣpy* and $t^s y$ are attested only in this category, and *ky* and *wy* (the latter listed in brackets because it occurs only once) are found next to less transparent palatalised counterparts of *k* and *w*, namely *ś* and *y*, so that they are clearly secondary. Because *py* is treated as a cluster in reduplication, but we would in fact rather expect it to be a single consonant, the phonological status of *ky*, *py* etc is not entirely clear, and they will not be transcribed in a special phonological notation, but just as they are written. The initials *tr*, *pr*, *mr*, *y*, and *r* resist palatalisation even in this category.

{ñyársa-} of *nərs-* 'urge' is attested only once, so that its "double" palatalisation, i.e. *n* → *ñ* → *ñy*, need not have been a systematic phenomenon. It is striking, certainly in the light of the doublet for *k*, i.e. *ś* and *ky*, that we find *ś* throughout the verb in {śánmya-} of *śənm-* 'bind' and {śársa-} of *śərs-* 'let know', whereas {śátka-} of *kətk-* 'let cross' is paired with a present-subjunctives with variation between *ś-* and *k-*. Spread of palatalisation is also attested for {ṣárka-} of *ṣərk-* 'surpass'; variation in other stems has a parallel in {ṣál(l)a-} of *ṣəl-* 'throw down'. The cluster *ṣpy*, listed above, is attested twice in {ṣpyárka-} of *ṣpərk-* 'let perish' and {ṣpyárta-} of *spərtt-* 'move (tr.)', and in both verbs all other stems have *ṣp*, which is of course a palatalised initial in itself (both have a base verb with *sp* next to them; *ṣpənt-* 'make trust' is completely parallel, but a preterite {ṣpyánta-} is not attested).

initial palatalisation in the causative present

If palatalisation is morphologically distinctive in a causative, it is always the preterite that has a palatalised initial whereas the present is unpalatalised. Therefore, initial palatalisation is *not* distinctive for the causative present (see also Winter 1980b: 555-556). We may list the following cases:

1) with variation between palatalised and non-palatalised forms: {śə́tkə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} ~ {kə́tkə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *kətk-* 'let cross', {ṣpartə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} ~ {spartə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *spərtt-* 'move (tr.)', {ñəwskə́$^{\text{ṣṣə}}$/$_{\text{ske}}$-} ~ {nəwskə́$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *nəwsk-* 'oppress';
2) with palatalisation throughout, but no palatalisation in the base verb: {śə́rsə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *śərs-* 'let know', {ṣə́lə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *ṣəl-* 'throw down' (variation *s* ~ *ṣ* attested in the preterite participle), {ṣə́wkə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *ṣəwk-*$^{\text{caus.}}$ 'let hang down', {ṣpə́ntə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *ṣpənt-* 'make trust', {ṣpə́rkə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *ṣpərk-* 'let perish', {ṣə́rkə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *ṣərk-* 'surpass';
3) with palatalisation throughout, but without a corresponding base verb: {ṣənə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *ṣən-* 'count', {śə́nmə$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *śənm-* 'bind'.

In all cases, the palatalisation product is one that occurs outside the causatives, too, and not one of the series *ky*, *py*, *my* etc.

initial palatalisation in *e*-presents

In a small group of *e*-presents we find *e*-grade in the root, and in two of these this combines with initial palatalisation: {ñewe-} of *nəw-* 'roar' and {ĺewe-} of *ləw-* 'send'. Since {t$^{\text{s}}$enke-} of *t*^{s}*ənk-* 'rise' is completely parallel, we can classify *t*^{s} as unpalatalisable. In one $^{Ø}/_{e}$-subjunctive we also find initial palatalisation, but no *e*-grade, so that it is difficult to see whether it is parallel: {cəm^{ə}/$_{\text{e}}$-} of *təm-* 'be born'. {ĺəwke-} of *ləwk-* 'shine', which seems to underly 3sg.mid. *lyuketrä* B46a7, is difficult; many of the forms ascribed to this verb are in fact uncertain and the stems do not fit together.

initial palatalisation in $^{\text{ʾə}}/_{e}$-presents and subjunctives

Initial palatalisation is found both in $^{\text{ʾə}}/_{e}$-presents and in $^{\text{ʾə}}/_{e}$-subjunctives. In presents, it is found before *e*-grade, as in the following examples: {kĺep^{ə}/$_{\text{e}}$-} of *klep-* 'touch', {kĺen$^{\text{śə}}$/$_{\text{ke}}$-} of *klənk-* 'doubt', {cen$^{\text{śə}}$/$_{\text{ke}}$-} of *tənk-* 'check', {ce$^{\text{śə}}$/$_{\text{ke}}$-} of *tək-* 'touch' and {pĺe$^{\text{ccə}}$/$_{\text{tke}}$-} of *plətk-* 'increase'. {śew$^{\text{śə}}$/$_{\text{ke}}$-} of *kəwk-* 'call' may be added, although it could theoretically have *a*-vocalism (both are spelled <au>[31]). The following verbs have the same *e*-grade and since their initials are unpalatalisable elsewhere, we have to assume that they are here as well: {tre$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *tresk-* 'chew', {peññ^{ə}/$_{\text{e}}$-} of *pənn-* 'stretch', {per$^{\text{śə}}$/$_{\text{ke}}$-} of *perk-* 'peer', {men$^{\text{ṣə}}$/$_{\text{se}}$-} of *mens-* 'be sad', {meĺ^{ə}/$_{\text{e}}$-} of *meĺ-* 'grind' and {re$^{\text{ṣṣə}}$/$_{\text{ske}}$-} of *resk-* 'flow'. The /y/ of {cepy^{ə}/$_{\text{e}}$-} of *tep-*?

[31] Cf for instance {śay^{ə}/$_{\text{e}}$-, (śaw^{ə}/$_{\text{e}}$-)}, which does not belong here because it clearly has *a*-vocalism, e.g. 1sg. *śāyau*.

'step' deviates, but otherwise it would fit here, too; {kĺew^{ʂə}/$_{se}$-} of *kĺews-* 'hear' has all the formal characteristics, but functions as present-subjunctive.

In the following *ə*-grade formations it seems impossible to distinguish between presents and subjunctives on formal grounds: presents are {cə$^{nc ə}$/$_{nke}$-?} of *cənk-* 'please', {cəw$^{ś ə}$/$_{ke}$-} of *təwk-* 'be hidden', {cəmp^{ə}/$_{e}$-} of *cəmp-* 'can', {ñə^{ʂʂə}/$_{ske}$-} of *ñəsk-* 'desire', {Ĺə$^{ś ə}$/$_{ke}$-} of *Ĺək-* 'lie', and {ṣəm^{ə}/$_{e}$-} of *ṣəm-* 'sit' (suppletive, no unpalatalised stems beside it); subjunctives are {Ĺəw$^{ś ə}$/$_{ke}$-} of *ləwk-* 'shine', {pĹən$^{c ə}$/$_{ke}$-} of *plənk-* 'sell', and {śə(n)m^{ə}/$_{e}$-} of *kəm-* 'come'. Because their stem pattern is similar to that of {Ĺəw$^{ś ə}$/$_{ke}$-} and {pĹən$^{c ə}$/$_{ke}$-}, we can assume that {trəy$^{ś ə}$/$_{ke}$-} of *trəyk-* 'err', {wəy$^{ś ə}$/$_{ke}$-} of *wəyk-* 'drive off', and {t^{s}ər$^{ś ə}$/$_{ke}$-} of *t^{s}ərk-* 'burn (tr.)' have unpalatalisable initials ({pəl$^{ś ə}$/$_{ke}$-} ~ {pəĹ$^{ś ə}$/$_{ke}$-} of *pəlk-* 'burn (tr.)' can also be compared, but here we find variation between *l* and *Ĺ*). The initial palatalisation of the present {Ĺəyk^{ʂə}/$_{se}$-} of *ləyk-* 'wash' is clearly secondary vis-à-vis its variant {ləyk^{ʂə}/$_{se}$-}, and the following presents and subjunctives have a palatalised initial after other stems of the same verb: prs. {Ĺəwtə́^{ʂʂə}/$_{ske}$-} of *ləwt-* 'drive away', prs. {ṣən^{ʂə}/$_{se}$-} of *ṣən-* 'count', prs. {ṣərp^{ʂə}/$_{se}$-} of *ṣərp-* 'point out', sbj. {ṣərp^{ə}/$_{e}$-} of the same verb, and sbj. {ṣpər$^{ś ə}$/$_{ke}$-} of *ṣpərk-* 'let perish'.

One verb has initial palatalisation *only* in the *^{ʂʂə}/$_{ske}$*-present, which is without parallels whatsoever: {yə(sə)^{ʂʂə}/$_{ske}$-} of *wəs-* 'wear' (the *sə* is put in brackets because it is not visible in any attested present form, but needs to be there to connect it to the root *wəs-*, see e.g. inf. *wastsi*).

medial palatalisation in *^{ə}/$_{e}$*-presents and subjunctives

All cases of medial palatalisation with the *^{ə}/$_{e}$*-suffix concern *k*, *t*, *s* and clusters with one of them as the last consonant: {ak^{ʂə}/$_{se}$-} of *aks-* 'announce', {ay$^{ś ə}$/$_{ke}$-} of *ayk-* 'know', {a^{ʂə}/$_{se}$-} of *as-* 'bring', {ka$^{cc ə}$/$_{tke}$-} of *katk-* 'be glad', {kər^{ʂʂə}/$_{ske}$-} of *kərsk-* 'shoot', {kĺew^{ʂə}/$_{se}$-} of *kĺews-* 'hear', {cə$^{nc ə}$/$_{nke}$-?} of *cənk-* 'please', {cen$^{ś ə}$/$_{ke}$-} of *tənk-* 'check', {ce$^{ś ə}$/$_{ke}$-} of *tək-* 'touch', {ñə^{ʂʂə}/$_{ske}$-} of *ñəsk-* 'desire', {trəy$^{ś ə}$/$_{ke}$-} of *trəyk-* 'err', {tre^{ʂʂə}/$_{ske}$-} of *tresk-* 'chew', {na^{ʂʂə}/$_{ske}$-} of *nask-* 'bathe', {pa^{ʂʂə}/$_{ske}$-} of *pask-* 'protect', {pəl$^{ś ə}$/$_{ke}$-} of *pəlk-* 'burn', {pĹən$^{c ə}$/$_{ke}$-} of *plənk-* 'sell', {məw^{ʂə}/$_{se}$-} of *məws-* 'lift', {men^{ʂə}/$_{se}$-} of *mens-* 'be sad', {ya^{ʂʂə}/$_{ske}$-} of *yask-* 'beg', {yər^{ʂə}/$_{se}$-} of *yərs-* 'revere', {re^{ʂʂə}/$_{ske}$-} of *resk-* 'flow', {lan^{ʂə}/$_{se}$-} of *lans-* 'work', {Ĺə$^{ś ə}$/$_{ke}$-} of *Ĺək-* 'lie', {Ĺəw$^{ś ə}$/$_{ke}$-} of *ləwk-* 'shine', {wəy$^{ś ə}$/$_{ke}$-} of *wəyk-* 'drive off', {śew$^{ś ə}$/$_{ke}$-} of *kəwk-* 'call', {ṣpər$^{ś ə}$/$_{ke}$-} of *ṣpərk-* 'disappear', {t^{s}ər$^{ś ə}$/$_{ke}$-} of *t^{s}ərk-* 'burn (tr.)', and the ubiquitous *^{ʂə}/$_{se}$-* and *^{ʂʂə}/$_{ske}$-* presents. The examples are straightforward except for *nk*, which in this category palatalises both to *nś* and to *nc* (the same palatalisation product as found in the imperfect-optative, see below, p 75): with *nc* we find {cən$^{c ə}$/$_{ke}$-?} 'please' (not totally certain because the *e*-variant is not attested) and {pĹən$^{c ə}$/$_{ke}$-} 'sell';[32] with *nś*, {cen$^{ś ə}$/$_{ke}$-} 'check'.

[32] For some reason, it is often argued that *k*-finals are not palatalisable. While Hackstein does away with most of the examples, he insists that *-ṅk-* is not palatalisable (1995: 149-150). As I

We find no palatalisation alternation in the following cases: {kañmᵊ/ₑ-} of *kañm-* 'play', {kĺepᵊ/ₑ-} of *klep-* 'touch', {cəmpᵊ/ₑ-} of *cəmp-* 'can', {peññᵊ/ₑ-} of *pənn-* 'stretch', {meĺᵊ/ₑ-} of *meĺ-* 'grind', {weñᵊ/ₑ-} of *weñ-* 'speak', {śayᵊ/ₑ-} of *śay-* 'live', {śə(n)mᵊ/ₑ-} of *kəm-* 'come', {ṣərpᵊ/ₑ-} of *ṣərp-* 'point out'. Of these, *p* and *m* are clearly unpalatalisable, whereas *ñ*, *y* and *ĺ* cannot be palatalised because they are already palatal.

The *ᵓ/ₑ*-preterite does not give a different picture: {ləᶜᵊ/ₜₑ-} of *lət-* 'go out' conforms to the regular pattern, and {yaśᵊ/ₖₑ-} of *yok-* 'drink' too, although the *e*-variant of the latter is not attested. *kəm-* 'come' is irregular because of its gradation and palatalisation in the active singular of the preterite, but with the forms attested, it seems that the gradation of the suffix is completely regular; of course, its root-final *m* is unpalatalisable.

A peculiarity of the *ṣṣᵊ/ₛₖₑ*-suffix is that its palatalised variant reduces to *s* instead of *ṣ* before *t* (before a consonant we would never expect a geminate *ṣṣ*, but rather a single *ṣ*). This development is not understandable from the palatalisation patterns described in this section (on the historical explanation, see Couvreur 1947: 63 and 4.5.5, p 413). One verb even consists of nothing more than this suffix, or rather it has a root *sk* with an *ᵓ/ₑ*-suffix which gives the same result: {ᵊ/ₛₖₑ-}. In this verb, too, we find reduction to *s*, i.e. 3sg. *ste*, 3sg.suff. *star-* (see also 2.5.1, p 54).

medial palatalisation in the *'əy*-sbj. (and the ipf.-opt.)

There are no indications that the subjunctive *'əy*-suffix has other palatalisation effects than the imperfect-optative *'əy*-suffix. As subjunctives we may list {akĺáy-} of *akl-* 'learn', {awkṣəy-} of *awks-* 'grow', {kərśəy-} of *kərst-*? 'chop', {kəlpáy-} of *kəlp-* 'steal', {laĺáy-} of *lal-* 'make effort', {wəṣáy-} of *wəs-* 'dwell', whereas {śerəy-} of *śer-* 'hunt' clearly has an unpalatalisable *r*. Imperfect-optatives are very frequent, but many are formed to stems in *e*, *o* or *a*: the first two block palatalisation before disappearing,[33] and the third gives *oy*. Many others are formed to stems in *sk*, *s*, or *ññ*, with well-known palatalisation effects. Worth mentioning is the lack of palatalisation after *-w* (e.g. {kəwəy-} of *kəw-* 'pour', {pləwəy-} or {pĺəwəy-} of *pləw-* 'float', or {rəwəy-} of *rəw-* 'open'), the palatalisation product of such rare clusters as *tt* in {təccáy-} of *təs-* 'put' (sbj. {təttá-}) and *tk* in {pláccəy-} of *plətk-* 'increase', and the palatalisation product of *nk*, which is only *nc* in this category, not *ńś* as in *ᵓ/ₑ*-present

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understand his argumentation, this view is based on the late colloquial form *plyasi* Ot12.9, which he derives from **plyañc-tsi* by sound law: **plyañc-tsi* > **plyañk-tsi* > **plak(t)si* > *plyasi*. Obviously, there is neither evidence nor need for the intermediate form **plyañktsi*, so that there is no reason whatsoever to assume that *ṅk* is not palatalisable: *plasi* may derive from **plyaśsi* < **plyaṃśtsi* (Peyrot 2008a: 70, 86-87).

[33] In *o*-presents with *o*-syncope, if that is how this class should be called, the *o* disappeared before blocking palatalisation, as we see from {porośəy-} and {wolośəy-}.

and ʾə/$_e$-subjunctives (see above, p 74): {encə́y-} of *enk-* 'take', {kləwttə́ncəy-}[34] of *kləwtk-* 'turn (intr.)', {kĺencəy-} of *kləŋk-* 'doubt', {təncəy-} of *təŋk-* 'check', {trəncəy-} of *trəŋk-* 'lament', {trencəy-} of *trenk-* 'cling'.

medial palatalisation in the preterite

Medial palatalisation in *a*-preterites derived from ʾə/$_e$-subjunctives like sbj. {ak^{sə}/$_{se}$-} → prt. {akṣ-á-} of *aks-* 'announce' does not need special comments because it is completely parallel to the medial palatalisation in ʾə/$_e$-presents and subjunctives discussed above. However, there are two verbs where we find palatalisation of a different kind: *trəŋk-* 'lament' and *ləŋk-* 'hang' form root present-subjunctives {trəŋk-} and {ləŋk-}, respectively, combined with derived preterites *with* palatalisation (that is, that palatalisation is *not* found in the present-subjunctive stem), {trəncá-} and {ĺəncá-}. {cəmpya-} of *cəmp-* 'can' might be parallel, but its root-final *-p* is normally unpalatalisable, so that we would expect that <py> stands for /py/ rather than (secondary) /ṕ/.

overview

[−pal]	[+pal]	
k	*ś*	*ə*|*a*-√-prt.; caus.-prt.; ʾə/$_e$-prs./sbj. (initial); prs./sbj. (medial)
	ky	caus.-prt.
kl	*kĺ*	*ə*|*a*-√-prt.; caus.-prt.; ʾə/$_e$-prs. (initial); *ʾəy*-sbj.
ks	*kṣ*	prs./sbj. (medial); *ʾəy*-sbj.
t	*c*	*ə*|*a*-√-prt.; caus.-prt.; Ø/$_e$-sbj. (initial); ʾə/$_e$-prs. (initial)
tk	*cc*	prs./sbj. (medial); ipf.-opt.
tt	*cc*	ipf.-opt.
n	*ñ*	*ə*|*a*-√-prt. (irregular); caus.-prt.; *e*-prs. (initial); ʾə/$_e$-prs. (initial; irregular)
nk	*nś*	prs./sbj. (medial)
	nc	prt. (medial); prs./sbj. (medial); ipf.-opt.
ns[35]	*nṣ*	prs./sbj. (medial)
p	*py*	caus.-prt.
pl	*pĺ*	*ə*|*a*-√-prt. (*a*); *ə*|Ø-√-prt.; ʾə/$_e$-prs./sbj. (initial); sbj. (initial)
m	*my*	caus.-prt.
rk	*rś*	prs./sbj. (medial); *ʾəy*-sbj.
rs	*rṣ*	prs./sbj. (medial)
rsk	*rṣṣ*	prs./sbj. (medial)
l	*ĺ*	*ə*|*a*-√-prt.; *ə*|*a*-√-prt. (*a*); *ə*|Ø-√-prt.; caus.-prt.; *e*-prs. (initial); ʾə/$_e$-

[34] Since it is cited only by Thomas (1964: 189), this is possibly a ghost form.
[35] Alternates with *nt^s*.

[−pal]	[+pal]	
		prs./sbj. (initial); *ʾəy*-sbj.
lk	*lś*	prs./sbj. (medial)
	Ílk	*ə*|*a*-√-prt. (medial); *ə*|Ø-√-prt. (medial?)
lp	*Ílp*	*ʾəy*-sbj.
w	*y*	caus.-prt.
	wy	caus.-prt.
ṣp	*ṣpy*	caus.-prt.
s	*ṣ*	caus.-prt.; *ʾə*/*e*-prs. (initial; irregular); prs./sbj. (medial); *ʾəy*-sbj.
sk	*ṣṣ*	prs. (medial); sbj. (medial)
st	*śc*	*ə*|*a*-√-prt.; caus.-prt.
(*sp*	*ṣp*)	caus.-prs. (irregular)
ss	*ṣṣ*	prs. (medial)
tˢ	*tˢy*	caus.-prt.

The description of the consonant classes is more difficult for Tocharian B than for Tocharian A because there is more variation: some consonants are neutral in one category, but non-palatal in another, for instance. Of the single consonants, only *r* is always neutral, whereas *k*, *t*, *s* are always non-palatal; *c*, *ñ*, *ś* and *ṣ* are always palatal. Of the remaining consonants, *p*, *m*, *w* and *tˢ* are mostly neutral, but they have secondary palatal variants *py*, *my*, *wy* and *tˢy* in the causative preterite; *w* also has a primary palatal variant *y*, but this is so rare outside the causative preterite, that *w* is best classified with *p*, *m* and *tˢ*. *y* is mostly neutral, but it also occurs as the palatal variant of *w*. *n* and *l* are "normal" non-palatal consonants, but their palatal variants *ñ* and *Íl* are sometimes found where we expect non-palatal *n* and *l*.

Neutral *r* neutralises all clusters if it is the last consonant and it has no special effect if it is the first. Combinations of non-palatal consonants are non-palatal, with only the second consonant palatalising in the normal way in *kl*, *ks*, and both palatalising in *tk*, *sk*, *st* to *cc*, *ṣṣ*, *śc*; the geminates *tt* and *ss* palatalise to *cc* and *ṣṣ*, whereas both consonants palatalise in *nk* and *ns*, although the palatalised *n* is not distinctive before *ś*, *c* or *ṣ*; *lk* palatalises to *Ílk* in the *ə*|*a*-root preterite and to *lś* before the *ʾə*/*e*-suffix. The clusters *ns* and *ls* are noteworthy because they can receive an epenthetic *t* that does not block the palatalisation to *nṣ* and *lṣ*, i.e. this <ts> does not behave like other *tˢ* <ts>. The following clusters combining neutral and non-palatal consonants are non palatal: *pl*,[36] *lp*, *sp*; neutral is *nm* (and *ñm* as well).

Vowel grades after palatalised consonants are the following (all grades occur after non-palatal consonants as well):

[36] Although it seems to be unpalatalisable (neutral) in {pləská-}; probably, this is a morphological problem, where this stem is to be analysed as {pəlská-}, but the subjunctive as {plᵃ́/ₔska-}.

	initial	medial
ə	*ə*|*a*-√-prt.; $^{\text{'}ə}/_{e}$-prs./sbj	$^{\text{'}ə}/_{e}$-prs./sbj.; *'əy*-sbj.; *'əy*-ipf.-opt.
a	*ə*|*a*-√-prt. (*lyāka*-type); caus.-prt.	
e	*ə*|Ø-√-prt. (irregular); *e*-prs.; $^{\text{'}ə}/_{e}$-prs.	

For both languages, some very general tendencies can be noted:
– the most regularly palatalisable consonants are *k*, *t*, *s*;
– the least palatalisable consonant is *r*;
– *n* and *l* are funny in being palatalised too often;
– the categories with most palatalisation are probably the *s*-preterite of Tocharian A and the causative preterite of Tocharian B, with the *ä*|*ā*- or *ə*|*a*-root preterite as a good second in both languages;
– the most frequent vowel grade that follows palatalisation is TA *ä*, TB *ə*.

All in all, it is striking indeed that in languages where morphological palatalisation plays such an important role so many consonants cannot carry this distinction and so many others show peculiarities.

2.5.5 SUPPLETION

There are almost no defective verbs in Tocharian; that is, there are no verbs that lack certain stems such as for instance the preterite or the present. Although many verbs in Tocharian B and some in Tocharian A have no distinct subjunctive stem, these verbs are not defective because with those verbs the present is just used instead of the subjunctive (termed "present-subjunctive" in this work). Thus, verbs with a present-subjunctive are fully functional and not defective.

In contrast, suppletion is quite common in both languages, and clearly more so in Tocharian A than in Tocharian B. In most cases, suppletion follows a very regular pattern: a suppletive verb consists of two roots, one supplying the present stem, the other supplying all other stems (subjunctive, preterite, preterite participle and imperative).

Tocharian A

meaning	*present stem*	*other stems*
'lead'	{$ā^{śä}/_{ka}$-}	{wā-}
'stand'	{käĺ-}	{ṣtämā-}
'call'	{ken-}	{kāka-}
'speak'	{tränk-}	{weñ-}
'be'	{nas-}	{tāka-}
'bring'	{$pär^{ä}/_{a}$-}	{kāma-}
'go'	{y-}	{kälkā-}[37]

Tocharian B

meaning	*present stem*	*other stems*
'lead'	{$a^{śó}/_{ké}$-}	{waya-}
'stand'	{$kəʃ^{ə}/_{e}$-}	{stəma-}
'call'	{kwa-}	{kaka-}
'be'	{nes-}	{taka-}
'sit'	{$ṣəm^{ə}/_{e}$-}	{ləma-}

[37] The imperative is irregular, cf below.

Tocharian A

meaning	*present stem*	*meaning*
'drink'	{yok-}	{tˢäwkā-}
'do'	{yᵖᵃ/ₐ-}	{yām-}
'see'	{läkā-}	{pälkā-}[38]
'eat'	{śäwā-}	{tāpa-}
'sit'	{ṣämᵃ̈/ₐ-}	{lämā-}

Both languages exhibit deviating patterns for the verb 'give': the present and the subjunctive stems go together and are different from the preterite, whereas the imperative is irregular and difficult to analyse. As concerns the preterite participle, the two languages diverge: it is formed from the present-subjunctive root in TB, but from the preterite root in TA.

'give':	sbj.	prs.	prt.	prt.ptc.	ipv.sg.	ipv.pl.
Tocharian A	{āy-}	{āyˢä/ₛₐ-}	{wäs-}	*wawu*	*paṣ*	*pac*
Tocharian B	{ay-}	{ayᵴᵴᵊ/ₛₖₑ-}	{wəs-∅/ₛₐ-}	*āyu*, *āyoṣ*	*pete*	*petso*, *petes*

The word for 'rain' has a unique pattern in both languages, with a present TA {säw-}, TB {səwa-}, other stems TA *swāsā-*, TB *swasa-*. To a lesser extent, the same is true of TA *täs-*, TB *təs-* 'put'. As in both verbs the stems clearly go back to one root, they are not suppletive in my analysis, however.

In Tocharian B there are some other instances where suppletion deviates from the standard pattern, and also some instances where the suppletion is not perfect, i.e. where it is difficult to tell which stems belong to which verb. In these cases, one could possibly speak of defective rather than suppletive verbs.

TB *lək-* 'see' seems to be a fully-fledged verb, with an active sbj. {lə́ka-}, a middle prs.-sbj. {lə́ka-} and an active prs. {ləkaᵴᵴᵊ/ₛₖₑ-} (on this peculiar situation, cf 4.4.5, p 395 and Peyrot forth.d), a prt. {Ĺaká-}, and a prt.ptc. *lyelyaku*, *lyelyakoṣ*. The imperative is from a different root, however: {pᵃ́/₯lka-}, from the root *pəlka-*. Not only is it strange to have a suppletive root only in the imperative, the root *pəlka-* has other stems, too, namely a sbj. {pᵃ́/₯lka-}, a prt. {pəĹká-}, and a prt.ptc. *pälkau*, *pälkoṣ*; strikingly, *pəlka-* has no present.

	lək- (middle)	*lək-* (active)	*pəlka-*
present		{ləkaᵴᵴᵊ/ₛₖₑ-}	
subjunctive	prs.-sbj. {ləka-}	{ləka-}	{pᵃ́/₯lka-}
preterite	{Ĺaká-}		{pəĹká-}
preterite participle	*lyelyaku*, *-oṣ*		*pälkau*, *-oṣ*
imperative		{pᵃ́/₯lka-}	

[38] Irregularly, the imperative is {-läkā-}, e.g. sg.mid. *pälkār* etc (cf 2.5.5, p 78).

Tocharian B *y-* 'go' also deviates from the standard suppletive pattern: the present-subjunctive and the imperfect are formed from the root *y-*, and the preterite participle *yku*, *ykuweṣ* seems to be related to the same root.[39] The preterite is formed by two different roots, *məs-* for the singular and *məyt-* for the plural (*s*-preterite stem {meyt-} /mayt-/); although – surprisingly – some present and subjunctive stem forms of the root *məyt-* are attested, too, no preterite singular forms competing with the stem *məs-* are attested. The imperative is irregular. In Tocharian A, all stems fit a normal suppletive pattern, except for the irregular imperative.

	Tocharian A			Tocharian B		
	sg.	pl.		sg.	pl.	
present	{y-}		ipf. {ye-}	prs.-sbj. {y-}	{yən-, y-}	ipf. {yey-} = opt.?
sbj.	{kalkā-}	{kälkā-}	opt. {kälkäy-}			
preterite	{kälkā-}	{kalkā-}		{məs-}	{meyt-}	
prt. ptc.	*kälko*			*yku*, *ykuweṣ*		
ipv.	*piṣ*	*pic*, *picäs*		*paṣ*	*pcīso*	

The Tocharian B verb for 'take' follows the regular suppletive pattern except for the subjunctive stem. The present stem {pərᵊ/$_{e}$-} is supplied by the root *pər-*, but the preterite, preterite participle and imperative stems by the root *kama-*. Accordingly, one would expect the subjunctive to be {káma-}, but it is not attested. Instead, the subjunctive is supplied by the middle of *ay-* 'give' (Schmidt 1974: 360-367), which indeed has middle forms only in the subjunctive and optative and in no other stem.[40]

Within the history of Tocharian B, a new case of suppletion arose when the present and preterite stems of *yam-* 'do' lost the first syllable /ya/, so that an etymological relationship between the present and the preterite with a root *məsk-* on the one hand, and the subjunctive, preterite participle and imperative stems with a root *yam-* on the other, cannot have been visible any longer for the speakers. Since the present and the preterite had the same root, this pattern did not follow the standard suppletion type (Peyrot 2008a: 160-161):

	classical		late	vs		classical		late
prs.	{yamə́^{ṣṣə}/$_{ske}$-}	→	{mə́^{ṣṣə}/$_{ske}$-}		subjunctive	{yamə-}	→	{yamə-}
prt.	{yamə́ṣṣa-}		{mə́ṣṣa-}		prt. ptc.	*yāmu*, *-oṣ*		*yāmu*, *-oṣ*
					imperative	{-yam^{Ø}/$_{sa}$-}		{-yam^{Ø}/$_{sa}$-}

[39] For possible optative use of the imperfect, as well as the root variant *yən-*, see 4.3.4 (p 366).

[40] The meaning conveyed by the middle is also attested for voice-indifferent infinite forms, such as the gerund *ailye* (Peyrot 2008b: 96), the inf. *aitsi* (Schmidt 1974: 364-365), etc, all formed from the subjunctive stem. Thus, as far as the paradigm of *ay-* is concerned, the middle forms are unambiguously suppletive to *pər-* 'take', but the infinite forms can be "regular" forms of *ay-* 'give', too.

Suppletion has a heavy functional load in morphology, as it can override other stem distinction principles. In order to understand the formation of particular stems, it is sometimes even necessary to disregard suppletion, as it would leave us with some unique irregularities that can neatly be resolved otherwise. For instance, TA *tränk-* 'say' supplies the present of *weñ-*, but in its formation it is a subjunctive: its imperfect {crank-$^{Ø}/_{sä}$-} is only understandable as an *s*-preterite.

It has become costumary to cite suppletive verbs with the present root first, followed by other roots; thus, TB *pər-* + *kama-* (+ *ay-* [middle]) 'take' is normally listed under *p*.

2.5.6 REDUPLICATION

Reduplication is regularly found in certain preterite participles in both languages, and in the causative preterite in Tocharian A. In addition, it is found in one subjunctive formation in Tocharian B. Reduplication follows one formal pattern: a syllable starting with the same initial as the root, followed by a vowel, is prefixed to the root. In the majority of cases, the root initial is simple (i.e. a single consonant) and the reduplication syllable has exactly the same initial. If the root initial is a cluster, it is mostly only one of two[41] that is the initial of the reduplication syllable, in Tocharian A always the first consonant, in Tocharian B mostly.

Even though the Tocharian A reduplication in the causative preterite often combines with initial palatalisation, it carries a heavy functional load, since the corresponding non-causative preterite may have initial palatalisation, too. The category that offers a good range of exact minimal pairs is the singular of the grading *ä|ā*-root preterite, e.g. 3sg. *śaśärs* {śa-śärsā-Ø} '(s)he let know' vs *śärs* {śärsā-Ø} '(s)he knew', 3sg. *papärs* {pa-pärsā-Ø} '(s)he let sprinkle' vs *pärs* {pärsā-Ø} '(s)he sprinkled', 3sg. *raritu* {ra-ritwā-Ø} '(s)he connected' vs *ritu* {ritwā-Ø} '(s)he was connected', 3sg.suff. *lyalymā-ṃ* {ĺa-ĺämā-n} '(s)he put it' vs *lymā-ṃ* {ĺämā-n} '(s)he sat down on it', 3sg. *śaśśäm*, *śaśäm* {śa-(ś)śämā-Ø} '(s)he established' vs *śäm* {śämā-Ø} '(s)he stood up'. In the plural, the grading *ä|ā*-root preterite has *a*-grade, so that we do not find exact minimal pairs in the plural, e.g. 3pl. *sasätkār* {sa-sätkā-r} 'they extended (tr.)' vs *satkar* {satkā-r} 'they were spread out'. Thus, preterite reduplication principally distinguishes causative preterites from non-causative preterites; the differences with other categories are much larger, e.g. the subjunctive not only lacks reduplication, it generally also has a different suffix, different endings, no palatalisation and a different root grade.

The form of Tocharian A preterite reduplication is relatively easy to describe. The reduplication vowel is always *a*, except when the root starts in *y* or *w* and the vowel *ä*: in that case, *ay* and *aw* surface as *e* and *o*, respectively. Thus we find

[41] Three consonant initials are not attested.

1sg.mid. *yete* {ya-yätā-e} 'I adorned', 3pl. *wotār* {wa-wätā-r} 'they set up', whereas 3sg. *wawik* {wawikā-Ø} '(s)he removed' and 3pl. *w(a)wiwār* {wawipā-r} 'they made wet' keep their *aw* because of the following *i*. Instead of the attested 3sg.mid. *yairāt* {ya-yärā-t} MY3.8a5 '(s)he bathed' we would rather have expected *yerāt**. In the case of 2sg. *wotkaṣt* {wa-wätkā-ṣt} 'you commanded' and 3pl. *wortar* {wa-wärtā-r} 'they threw', the root-final *ā* is weakened to *a*, apparently as if the stems contained no reduplication (1sg.mid. *wose-ṃ* MY3.8a3 'I dressed her' may reflect either *wosa-* or *wosā-* {wa-wäsā-e}). The reduplication initial is the first consonant of the root, i.e. *s* for *sp* and *sr*, *p* for *pl* and *pr*, *t* for *tr*. The initial *py* may count as a cluster, as it is reduplicated with *p*, too; the digraph *ly* stands for a single consonant /Ĺ/ and, accordingly, it is reduplicated with *ly* /Ĺ/.

In both languages, the reduplication of the preterite participle has much less distinctive value because it is sufficiently marked by its suffix and its endings. In Tocharian A, the only ending of the preterite participle that recurs as a finite verbal ending elsewhere is the nom.sg.m. in *-u* (not its morphological variant *-o*). The finite ending *-u* in Tocharian A is a relic variant next to the regular *-wā* for the 1sg. of the *s*-preterite (Schmidt and Winter 1992). Since the *s*-preterite normally has *a*-grade, where the corresponding preterite participles have *ä*-grade, reduplication is only co-distinctive. This type of contrast is rare, also because the 1sg. ending *-u* is rare, of course, cf 1sg. *raku** {rak-u} vs ptc. *rarku* {ra-räk-u}, or 1sg. *praku** {prak-u} vs ptc. *papärku* {pa-präk-u}, where there is always an additional difference between *a-* and *ä*-grade.

The only verb I could find with a possible exact minimal pair is *mäsk-* 'be', which forms an *s*-preterite (3sg. *mäskäs*), and apparently a participle *mamäsku*, so that we could expect a minimal pair 1sg. *mäsku** vs ptc. *mamäsku*; however, it is not totally certain that *mamäsku* actually is the participle to the *s*-preterite. Strikingly, there are some ambiguous forms that lack reduplication. If they had been reduplicated, it would have been distinctive: the participles *aru*, *yāmu*, *epu* and *yomu* have an *s*-preterite beside them and the relic 1sg. would have exactly the same form.

A largely comparable, but not identical situation is found in Tocharian B. In Tocharian B, both nom.sg.m. endings of the participle, *-u* and *-au*, recur as finite endings, in principle both in the present and the subjunctive; in practice, only subjunctives offer minimal pairs or near minimal pairs. In the majority of cases, we do *not* find minimal pairs, as there is often a difference in ending (e.g. 1sg. *weñau* {weñ-e-w} 'I will say' vs ptc. *weweñu* {we-weñ-əw}), in root grade (e.g. 1sg. *preku* {prekə-w} 'I will ask' vs ptc. *peparku* {pe-prək-əw}, 1sg. *yopu* {yopə-w} 'I will enter' vs ptc. *yaipu* {ye-yəp-əw}, 1sg. *kewu* {kewə-w} 'I will pour' vs ptc. *keku** {ke-kəw-əw}).[42]

[42] Similarly, a difference in root grade and accent may mark the distinction in unreduplicated preterite participles, e.g. 1sg. *sraukau* {sráwka-w} 'I will die' vs ptc. *srukau* {srəwká-w}, 1sg. *tsāṅkau* {tˢánka-w} 'I will rise' vs *tsäṅkau* {tˢənká-w}.

Systematic minimal pairs are found with root subjunctives to both *a*|Ø-roots and *a*|*a*-roots. Of the first category no minimal pairs are attested, but we could expect 1sg. *plāku** 'I will agree' vs ptc. *paplāku*, 1sg. *nāku* 'I will reproach' vs ptc. *nanāku* etc, whereas the second category is well represented indeed: 1sg. *kārpau** 'I will descend' vs ptc. *kakārpau*, 1sg. *kraupau** 'I will gather' vs ptc. *kakraupau*, 1sg. *klāyau** 'I will fall' vs ptc. *kaklāyau*, 1sg. *tākau* 'I will be' vs ptc. *tatākau*, 1sg. *spārttau* 'I will turn' vs ptc. *paspārtau*, probably 1sg. *skārau* 'I will scold' vs ptc. *kaskārau*,[43] etc. In addition, there are two incidental cases: 1sg. *śū* 'I (will) eat' vs ptc. *śeśu* and 1sg. *neku* 'I will destroy' vs *neneku* next to expected *nenku* (on these variants, cf Peyrot 2008a: 152-153). Since the root grade of 3sg. *kowän* '(s)he will kill' is unique, it is difficult to tell whether the unattested 1sg. would be *kowu** or *kāwu**; in the latter case, it would be a minimal pair with the ptc. *kakāwu*. Ambiguous forms are the unreduplicated *aunu* 'I will hit; hit', *yāmu* 'I will do; done',[44] *āksau* 'I will proclaim; proclaimed', *āyu* 'I will give; given', *ālu* 'I will keep away; kept away', although with the exception of *yāmu*, both functions are not attested with certainty for any of them.[45]

Theoretically, the 1sg. of the *s*-preterite could form minimal pairs with the feminine plural of the participle, but minimal pairs of this type are not attested, certainly also because the feminine plural of the participle is much less frequent than the nom.sg.m. It seems that here, as with the nom.sg.m., there are no minimal pairs because there is normally a difference in root grade, e.g. 1sg. arch. *yonwā* {yonm-wa} 'I have obtained' vs ptc. *yainmwa* {ye-yənm-wa} or 1sg. *prekuwa* {prek-wa} 'I have asked' vs ptc. *peparkuwa** {pe-prək-wa}. An ambiguous form would be e.g. *aipuwa* 'I have covered; covered' (attested in none of the two functions).

It must be stressed that the distinctive value of reduplication is much less important in syntax with the Tocharian B *wa*-forms than with all the others because in active use the subjects are always different: 1sg. vs f.pl. Thus, *prekuwa* 'I have asked' will have been clearly distinct from *peparkuwa* 'they (f.) have asked' in syntax

[43] None of the two is attested with certainty, but *k(a)skārau* or *k· skārau* IT524b1 must be at least one of them.

[44] Theoretically, IT92b3 *ñiś te ñemtsa pañäkte saim yāmu* 'I, with the name so and so, have made (will make) the Buddha my refuge' is ambiguous, but the context shows that it is clearly *not* subjunctive, since it follows IT92a4 *ñiś te ñemtsa pañäkte saim yamaskemar* 'I, with the name so and so, make the Buddha my refuge'. In this particular case, we even happen to have the Sanskrit formulae: *gataḥ* '[I have] gone' for *yāmu* (Härtel 1956: §4 on p 51, §6 on p 53) and *gacchāmi* 'I go' for *yamaskemar* (Härtel (1956: §4 on p 51, §6 on p 53). Cf the same text in Cp40-42b1-4 (Pinault 1994: 102-106).

[45] Whether *ālu* IT11a1 is a 1sg.sbj. form or a prt.ptc. has been the subject of a long discussion. It was unclear whether *al-* 'keep away' formed a root subjunctive or an *'əy*-subjunctive, so that a 1sg.sbj. *ālu* would tip the scales in favour of a root subjunctive, whereas it had to be a prt.ptc. if the verb rather formed an *'əy*-subjunctive. Since the forms adduced as *'əy*-subjunctive forms can all be explained as optatives, *al-* must have formed a root subjunctive. Consequently, *ālu* is morphologically ambiguous indeed, although it is probably a participle in IT11a1 (cf Malzahn forth.b).

(if passive, the participle may have a 1sg. agent, but this would probably be marked explicitly, i.e. '(the things) have been asked by me'). On the other hand, the Tocharian B *u*- and *au*-forms sometimes differed only in tense and aspect: *yāmu* 'I will do; I have done', so that the functional load of the reduplication syllable was much larger. In Tocharian A, the situation is even more delicate, since the *u*-forms both denote a past tense and the difference in aspect may have been very slight, so possibly *yāmu* 'I have done' (1sg. prt.), 'now I have done' (ptc.).

The description of the form of the preterite participle reduplication is for both languages more complicated than for the Tocharian A reduplicated preterite because there is more variation. In addition, a major point to address is when the reduplication is there and when it is not. Since the latter question goes beyond the synchronic description of reduplication, it is discussed under the formation of the preterite participle (see 2.9.2, p 149).[46]

In Tocharian A, the reduplication vowel has two basic shapes: /a/ and /ā/. The surface root vocalism of the preterite participles is mostly *ä*,[47] but the heavy reduplication vowels *a* and *ā* can cause vowel weakening in the root. Consequently, the surface vowel *ä* need not be identical with the underlying root vocalism. Whether the reduplication vowel is *a* or *ā* can be predicted on the basis of the underlying root vowel.

If the underlying root vowel is *ā*, the reduplication vowel is *ā*, too, and other *ā* vowels are reduced to *ä*, except for roots with *y* and *w* diphthongs, where we find *e* and *o* in the root: *pāplu* {pā-pālā-w}, but *pāpeku* {pā-pāykā-w}. Sequences *āy* and *āw* are not affected by monophthongisation, e.g. *yāyru* {yā-yārā-w} or *wāwlu* {wā-wālā-w}. *e*-reduplication is found only in *wewñu* {we-weñ-w} of *weñ*- 'speak' (suppletive prs. *tränk*-). If the underlying root vocalism is *ä* or *a*, the reduplication vowel is *a*, e.g. *kaklyuṣu* {ka-klyawṣ-w}, *kakätwu* {ka-katw-w}, formed to roots that otherwise have *a*-vocalism throughout. Of many other roots, it is difficult to see what the underlying root vocalism is, since they have other stems with *ä*-grade beside it. Because of the close relationship between preterite and preterite participle, however, it is very likely that next to non-grading preterites like *pakät* and *nakät* the participle has *a*-grade in the root, e.g. *pakku* {pa-pak-w} (with *-kk-* from *-pk-*) and *nanku* {na-nak-w}. In some other cases, like *kʷäm*- 'come', which has only *ä*-grade in all stems, it is more probable that the participle has *ä*-grade, too: *kakmu* {ka-kʷäm-w}. There are some participles with an onset *wo*- and one with *ye*-, but their root vocalism is not entirely clear; the easiest is to assume that they reflect underlying *ä* or *a*. The hapax legomenon *yaiwu* A320a3 'entered' to the *s*-prt. *yowäs* is difficult to analyse: I would rather have expected ***yewu*.

[46] On the formation of the preterite participle, cf in general Peyrot (forth.a).

[47] Except for some roots with *ā*-reduplication and a root vowel *e* or *o*, and some roots starting in a vowel or one of the glides *y* and *w*.

The reduplication initial is identical to the root initial if it is a single consonant (including *ly* /Ĺ/); otherwise it is always the first consonant that is reduplicated. We find: *k* for *kr*, *kl*, *kly*; *c* for *cp*, *cr*; *t* for *tr*, *tw*; *p* for *pr*, *py* (cf above), *pl*; *m* for *mr*; *ś* for *śp*; *ṣ* for *ṣt*,[48] *ṣp*; *s* for *sn*, *sp*, *sr*.

The description of the reduplication vowel in Tocharian B is relatively easy: it is *a* before *a* (including *ai* and *au* standing for {ay} and {aw}), *o* before *o*, *e* before *e* (including *au* standing for {ew}) and *e* before *ə* (including /əy/ and /əw/, of course). The rules behind the distribution of especially the root vowels *e* and *ə* belong to the description of the preterite participle proper.

Just like in Tocharian A, the reduplication initial in Tocharian B is identical to the root initial if it is a single consonant (including *ly* /Ĺ/). However, the rules for clusters are slightly more complicated. If the second consonant is a resonant, it is the first that is reduplicated: *k* for *kr*, *kl*, *kly*; *t* for *tr*, *tw*; *p* for *py*, *pr*, *pl*, *ply*; *m* for *mr*; *w* for *wl*. If the second consonant is a stop, that is, effectively only when the first consonant is *ś*, *ṣ* or *s*, the whole cluster is reduplicated in case of *st* and its palatalised pendant *śc*, but the second consonant is reduplicated in case of *ṣp* and *sp* (i.e. *p*), and possibly *sk* (i.e. *k*). A complication is found with the initial *w*-, since it is lost before the reduplication vowel *e* in the context *wewə*: *ausu* {we-wəs-(ə)w}, *aultsu* {we-wəlts-(ə)w}, *auṣu* {we-wəṣ-(ə)w}. It is preserved in *wewinäṣṣu* and *weweñu*, and in all forms with *a*-reduplication, e.g. *wawlāwau*.

2.5.7 ACCENT[49]

Accent is only detectable in Tocharian B, where it plays an important role in the morphological distinctions in the verb. There may have been accent movements in Tocharian A as well, but the accent can only be inferred in an indirect way and it is impossible to tell whether there were minimal pairs. A pair such as 2sg.sbj. *krasat* 'you will know' and 3sg.prt.mid. *kärsāt* 'it was known' certainly reflects a difference in accent at a certain stage, i.e. /krásat/ from **krásāt* vs /kärsā́t/ from **kräsā́t*, but it is possible that the accent was moved forward or backward after vowel weakening had become phonemic. It is even possible that there were tonal distinctions, for instance in a word like *tāṣ*, which has three different meanings: 3sg.prs. '(s)he puts' for {tāṣä-ṣ}; 3sg.sbj. '(s)he will be' of the shortened variant of the subjunctive stem {tāka-}; the obl.f.sg. proximal demonstrative pronoun, apparently *tā-ṣ*. However, even if there were accentual or tonal differences, there is no way to establish them from the script, so that this must all remain conjecture.

In Tocharian B, the accent is detectable from the spelling of the vowels /ə/ and /a/ (not before /y, w/): unaccented /ə/ and /a/ are spelled <ä> and <a>, and accented they are spelled <a> and <ā>, respectively. Several difficulties may arise, as a word

[48] If *ṣāṣtru* MY2.8b3 reflects {ṣā-ṣtār(ā)-w}.

[49] Cf in general Marggraf (1970).

may have no *a*- or *ə*-vowels, or the relevant syllables do not have them; sometimes the quality of the vowels is not known, so that e.g. <a> could be either accented /ə/ or unaccented /a/; in a certain group of manuscripts, namely archaic texts, the accent is not expressed (cf Peyrot 2008a: 33-41). However, archaic texts have the advantage that they mostly give unambiguous evidence as to the quality of the vowels /ə/ and /a/, so that archaic spellings can be helpful in combination with classical spellings.

A serious complication with the accent is that it has two manifestations: a phonological surface form and an underlying morphological form. This difference is caused by an accent retraction by one syllable from final syllables ending in a vowel or simple *n*. Thus, it appears that all preterite forms of 'be' have suffix accent, e.g. the morphological stem is {taká-}; this accent is seen in e.g. 1sg. *takāwa* {taká-wa}, 2sg. *takāsta* {taká-sta} or 3sg.suff. *takā-ñ* 'it was to me' or 'I had' {taká-ñə}. However, in the 3sg. the accent is retracted: *tāka* '(s)he was' is phonologically /táka/ but morphologically {taká-Ø}. The combination of the limited detectability of the phonological accent and the difference between the phonological and the morphological accent may make it difficult to establish the morphological accent of certain forms. In general, however, the accent has only a limited number of patterns and often it seems justified, therefore, to deduce the accent for forms that do not exhibit it themselves.

Although stem-internal accent movements exist, these are restricted to the phonological level (Marggraf 1970: 17). All morphological accent movements distinguish different stems of one verb, or a causative stem from a non-causative one.

When different stems of one verb are distinguished by the place of the morphological accent, it is always the subjunctive that goes together with the imperative in having root (initial) accent, whereas the preterite has suffix (medial) accent; the present stem is never distinguished by a difference in accent. The clearest accent pattern is found with *x*|*a*-root subjunctives and preterites and with some subjunctives and preterites with an *a*-suffix. A typical pair of stems distinguished by a difference in accent is sbj. {táka-} of *taka-* (prs. *nes-*) 'be' vs prt. {taká-}. In most cases, the endings of the subjunctive and the imperative are different from those of the preterite, but in these classes, the 1pl.sbj. and 1pl.prt. are never distinguished by anything other than the accent: 1pl.sbj. *tākam* 'we will be' {táka-mə} vs 1pl.prt. *takām* 'we were' {taká-mə}. Certainly less frequent were pairs like 2sg.sbj. *kautat* 'you will chop' {káwta-tə} vs 2pl.prt.mid. *kautāt** {kawtá-tə} 'you chopped for yourself'[50] – often the 2sg.sbj. would have had *a*-grade vs *ə*-grade in the preterite: 2sg.sbj. *kālat* {kála-tə} vs 2pl.prt.mid. *klāt** {kəlá-tə}.

Since the 3sg.prs. ending {n} is sometimes not written before e.g. the 1sg. pronoun suffix {ñə}, the difference may have disappeared in speech, too, so that *takā-ñ* {taká-ñə} 'I had' differed only in accent from *tāka-ñ* {tákan-ñə} 'I will have'. In im-

[50] Obviously, these pairs were rare because the verb had to have a contrastive middle, and because the 2pl. was rare in general.

peratives to verbs with initial *p-*, or late forms that have lost the imperative prefix (cf Peyrot 2008a: 62), some additional minimal pairs must have been there: e.g. sg.ipv. suff. *tāka-ñ** 'be for me' {(p)-táka-ñə} vs 3sg.prt.suff. *takā-ñ* 'I had' {taká-ñə}; pl.ipv. *karsas** 'know' {(p)-kə́rsa-sə} vs 2pl.prt. *kärsās** 'you have known' {kərsá-sə} pl.ipv. mid. *kraupat** 'gather' {(p)-kráwpa-tə} vs 2pl.prt.mid. *kraupāt** 'you have gathered' {krawpá-tə}. With the late 3pl.prt. ending *-r* for classical *-re* we could in addition expect a pair like sg.ipv.mid. suff. *kautar-ne** 'chop it/ him for yourself' {(p)-káwta-r-ne} vs 3pl.prt. suff. *kautār-ne** 'they have chopped it/ him' {kawtá-r-ne}. As will be immediately clear from the many deduced and typically infrequent forms (such as the 2pl.) among the above minimal pairs, accent only rarely distinguishes different stems by itself.

Not all *a*-subjunctives and *x*|*a*-root subjunctives have initial accent. There seems to be a simple rule: if the root has stable *ə*, the subjunctive has suffix accent; if the subjunctive has *a*-grade or *a* : *ə* gradation, it has root accent. There is a considerable group of verbs with *ə*-vocalism in the root for which this distribution cannot be proved independently, but where possible *a*-grade forms are not attested; on the basis of the accent, they can be assumed to have had the same pattern. Of yet another group of verbs the morphological accent of the subjunctive stem cannot be established with the attested forms. The following subjunctives show a deviating pattern:

kəsk- 'scatter', sbj. {kᵃ/əská-}: the final accent is shown by 3sg.mid. *käskāträ* and sbj.ger. *käskālläñ̈e*; the *a*-grade form is 2sg. *kāskat*;

tˢəma- 'grow': a sbj. stem {tˢəmá-} fits all subjunctive stem forms, e.g. 3pl.mid. *tsmāntär*, inf. *tsmātsi* and vn *tsmālñe*, except the isolated 2sg. *tsāmat*. Since the latter form is very uncertain, perhaps no *a*-grade forms are attested at all;

nəwa- 'roar', sbj. {nə́wa-}: the initial accent is shown by vn *nūwalñe* (2x) and *nuwalñe* (2x), whereas *nwalñe* (2x) is an "accentless" verse form. The problem with this verb centres on an apparent 3sg. *nuwaṃ* AS7Ma4, but since the syntax is difficult, it might perhaps be a 3pl., in which case the 3sg. could still have been *nauwaṃ** with full grade;

tˢaka- 'bite', sbj. {tˢaká-}: the stem is not well attested, but its ger. *tsakāll·* IT363b2 and *tsakālla* THT1158a3 seem to point to *a*-grade combined with suffix accent.

The following two verbs are well attested as middle only verbs, so that it is not very likely that their initial accent can be explained by gradation, since these subjunctives were probably never grading: {rə́yta-} of *rəyta-* 'seek' and {wə́rpa-} of *wərpa-* 'enjoy'. Nevertheless, these verbs might in some way have belonged to the same general pattern, even with the crucial forms lacking – perhaps the actual reason for the distribution is something that we can detect only indirectly through the attestation of *a*-grade.

Thus, the initial accent of the subjunctive and the imperative distinguishes them from the preterite stem, which is otherwise often identical. Generally, it does *not* distinguish certain subjunctive types from others.

A very similar accent pattern is found in the *s*-preterite and the *x*|Ø-root subjunctive. In the preterite, the accent is normally mobile. Since this mobility always follows one pattern, it is not contrastive: it seems that one underlying accent can account for all accent movements, and in some forms the accent moves away from its original locus. This underlying accent seat is the *ə* that follows the root, i.e. 1sg. *prekuwa* {prek-ə́-wa}, 2sg. *prekasta* {prek-ə́-sta}, 3pl. *prekar* {prek-ə́-r}. In the 3sg., the *ə* is syncopated and the accent is retracted by a specific morphophonological rule that is seemingly independent from the retraction from final syllables: *preksa* {prek-ə́-sa-Ø} > /préksa/. In one form, the medial accent is preserved: *yonmasa* {yonm-ə́-sa-Ø}. The regular retraction in the 3sg. is not "undone" by a suffixed pronoun: *preksa-ne* '(s)he asked him/ her' {prek-ə́-sa-Ø-ne} /préksane/. In the middle paradigm, all forms have the suffix *sa*, but the accent is always on the root, e.g. 1sg. *temtsamai* {tem-ə́-sa-may} /témtˢamay/, 3sg. *temtsate* {tem-ə́-sa-te} /témtˢate/, 3pl. *temtsante* {tem-ə́-sa-nte} /témtˢante/.[51]

Thus, the *s*-preterite has underlying suffix accent. The corresponding subjunctives and imperatives, however, always have consistent root accent. We find stem accent contrasts like sbj.sg. {prék-} vs prt. {prek-ə́-} of 'ask' or sbj.sg. {yóp-} vs prt. {yop-ə́-} of 'enter' etc. Since in grading subjunctives the plural has *ə*-grade, we do not find minimal pairs for e.g. the 1pl.: this would probably be sbj. *parkäm** {prə́k-ə-mə} vs prt. *prekam** {prek-ə́-mə} with a difference in root grade. The only category where minimal pairs must have occurred, are the non-grading *a*|Ø-roots, i.e. 1pl.sbj. *kāwäm** {káw-ə-mə} vs 1pl.prt. *kawam* {kaw-ə́-mə} of 'kill' or 1pl.sbj. *plākäm** {plák-ə-mə} vs 1pl.prt. *plakam** {plak-ə́-mə} of 'agree'.

The remaining accent patterns all concern the causative. In the causative, the accent does not distinguish stems from each other; rather, it may distinguish a causative stem from the corresponding stem of a non-causative verb. Apart from the preterite participle, all stems show initial accent.

The *ˢˢᵊ*/*ske*-present-subjunctive of the causative has root (initial) accent, whereas other *ˢˢᵊ*/*ske*-presents or present-subjunctives have medial accent. Sometimes this leads to minimal pairs, as in 3sg.mid. *tänmasträ* /tənmástrə/ '(s)he is born' from prs. {tənmáˢˢᵊ/ske-} vs 3sg.mid. *tanmästä*(*r*) /tánməstər/ '(s)he produces' from prs. {tánməˢˢᵊ/ske-}. It is very difficult to find more of such precise minimal pairs, but we can deduce some of them at least: 3sg.mid. *aklastär** /aklástər/ '(s)he learns' vs 3sg.mid. *āklästär* /áklәstər/ '(s)he teaches'; 3sg.mid. *aunasträ* /awnástrə/ '(s)he begins' vs 3sg.mid. *aunästrä** /áwnəstrə/ '(s)he lets begin'. In many other cases, there is not only a difference in accent, but a difference in vocalism, too, cf 3sg. *kälpāṣṣäṃ*

[51] A different diachronic account is offered in 4.5.5 (p 413).

{kəlpáˢˢᵊ/ske-} '(s)he obtains' with medial /a/ vs 3sg. *kalpäṣṣäṃ* {kálpəˢˢᵊ/ske-} '(s)he lets obtain' with medial /ə/.

Although the causative preterites also have a marked initial accent, this never yields minimal pairs. There are two types: a "strong" type and a "weak" type. In the strong type, the root vowel is *a*, but this type is only formed with gradable roots, so that normally the corresponding non-causative preterite not only has a different accent, but also a different root grade, i.e. 3sg.suff. *śärsā-ñ* '(s)he has known me' {śərsá-ñə} vs 3sg.suff. *śārsa-me* '(s)he has let them know' {śársa-me}. The only gradable root that has *a*-grade in the non-causative preterite and for which a causative is attested beside it, *ləka-* 'see', prt. {ĺaká-}, forms a weak causative preterite {lə́kəṣṣa-}, so that no strong causative preterite is distinguished by the accent alone. The weak type is formed to non-gradable roots from the present-subjunctive stem. Because this pattern is very rare in non-causative verbs – actually only found in *yam-* 'do', prt. {yaməṣṣa-} – it does not yield minimal pairs either: the initial accent is marked, but there are no corresponding forms with medial accent (a causative of *yam-*, where one could expect a prt. {yáməṣṣa-}, is not attested).

On the evidence of pl.ipv. *päñarkas* {p(ə)-ñə́rka-sə}, the imperative to the strong causative preterite also has initial accent, but since the corresponding non-causative imperatives as a rule have initial accent as well, the accent is never distinctive here. In some verbs it seems that the difference with the non-causative imperative is rather initial palatalisation, although exact minimal pairs are lacking: pl.ipv. *pkalas* 'bring' {p-kə́la-sə} vs pl.ipv. *pśalas** 'let bring' {p-śə́la-sə} (attested is possibly a *śālāt*, difficult to analyse because of the deviant vocalism). The imperative of non-causative 'stand' is not attested, whereas the verb as such is well known, which may point to a systematic gap, probably because of pragmatics. Otherwise, we would have a similar contrast there: pl.ipv. *pästamas** 'stand' {p(ə)-stə́ma-sə} vs pl.ipv. *päścamas** {p(ə)-ścə́ma-sə} 'let stand'. The imperative to the weak causative preterite has initial accent as well, but it has no non-causative counterpart, so that there are no minimal pairs.

To sum up, accent that distinguishes between verbs is only found between non-causatives and causatives. The causative accent is clearly marked vis-à-vis the non-causative accent, but minimal pairs are only found in the present, and even there the number is relatively small.

2.5.8 GEMINATION[52]

In both Tocharian languages, a small number of verbs show alternations of simple and double consonants. Three types can be distinguished:

1) double *rr* or *ll*, probably going back to combinations of *r* and *l* with *n*, i.e. *rn* and *ln*, respectively (in some cases an additional consonant is lost before the *n*);
2) double *tt* in the *ṅk*-variant of nasal infix verbs in Tocharian B;
3) double stops reduplicated preterite participles.

Of these three types, 2) and 3) are certainly not morphologically distinctive, but 1) might be distinctive in Tocharian B.

In both languages, we sometimes find the geminates *rr* and *ll* where we expect to find *rn* and *ln*. It seems that the instances in Tocharian A can be analysed as variants of *nā*-presents, since the verb patterns are not different from normal *nā*-presents: gemination can be analysed as a morphophonological rule. However, in Tocharian B some verbs with *rr* and *ll*, which go back to *na*-presents as well, differ from normal *na*-presents in their formation patterns. Thus, apparently the geminates did not function as automatic variants of *rn* and *ln* any longer.

In Tocharian A only three verbs with gemination are attested, all with *ll*:[53]

kälā- 'bring': this seems to be a regular *nā*-prs. {kälnā- → källā-} with a grading sbj. {k$^{a}/_{ä}$lā-};

pälā- 'praise': the prs. {pällā-} is distinguished from e.g. the sbj. {pāla-} both by the geminate *ll* and the root vocalism *ä*;

wäl- 'die': the prs. {wälläṣä/$_{sa}$-} has a geminate *ll* vs single *l* in the *a*-sbj. {wäla-}; the stem pattern fits other *a*-subjunctives that form *näṣä/$_{sa}$*-presents, so that we can analyse {wälläṣä/$_{sa}$-} as {wäl-näṣä/$_{sa}$-}.

[52] This section is about the position of geminates in verbal morphology only. Actually, there is some fluctuation between geminates and single consonants (predominantly stops) in both languages, and notably in Tocharian B. In most cases, the geminate seems to be original whereas single writings have to be explained, but the opposite is certainly also found. In my view, the spelling variation with double consonants and the phonology and phonetics behind it deserve a special investigation, especially for Tocharian B. In this section, I focus on "certain" geminates, i.e. geminates that are well attested (if not, I discuss the value of the attestations).

[53] The assumption of *rr* in inf. *yä(rn)āssi* or *yä(rr)āssi* A227/8a2 (Hackstein 1995: 318) is of course uncertain as apparently another form of the same verb shows *rn*: *sāt wäryo yärnā*/// THT1154a3.

In Tocharian B we find:[54]

pəla- 'praise': the present stem deviates from all others in having *ll*, {pəllá-}, but also in its root vocalism, cf sbj. {pála-};

skəra- 'scold': the present stem {skərrá-} (prs.ptc. *skärrāmane*) is distinguished by its double *rr* and the *ə*-vocalism in the root vs *a* in the other stems, e.g. sbj. {skára-} (inf. *skāratsi*);

kəla- 'bring': this verb resembles the standard pattern of nasal presents, with a grading sbj. {kᵃ́/ₔla-}, but the prs. is not only characterised by the doubling of the *l* (from *ln*), but also by a $^{śśə}/_{ske}$-suffix: {kəllá$^{śśə}/_{ske}$-};

təla- 'lift': the paradigm of this verb is only imperfectly known. Apparently the double *ll* is found in all stems, but it must have arisen through suffixation because the derived causative has only simple *l*. In this case, the geminate *ll* does not (co-)distinguish a particular stem, but the non-causative from the causative;

məla- 'oppress': if the prt.ptc. *m(a)mālo(ṣ)* B159b6 belongs here, the double *ll* co-distinguishes the prs. and the sbj. from the prt.; the prs. {məllá$^{śśə}/_{ske}$-} is marked with a $^{śśə}/_{ske}$-suffix vis-à-vis the sbj. {malla-} (probably {málla-}) *and* the *ə*-vocalism in the root;

təra- 'appease' (?): the prs.ptc. *tärraskemane*, probably built from a prs. {tərra$^{śśə}/_{ske}$-}, may reflect *rr* from *rn* – no further forms are attested so that other stems are unknown;

kəlpa- 'obtain': this verb deviates slightly because its geminate *ll* alternates with *lp*, so that it must go back to *lpn*, and because the geminate is found in the sbj. {kəllá-} only, whereas the prs. {kəlpá$^{śśə}/_{ske}$-} is formed from the root with a $^{śśə}/_{ske}$-suffix.

In my view, type 1) is not morphologically distinctive in Tocharian A because the verbs with gemination pattern in exactly the same way as *nā-* or *näᵏ́ä/ₛₐ*-presents, and accordingly, they can be analysed as special variants of these presents. In Tocharian B, the situation is different, as all verbs with gemination deviate in one way or other from standard patterns. I take these deviations to mean that the geminates were no longer felt to contain a morphological element *n*, so that restructurings were needed. Whether this means that gemination is morphological in Tocharian B is not an easy matter. Gemination was certainly never the only distinctive factor, precisely because the stems in question were recharacterised; however, it was not removed, but kept as a co-distinctive feature. In *kəla-* 'bring', the synchronic derivation of the geminate *ll* from *ln* even needs the assumption of an isolated present suffix {na$^{śśə}/_{ske}$}, so that *ll* is perhaps best analysed as a morphological irregularity.

Type 2) is fully concomitant with the category of *ṅk*-presents and as such it was never morphologically distinctive (see also 2.5.1, p 53).

[54] The existence of a present {stallə́$^{śśə}/_{ske}$-}, which would also contain *ll* from *ln*, is doubted by Malzahn (forth.b).

Type 3) is again different. It is found in both languages, but the conditions are not fully clear. The consonants concerned are *k*, *c*, and *t* before resonants in Tocharian A and principally *c*, *ś*, *ṣ* and *tˢ* (not before resonants) in Tocharian B.

In Tocharian A we find reduplication in two categories: the reduplicated preterite and the reduplicated preterite participles. However, gemination of the root-initial consonant is found only with preterite participles and never in reduplicated preterites.[55] "Real" morphologically determined gemination is found with *kñ*, *tr*, *cr* and once with *k*:

kākkñäñ̈ñu A218b4 to *knā-* 'know' with a prt. {kñāñ̈ñā-}, attested only once;
caccrīku A220b4 to *träyk-*caus. 'confuse'
tatträṅku to *tränk-* 'hang' with a prt. {tränk-$^{Ø}/_{sā-}$}, attested three times with a geminate (A456a3, A226a2, A226a5) and two times without (A30b3, A254a2; the preterite is not attested);
tattripu A455a4 with geminate must be a variant of (*ta*)*triwu* A423b1 with simple *t* (the preterite is not attested).

The following preterite participles have geminates of a different origin:

pakku- of *päk-* 'boil' is well attested with geminate *kk* and once without: *paku* A154b2. The *kk* goes back to *pk*, as the expected morphological shape is {pa-päk- w} or even {pa-pak-w}, where the /ä/ from {a} was syncopated;
kākku of *kāka-* 'call', suppletive to *ken-*, is well attested with geminate *kk* and once without: *kākuräṣ* A396b2. The *kk* is to be explained by regular syncope from {kā-kākā-w};
tāppu of *tāp-* 'eat', suppletive to *śäwā-*, owes its geminate to *ā*-syncope in {tā-tāpā-w} and so it goes back to *tp*.

The gemination in Tocharian A preterite participles is difficult to capture under one rule. A condition seems to be that the root initial cluster consists of an obstruent (or stop, if this includes /c/) and a resonant, but the few examples we have do not belong to one morphological category and there are many verbs with the same phonological environment that do not have it.

The situation in Tocharian B is different (cf in general Winter 1994a: 302-303). As a phonological pattern, we find that only single obstruents have geminate variants, i.e. *k*, *c*, *t*, *ś*, *ṣ*, *tˢ*. Another important difference is that gemination is clearly centred round the participles to causative preterites. Finally, there are much less variants than in Tocharian A: the gemination seems to be systematic.

[55] A geminate *śś* is found once in the reduplicated preterite {śaśśäm(ā)-} of *ṣtäm-*caus. 'establish', 3sg. *śaśśäm* MY1.7b7 vs e.g. 3sg. *śaśäm* A332a4, 2sg. *śaśmāṣt* A56a6. This geminate may reflect the length of the unpalatalised *ṣt* instead of being morphological – cf also the ipv.sg. *päśśäm* A256a4.

In the participles to causative preterites we find:

ceccalor (abstr.) B81b5 to *təl*-caus. 'lift' is attested only once, next to *ceclu* B204a4 with regular preconsonantal degemination; next to it, a causative preterite {cála-} is well attested;
ceccuku to *təwk*-caus. 'hide' is attested several times, the preterite being the causative type {cáwka-};
śeśśarsoṣ IT307a6 to *kərs*-caus. 'let know' is attested only once; the causative preterite {śársa-} is well attested;
ś(e)śśuko(ṣ) B82a1, of which the meaning is hard to establish independently (Adams 1999: 180 suggests 'bow down'), fits morphologically well to the vn *kukäṣälyñe* 'depression', which probably combined with a causative preterite {śáwka-};
ṣeṣṣirku to *ṣərk-* 'surpass' is well attested, and it is found next to a causative preterite {ṣársa-};
tsetstsarormeṃ (abs.) B181a3 to *tˢər*-caus. 'separate' is attested only once, but the causative preterite {tˢyára-} is well attested.

Good alternative explanations are available for the following items:

kakkāccuwa of *katk-* 'be glad' occurs two times in a late text (B107a10, B107b6), whereas forms with a single *k* are well attested elsewhere, so that the *kk* must be a late feature;
śeśśamu to *stəm*-caus. 'put, establish' and comparable forms are attested several times, but here the geminate is certainly due to simplification of the cluster *śc* (Peyrot 2008a: 70-71), itself also well attested, e.g. *śceścmor* B211b3;
śeśśanmu B5b1, B18b8, B295a4 to *śənm-* 'bind' owes its *śś* to older *śc* as well, cf *śceśä(n)moṣ* THT1350a3.

The following two forms are from poorly attested verbs and they could form an *s*-preterite:

tettinor B522a5, abstract of *təyn-* 'be dirty' or 'defile oneself' (Malzahn forth.b). The abstract points to a participle *tettinu*, *-oṣ*, but the preterite is difficult to deduce from the few other forms attested of this verb – an *s*-preterite is a possibility in view of the non-palatalised *t_tt*;
kekkärkū B142b3 to *kərk-* 'bind' is attested only once, the preterite probably being an *s*-preterite {kərk-sa-}.

The following instances are difficult to categorise:

kakkārpäṣṣormeṃ (abs.) B374frg.a to *karp*-caus. 'let descend' is attested only once in a fragmentary manuscript, the corresponding preterite being {kárpəṣṣa-};

tättā$_u$ to *təs-* 'put' is attested several times in slightly different spellings, but always with a geminate *tt*. It is a different case because the reduplication and the *tt* are also found in the subjunctive stem {tə́tta-}; *tättā*$_u$ certainly does not fit the regular pattern of geminates sketched above;

sassāmpaṣ to *samp-* 'take away' is attested twice (AS7Ka4, Cp37.44), both times with a geminate, although *samp-* does not fit the morphological pattern of the other geminates sketched above.

The rule that preterite participles to causative preterites with simple obstruent onsets have gemination has no counterexamples: all other candidates have either initial clusters or resonant initials. Gemination is in this category never distinctive, however, as there are no minimal pairs and these participles are always sufficiently characterised by other features: *e*-reduplication, *ə*-root vocalism, initial palatalisation and their inflexion type (*-u*, *-oṣ*, class 2).

2.6 STEM DERIVATION IN TOCHARIAN A

The analysis of the stem patterns of the Tocharian verb presented in sections 2.6-2.9 is traditional in the sense that it is principally based on only one morphological distinction: suffixing. It deviates from the traditional approach in that it strongly emphasises the derivational relations between stems instead of deriving all stems from the root of the verb. This analysis has great advantages, since it considerably reduces the number of classes and accounts for the patterns of these classes at the same time. However, there are also drawbacks, which centre round two issues: stems that have to be derived from the root, and stems that are identical. A less essential, but nevertheless important problem is posed by root-final *a*, which may "give way" to other suffixes.

The idea that many stems are derived from other stems and not from the root allows to reduce suffixes to smaller units, which in turn reduces the number of suffixes. Logically, not all stems can be derived from other stems: one underived stem must be the basis for the derivation of the other stems. This underived stem will be called the "primary stem" and derived stems "secondary stems". The problem is that in some cases it is impossible to assign a primary stem because no stem is found at the basis of all others at the same time. In such cases, one is forced to derive at least two stems from the root.[56]

When stems are identical, the main principle of the analysis can still be pursued: we can say that one of the two stems is derived from the other by means of a zero suffix. The problem with this solution is that it requires a criterion to assign a primary stem and a zero-derived stem. The criterion I have used attaches a function to formation suffixes: a suffix is defined by its stem distinguishing function. For

[56] If only one stem were to be derived from the root, it would be the primary stem, of course.

instance, a suffix that distinguishes present stems from other stems is a present suffix. In different verbs, one suffix may distinguish different stems, so that e.g. a suffix with present function may also distinguish subjunctives from preterites, in which case it has both present and subjunctive function. However, if in one verb present and subjunctive are identical, this does not mean that the suffix found there has both functions: if the suffix is found with present function elsewhere, it is the present stem that is primary and the subjunctive is derived. If present and subjunctive are identical and the suffix is attested in both functions elsewhere, I will assign the primary status to the stem that is most frequently attested as primary.

Zero derivation is found between present and subjunctive stems, between present and preterite stems, but, most of all, between subjunctive and preterite stems. The most important zero derivation category is made up by root subjunctives and root preterites to *x*|*ā*-roots. Since in general preterites are only rarely derived from subjunctives in Tocharian A, but subjunctives frequently from preterites, the identical subjunctives and preterites are analysed as primary preterites and zero-derived subjunctives.

2.6.1 OVERVIEW

For convenience, the stem patterns are presented schematically below. The following symbols have been used:

→ also "↗" and "↘", derivation with a suffix;
⇒ also "⇗" and "⇘", derivation without suffix or zero derivation;
√ root.

The inclined arrows ("↗", "↘" etc) are used to indicate that more than one stem is derived from a particular base (a stem or the root). For example, the following information is to be read as: "from an *s*-preterite a *ṣä*/*ṣa*-present is derived, as well as a zero-derived *x*|Ø-root subjunctive or an *ʾä*/*a*-subjunctive".

s-PRT	3	↗	*ṣä*/*ṣa*-PRS	8
		⇘	*x*|Ø-√-SBJ	1
		↘	*ʾä*/*a*-SBJ	2

The scheme is further to be read as follows. Underived bases – mostly stems, sometimes the root – are found in the first column; all stems in the second column are derived from the bases in the first column; all stems in the third column are derived from the stems in the second column. The classes of the *Elementarbuch* (Krause and Thomas 1960) are given under "TEB".

primary preterites	TEB			TEB
s-PRT	3	↗	*ṣä*/*sa*-PRS	8
		↘	*x*|Ø-√-SBJ	1
		↘	*'ä*/*a*-SBJ	2
		↘	*ñä*/*a*-SBJ	7
(without *sā*)	3	↗	*nāṣä*/*sa*-PRS	10
		↘	*a*-SBJ	3
		↗	*a*-PRS	3
		↗	*a*|*ā*-√-PRS	4
		↗	*nā*-PRS	6
x|*ā*-√-PRT	1	↗	‹n›-PRS	7
		↘	*x*|*ā*-√-SBJ	5

primary presents	TEB			TEB			TEB
x|Ø-√-PRS	1	→	*ā*-√-PRT	1	⇒	*ā*-√-SBJ	5
ä|*ā*-√-PRS	5	→	*ā*|*ā*-√-PRT	1	⇒	*ā*|*ā*-√-SBJ	5

primary subjunctives	TEB			TEB			TEB
'ä/*a*-SBJ	2	⇒	*'ä*/*a*-PRS	2	→	*ā*-PRT	1

no primary stem				TEB			TEB
root		↗	*äyṣä*/*sa*-PRS	11			
		↘	*ñäñä*/*a*-SBJ	12	→	*ā*-PRT	5
root		↗	*'ä*/*a*-PRS	2			
		↗	*ṣä*/*sa*-PRS	8			
		↘	*ā*-PRT	1	⇒	*ā*-SBJ	5

2.6.2 PRIMARY PRETERITES

The preterite stem has a central position in Tocharian A: the vast majority of the preterites is primary. There are three main types of primary preterites: *x*|*ā*-root preterites, *s*-preterites, and reduplicated preterites. The different subtypes will be discussed under the subjunctive and present types that are derived from them; discussing primary preterites as a separate category is not very useful exactly because virtually all verbs have them.

2.6.3 DERIVED PRETERITES

There are not many derived preterites in Tocharian A and they are all formed with the *ā*-suffix. Mostly, the *ā*-suffix causes palatalisation when possible, but in some cases it does not, so that we have to assume two different suffixes: {'ā} and {ā}. These suffixes form both derived preterites and imperfects. As it turns out, distinctive imperfects are exclusively formed with the suffix {'ā} and distinctive preterites only

with the suffix {ā}, if the *ä*-variant of $^{\text{'ä}}/_{a}$-presents or subjunctives is taken as the basis for the derivation.

The following preterites are derived from the present stem with the suffix {ā}. These preterites are regular in the sense that the unsuffixed 3sg.act. loses the *ā*, e.g. 3sg. *pälk*.

PRETERITE		PRESENT	
{pälkā-}	←	{pälk-}	'shine, look'
{pāykā-}		{päyk-}	'paint, write'
{lāykā-}*		{läyk-}	'wash'
{sälpā-}*		{sälp-}	'glow'

The preterites {lāykā-} and {sälpā-} are inferred from the respective subjunctives of exactly the same form. In {pāykā-} and {lāykā-}, the derivation goes together with a full grade *ā* (witness the preterite participles *pāpeku* and *lāleku*, cf 2.5.6, p 81, and 2.9.1, p 146).

A difficult category is formed by the following preterites that are derived from the subjunctive stem. Since they do not lose the final *ā* in the unsuffixed 3sg.act., they look more like imperfects. However, they are certainly preterites because the present stems are all different.

PRETERITE		SUBJUNCTIVE		PRESENT	
{ākṣäññā-}	←	{ākṣäññ$^{\text{ä}}/_{\text{a}}$-}	≠	{āksäy$^{\text{ṣä}}/_{\text{sa}}$-}	'announce'
{okṣäññā-}		{okṣäññ$^{\text{ä}}/_{\text{a}}$-}		{oksäy$^{\text{ṣä}}/_{\text{sa}}$-}	'grow'
{weñā-}		{weñ$^{\text{ä}}/_{\text{a}}$-}		{tränkä-}	'say'
{kĺoṣā-}		{kĺo$^{\text{ṣä}}/_{\text{sa}}$-}		{kĺosnä$^{\text{ṣä}}/_{\text{sa}}$-}	'hear'

The first two verbs clearly follow the same pattern, but the last two are exceptional: {weñā-} is different because it is part of a suppletive system, and its unsuffixed 3sg. not only deviates in dropping the final *ā* (as a regular preterite), but also the final nasal, which is unparalleled: *we* (on historical grounds, we would expect **weṃ*, comparable to the imperative *peṃ* etc). {kĺoṣā-} is completely parallel to a group of verbs with zero presents, except for two things: it has a secondary present {kĺosnä$^{\text{ṣä}}/_{\text{sa}}$-} beside {kĺo$^{\text{ṣä}}/_{\text{sa}}$-} in relic forms such as the inf. *klyossi*, and its preterite {kĺoṣā-} behaves like an imperfect in keeping the final *ā* in the unsuffixed 3sg., except for *klyoṣ* A436b4, which forces us to set up an imperfect-like {kĺoṣā-} with stable *ā* next to a regular preterite {kĺoṣā-} with *ā* dropping in the unsuffixed 3sg.

Four preterites look like they have to be derived directly from the root because the stem final before the *ā*-suffix is not palatalised or the present cannot be the basis for another reason. In the case of {ent$^{\text{ṣ}}$ā-}, we have to assume that it is derived from the root because the present has an additional $^{\text{ṣä}}/_{\text{sa}}$-suffix. The preterite stem {mewā-} is not totally certain, since it is inferred from the vn *mewlune*; in any case, its *w* excludes derivation from the present stem:

PRETERITE		ROOT		PRESENT	
{entsā-}	←	*ent^{s}-*	≠	{ent^{s}ä^{sä}/$_{sa}$-}	‘seize’
{p^{a}/$_{ä}$nwā-}		*pänw-*		{pañw^{ä}/$_{a}$-}	‘pull’
{mewā-}		*mew-*		{me-}	‘tremble’
{wäsā-}		*wäs-*		{wa^{sä}/$_{sa}$-}	‘dress’

In two verbs, a different suffix is found: {sā}.

PRETERITE		PRESENT	
{twāsā-}	:	{täw^{ṣä}/$_{sa}$-}	‘light’
{swāsā-}		{säw-}	‘rain’

(The preterite {twāsā-} is inferred from the subjunctive of the same form.) With two verbs only, it is impossible to find a pattern; even these two verbs do not have exactly the same formation.

2.6.4 ZERO PRETERITES

Preterites that are identical to subjunctives are very frequent in Tocharian A, but these are classified as primary preterites with zero subjunctives. Nevertheless, there are some preterites that can be called zero preterites. These concern a small group of verbs with present-subjunctive where no distinction can be made between imperfect and preterite:

IMPERFECT-PRETERITE		PRESENT-SUBJUNCTIVE	
{kāṣäññā-}	←	{kāṣäññ^{ä}/$_{a}$-}	‘scold’
{täwnkäññā-}		{täwnkäññ^{ä}/$_{a}$-}	‘love’
{pāṣā-}		{pā^{sä}/$_{sa}$-}	‘protect’
{yärṣā-}		{yär^{sä}/$_{sa}$-}	‘revere’
{wlāyṣā-}		{wlāy^{ṣä}/$_{sa}$-}[57]	‘carry out’
{śāwā-}		{śāw^{ä}/$_{a}$-}	‘live’

These imperfect-preterites behave more like imperfects than preterites in that they do not drop the root-final *ā* in the unsuffixed 3sg.act. Consequently, they would be derived from the present rather than the subjunctive; however, as noted above, there are also unambiguous preterites derived from subjunctives that show exactly the same “imperfect” characteristics. That {krāṣäññ^{ä}/$_{a}$-} ‘be annoyed’ and {slānkäññ^{ä}/$_{a}$-} ‘?’ are present-subjunctives as well is inferred from their similarity to the pattern of ‘scold’ and ‘love’; probably they formed the same type of imperfect-preterite.

[57] The vocalism *āy* instead of *e* is needed for the preterite participle *wāwleṣu*.

{kĺoṣā-}, ipf.-prt. of 'hear' is completely parallel to 'protect', 'revere' etc, except for its secondary present {kĺosnä$^{ṣä}/_{sa}$-} and one "real" preterite form *klyoṣ*.

2.6.5 PRIMARY SUBJUNCTIVES

In the strictest sense, there is only one primary subjunctive in Tocharian A: {āy-}. The subjunctive of *āy-* 'give' is the shortest stem of this root and there is no other stem competing for the predicate "shortest" or primary stem: the present is {āy$^{ṣä}/_{sa}$-} and the preterite is suppletive, {wä-sā-} (see 2.5.5, p 78). It may be no coincidence that this verb has an isolated suppletion type wherein subjunctive and preterite stem are from different roots.

The vast majority of the subjunctive stems are identical to the preterite and they could theoretically be primary subjunctives with zero-derived preterites. The reason to take the preterites as primary formations and the subjunctives as zero-derived is that derived subjunctives are common-place in Tocharian A, but derived preterites are rare.

2.6.6 DERIVED SUBJUNCTIVES

Derived subjunctives are primarily formed from the preterite. We find the suffixes {$^{ʾä}/_{a}$}, {a}, {ñ}, {ā$^{ṣä}/_{sa}$}, and marginally {nā} and {nāk}. In addition, there are two *ññ*$^{ä}/_{a}$-subjunctives that are formed from the root.

{$^{ʾä}/_{a}$}

Derived $^{ʾä}/_{a}$-subjunctives form a limited, closed, heterogeneous category with a striking number of verbs with irregularities. As far as they follow a pattern, they are derived from *s*-preterites; however, not all have an *s*-preterite, or lack a preterite altogether. Therefore, the present stems are cited as well:

SUBJUNCTIVE		PRETERITE		PRESENT	
{kāw$^{ä}/_{a}$-}	←	{kāw-$^{Ø}/_{sā}$-}	cf	{kāw$^{ṣä}/_{sa}$-}	'kill'
{träy$^{śä}/_{ka}$-}		{träyk-$^{Ø}/_{sā}$-?}		{träyk$^{ṣä}/_{sa}$-}	'err'
{päl$^{śä}/_{ka}$-}		–		–	'torment'
{yām$^{ä}/_{a}$-}		{yām-, yām-$^{Ø}/_{sā}$-}		{y$^{pa}/_{a}$-}	'do'
{läñc$^{ä}/_{a}$-}		{läcā-}		{länt$^{ṣä}/_{sa}$-}	'go out'
{śäm$^{ä}/_{a}$-}		–		{k^{w}ämnä$^{ṣä}/_{sa}$-}	'come'
{t^{s}är$^{śä}/_{ka}$-}		–		–	'torment'

A relatively coherent group is formed by {träy$^{śä}/_{ka}$-}, {päl$^{śä}/_{ka}$-} and {t^{s}är$^{śä}/_{ka}$-}, also because the subjunctive suffix is very clearly evidenced by the verbal nouns *triślune*, *pläślune* and *tsärślune*. The problem with these three verbs is that they are defective: of the subjunctive, *only* the verbal noun is attested, whereas other stems are lacking completely for {päl$^{śä}/_{ka}$-} and {t^{s}är$^{śä}/_{ka}$-}. For {träy$^{śä}/_{ka}$-}, the evidence is weak at least,

since the *s*-preterite is based on one archaic form 1sg. *trīkū*, and the present could morphologically also belong to the causative. In short, these three verbs certainly are not part of a productive pattern anymore.

For all the other verbs, assigning the subjunctive suffix is less easy because they do not show stem-final palatalisation and the 1sg. and 3pl. forms are not completely trustworthy evidence. Nonetheless, the subjunctive suffix can be assigned with reasonable confidence. The most straightforward case seems to be {kāw$^{ä}/_{a}$-}; the remaining verbs all have something irregular. {yām$^{ä}/_{a}$-} corresponds to an *s*-preterite indeed, but the present is suppletive and the preterite has variants: both normal *s*-preterite forms and *sā*-less preterite forms are found; {läñc$^{ä}/_{a}$-} corresponds to a $^{ṣä}/_{sa}$-present, but not to an *s*-preterite, and it has an additional *n* in the root; {śäm$^{ä}/_{a}$-} corresponds to a *nä*$^{ṣä}/_{sa}$-present whereas the preterite is lacking (the prt.ptc. *kakmu* could – but need not – point to an *s*-preterite pattern).

{a}

Derived *a*-subjunctives form a coherent, but limited and probably closed category. Almost all combine with middle *sā*-less preterites, with *a*-grade in the root of the preterite middle.

SUBJUNCTIVE		PRETERITE		PRESENT	
{käna-}	←	–	cf	{kän$^{ṣä}/_{sa}$-}	‘come about’
{käsa-}		–		?	‘extinguish’
{cäma-}		{tam-}		{tämnä$^{ṣä}/_{sa}$-}	‘be born’
{näka-}		{nak-}		{näknä$^{ṣä}/_{sa}$-}	‘perish’
{päka-}		{pak-}		{päknä$^{ṣä}/_{sa}$-}	‘boil, ripen’
{wäla-}		{wäl-$^{∅}/_{sā}$-}		{wäl(l)ä$^{ṣä}/_{sa}$-}	‘die’
{t^{s}äka-}		{t^{s}ak-}		{t^{s}äknä$^{ṣä}/_{sa}$-}	‘burn’

The subjunctives of this group of verbs are all middle only, except for a transitive active form 2sg. *nakät*; {cäma-} deviates from the rest in having initial palatalisation. The presents are all of the same type, too, as we could analyse {kän$^{ṣä}/_{sa}$-} morphologically as {kän-nä$^{ṣä}/_{sa}$-} (on {wäl(l)ä$^{ṣä}/_{sa}$-} see 2.5.8, p 90). The preterites {tamä-}, {nakä-}, {pakä-} and {t^{s}akä-} follow the same pattern: they belong to a rare subtype of the *s*-preterite that has no *sā*-suffix in the middle. The only other verb that follows this pattern is *yäp-* / *yām-* ‘do’, which forms a second preterite middle stem with regular *sā* next to it.

The preterite to {wäla-} is different because it is active, so that it cannot be seen whether it would follow the *sā*-less pattern in the middle. However, it is probably not of the same type, since it does not have the characteristic *a*-grade in the root. Perhaps there is a relationship between the loss of the *n* in the present and the preterite type: to a prs. {wäl$^{ṣä}/_{sa}$-}, a 3sg. *wläs* etc is one of the possible regular preterite formations. The preterites to {käna-} and {käsa-} are not known (the verb

käs- is only attested with a vn *ksalune* and the prt.ptc. *kaksu*: all alleged present forms are uncertain or definitely belong to other verbs).

The verb *mäsk-* 'be, become' could belong here, too. It is defective and overlaps in function with *nas-* 'be'. It forms a present {mäska-} (witness prs.ptc. *mäskamāṃ* and inf. *mäskatsi*), an *s*-prt. {mäsk-$^{Ø}/_{sā}$-} and prt.ptc. *mamäsku*. The problem with this pattern is that it is completely isolated: an *a*-present is normally paired with a *x*|*ā*-root subjunctive and *x*|*ā*-root preterite **{mäskā-} and accordingly, the prt.ptc. would have been ***mäsko*. Since 'become' often has the same future reference as the subjunctive, a subjunctive formation would not be surprising; however, other functions of the subjunctive, such as the conditional, are not attested for {mäska-}. If *mäska-* is actually a subjunctive stem, this would also explain why the verb has no "normal" subjunctive (in *-ā*), but the problem remains why it has no regular present {mäsk-näṣä$/_{sa}$-}, which we would expect on the basis of the other *a*-subjunctives.

{ñ$^{ä}/_{a}$}

All *ñ$^{ä}/_{a}$*-subjunctives combine with *s*-preterites, and by far the most common subjunctive type to the *s*-preterite is the *ñ$^{ä}/_{a}$*-subjunctive. The formation of the *ñ$^{ä}/_{a}$*-subjunctive is straightforward: the initial is not palatalised[58] and the root-grade in *ä*|Ø-roots is *ä*. Some examples are:

SUBJUNCTIVE		PRETERITE		
{arñ$^{ä}/_{a}$-}	←	[−grad]	{ar-$^{Ø}/_{sā}$-}	'bring about'
{āwñ$^{ä}/_{a}$-}			{āw-$^{Ø}/_{sā}$-}	'hit; start'
{nākñ$^{ä}/_{a}$-}			{nāk-$^{Ø}/_{sā}$-}	'criticise'
{räyñ$^{ä}/_{a}$-}			{räy-$^{Ø}/_{sā}$-}	'give up'
{kärkñ$^{ä}/_{a}$-}		[+grad], [+pal]	{śark-$^{Ø}/_{sā}$-}	'bind'
{läypñ$^{ä}/_{a}$-}			{Ĺayp-$^{Ø}/_{sā}$-}	'leave'
{kñāñ$^{ä}/_{a}$-}		irregular	{kñas-$^{Ø}/_{(s)ā}$-}	'know'

{kñāñ$^{ä}/_{a}$-} is irregular because of its vocalism, since we would expect either sbj. *ä*-grade next to prt. *a*-grade or prt. *ā*-grade next to sbj. *ā*-grade. Further, the root *knā-* has no closing consonant, which must historically be related to the "stable" *s* of the *s*-preterite, and in principle, we would not expect the *kn* to be palatalised in the subjunctive. All these pecularities are beyond synchronic explanation, and they are discussed in the diachronic part (see 4.3.3, p 365).

The problem with the *ñ$^{ä}/_{a}$*-subjunctive is not so much how it is formed, but more to which *s*-preterites it belongs. The *ñ$^{ä}/_{a}$*-subjunctive is certainly the productive formation, the most important alternative formations being the *$^{ʾä}/_{a}$*-subjunctive and the *a*-subjunctive, both discussed above. We further find two zero-derived subjunc-

[58] The only exception known to me is 1sg.sbj. *lyutñam*, which seems to go together with 3pl.prs. *lutseñc* etc.

tives and a *nā*-subjunctive. The distribution between these formations is not very clear: the *a*-subjunctive clearly patterns with the *sā*-less preterite, whereas the $^{\text{'ä}}/_{a}$- and zero-derived subjunctives are obviously relics; the *nā*-subjunctive is a unique case.

{ā^{ṣä}/$_{sa}$}

$ā^{ṣä}/_{sa}$-subjunctives are very frequent and they belong to one rigid causative pattern with reduplicated preterites. All verbs that form these causatives have *ä*-grade in all stems; the reduplicated preterite may have initial palatalisation, but the initial of the $ā^{ṣä}/_{sa}$-subjunctive is in principle never palatalised. The present is always identical to the subjunctive, except for the vowel *ā* which corresponds to zero in the present, e.g. prs. *lmäṣtär* '(s)he puts' from {läm^{ṣä}/$_{sa}$-} vs sbj. *lmāṣtär* '(s)he will put' from {lämā^{ṣä}/$_{sa}$-}. Some examples:

SUBJUNCTIVE		PRETERITE			PRESENT	
{kärnā^{ṣä}/$_{sa}$-}	←	[−pal]	{ka-kärnā-}	cf	{kärn^{ṣä}/$_{sa}$-}	'beat'
{kälnā^{ṣä}/$_{sa}$-}			{ka-kälnā-}		{käln^{ṣä}/$_{sa}$-}	'make resound
{tälā^{ṣä}/$_{sa}$-}		[+pal]	{ca-cälā-}		{täl^{ṣä}/$_{sa}$-}	'lift'
{lämā^{ṣä}/$_{sa}$-}			{Ła-Łämā-}		{läm^{ṣä}/$_{sa}$-}	'put'
{ṣtämā^{ṣä}/$_{sa}$-}			{śa-śśämā-}		{ṣtäm^{ṣä}/$_{sa}$-}	'establish'

Two verbs are irregular because they have *ā*|*x*-roots: *wārp-* 'urge' and *spārtw-* 'turn (tr.)'. For both verbs the existence of a $^{ṣä}/_{sa}$-present and $^{ṣä}/_{sa}$-subjunctive is ascertained, but because of the heavy root vowel it cannot be established with the forms we have whether there was a contrast between the present and subjunctive stems. Of both, a prs.ptc., *wārpäsmāṃ* and *spārtwäsmāṃ*, and a vn, *wārpäṣlune* and *spārtwäṣlune*, are attested. The present stems are therefore certainly {wārp^{ṣä}/$_{sa}$-} and {spārtw^{ṣä}/$_{sa}$-}, but 3sg. sbj. forms like *wārpaṣ* or *spārtwaṣ*, which would prove sbj. stems {wārpā^{ṣä}/$_{sa}$-} and {spārtwā^{ṣä}/$_{sa}$-} with weakened middle *ā*, are not attested.

{nā}

There is one *nā*-subjunctive attested: {yomnā-} of 'reach' next to an *s*-preterite {yom-^{Ø}/$_{sā}$-} and a $nā^{ṣä}/_{sa}$-prs. {yomnā^{ṣä}/$_{sa}$-}. This combination of stems is so peculiar that the verb is an exception in all listings: it has the only *nā*-subjunctive, and logically, it is the only *s*-pretrite to combine with a *nā*-subjunctive; additionally, it is one of the few $nā^{ṣä}/_{sa}$-presents. Its preterite participle *yomu* matches the *s*-preterite.

{nāk}

The *nāk*-suffix is by all means peculiar, and it is not even directly attested. It is peculiar because it occurs in only two verbs with an isolated pattern and because, unlike most other suffixes, it is not composed of known elements: a final *-k* does not occur elsewhere. It is not attested directly because it is found in two optative forms

only: 3sg.opt.mid. *päknāśi(t)rä* of *päkā-* 'intend' and 3sg.opt.mid. *(yä)knāśśiträ* of *yäkā-* 'be careless'. In these forms, we would rather expect a *nā*-sbj, even if this brought the total number of that type only to three. In view of the formation of the optative elsewhere, we would have expected the optatives to be {päknäy-} and {yäknäy-} (with deletion of the *ā* of the sbj. {päknā-} and {yäknā-} as in 3sg.opt. *tākiṣ* 'may (s)he be' to 3sg.sbj. *tākaṣ*) – perhaps the *ś* is a kind of hiatus-filler.[59] The preterites are *ä|ā*-root preterites: {päkā-} and {yäkā-}; the presents are *nā$^{ṣä}/_{ṣa}$*-presents: {päknā$^{ṣä}/_{ṣa}$-} and {yäknā$^{ṣä}/_{ṣa}$-}.

{ñ ñ$^{ä}/_{a}$}

There are two types of *ññ$^{ä}/_{a}$*-subjunctives, one being identical to the present and the other having a *$^{ṣä}/_{ṣa}$-* or *äy$^{ṣä}/_{ṣa}$*-present beside it. The first type is analysed as a primary subjunctive in 2.6.5 (p 99); the second type consists of two verbs only:

SUBJUNCTIVE		PRESENT	
{ākṣäññ$^{ä}/_{a}$-}	vs	{āksäy$^{ṣä}/_{ṣa}$-}	'announce'
{okṣäññ$^{ä}/_{a}$-}		{oksäy$^{ṣä}/_{ṣa}$-}	'grow'

Since *$^{ṣä}/_{ṣa}$*-presents are very frequent, it would be attractive to derive the presents from the subjunctive, i.e. something like {ākṣäññä-$^{ṣä}/_{ṣa}$-} → {āksäy$^{ṣä}/_{ṣa}$-}, but apart from the fact that a change *ñ$^{ṣä}/_{ṣa}$ > $^{ṣä}/_{ṣa}$* lacks parallels, this is not possible because of the unpalatalised *s* in the present stem. Thus, we have to assume that both the present and the subjunctive are derived from the root.

2.6.7 ZERO SUBJUNCTIVES

Since verbs with an identical preterite and subjunctive stem are analysed as primary preterites with zero-derived subjunctive, the number of zero-derived subjunctives is relatively large. However, the number of types is limited. The largest group consists of zero subjunctives with root preterites to *x|ā*-roots, and a small group of zero subjunctives to *x|*Ø-roots with *s*-preterites. In addition, there is a limited group of present-subjunctives.

ä|ā-roots

This is the group of verbs with both gradation (in the subjunctive and the preterite) and palatalisation (in the preterite) of which many examples have been cited in 2.5.4 (p 66). The singular active of the subjunctive and the plural active of the preterite have *a*-grade and all other forms have *ä*-grade; the singular active of the preterite has

[59] On this option, cf in particular Winter (1965a: 207-210), who compares the "intrusive" *-k-* in e.g. Tocharian A *lwākis*, gen.sg. in *-is* of the word *lu* 'animal'.

initial palatalisation if the initial is palatalisable. This subjunctive-preterite type corresponds to *a*-, *nā*- and ‹n›-presents, and *a*-grade zero presents. Some examples are:

SBJ.SG./PRT.PL. ACT.	PRT.SG.ACT.		OTHER	PRESENT	
{kalā-}	[+pal]	{śälā-}	{kälā-}	{kälnā-}	‘bring’
{krasā-}		{śräsā-}	{kräsā-}	{kräsnā-}	‘know’
{tarkā-}		{cärkā-}	{tärkā-}	{tärnā-}	‘let go’
{tˢawkā-}[60]		{śäwkā-}	–	{yokä-}	‘drink’
{kalkā-}	[−pal]	{kälkā-}	{kälkā-}	{y-}	‘go’
{klaysā-}[60]		{kläysā-}	{kläysā-}	{kläysnā-}	‘sleep’
{prawtkā-}		{präwtkā-}	{präwtkā-}	–	‘fill’?
{tˢalpā-}		{tˢälpā-}	{tˢälpā-}	{śalpā-}	‘pass away’

The difference between *tsälp* ‘(s)he passed away’ and *kälk* ‘(s)he went’ on the one hand and *śuk* ‘(s)he drank’ and *śäl* ‘(s)he brought’ on the other suggests the existence of two subtypes among verbs of this type with a palatalisable initial. Verbs with a palatalised initial seem to be transitive and those with an unpalatalised – but palatalisable – initial intransitive (Winter 1980a, e.g. 434). With palatalisation we find:[61] *kätkā*- ‘cross’, *kräsā*- ‘know’, *tärkā*- ‘let go’, *läwā*- ‘send’, *tˢäwkā*- ‘drink’; without palatalisation we find: *kälkā*- ‘go’, *läytā*- ‘go away’, *sätkā*- ‘spread (intr.)’, *späntā*- ‘trust’, *tˢälpā*- ‘pass away’. The only exception is *lämā*- ‘sit’ with a 3sg.prt. *lyäm*, which is semantically intransitive (on syntactic transitive use, cf Winter 1980a: 435-437 and Thomas 1988).

One verb with a derived preterite has the same gradation pattern: *pänw*- ‘stretch’. The combination of the 3pl.prt. *panwar* and the prt.ptc. *pänwo* suggests a 3sg.sbj. *panwaṣ**, 3pl.sbj. *pänweñc**, 3sg.prt. *pnu** etc.

ā|*ā*-roots

With *ā*|*ā*-roots we find exactly the same patterns as with *ä*|*ā*-roots, but without gradation and palatalisation. Some examples:

SUBJUNCTIVE-PRETERITE		PRESENT	
{kākā-}	cf	{kenä-}	‘call’
{kātkā-}		{kāt‹n›kā-}	‘rise’
{kotā-}		{kotnā-}	‘cut up’
{tāpā-}		{śäwā-}	‘eat’

A group of *x*|*ā*-root verbs with stable *ā*-grade in the subjunctive and preterite follows exactly the same pattern, cf sbj.-prt. {pālā-} vs prs. {pällā-} of ‘praise’; sbj.prt.

[60] Only sbj.sg.act. attested.
[61] Of suppletive verbs, the subjunctive-preterite roots are cited.

{pāykā-} vs prs. {päykä-} of 'write, paint' or sbj.prt. {māntā-} vs prs. {mäntā-} of 'scold'. All of these are discussed under derived presents in 2.6.9 (p 115).

A small number of verbs with a monosyllabic sbj.-prt. *ā*-stem have no major irregularities in the subjunctive or preterite: *klāw-* 'fall', *yā-* 'go', *ĺā-* 'wipe off', and possibly *plā-* of unknown meaning, have stable sbj.-prt. stems {klā-}, {yā-}, {ĺā-}, and {plā-}; *āk-* 'lead' has a stable suppletive sbj.-prt. {wā-}. Understandable peculiarities are a *w*-glide in the optative, e.g. 1sg.opt. *wāwim*, and the preservation of root-final *ā* in the unsuffixed 3sg.prt., e.g. *klā*, *yā*; understandable, since according to the rules the "regular" forms would have been ***wim*, ***käl* and ***y* or ***i* (!). The same *w*-glide is found in the optative to the subjunctive {tā-} of 'put', which has a different preterite type.

For a large number of verbs no gradation variants are attested, and many of them could be of the regular grading type of *ä*|*ā*-roots, since the *a*-grade forms or the forms with palatalised initial are just incidentally not attested. However, there may exist a non-grading type with *ä*-vocalism in the root. I have found the following *ä*-grade form that should have *a*-grade in the grading pattern of the *ä*|*ā*-roots: 3sg. *skāṣ* of unknown meaning. If this form cannot receive a different explanation, it proves the existence of a non-grading *ä*|*ā*-type; otherwise, there are many forms that could belong to such a type, but none that proves it.

x|Ø-roots

Zero subjunctives to *x*|Ø-roots are rare: most *s*-preterites combine with derived subjunctives. Nevertheless, a small group of verbs belongs to this category:

SUBJUNCTIVE		PRETERITE		PRESENT	
{tā-}	=	{$^{ca}/_{tä}$s-$^{Ø}/_{(s)ā}$-}	cf	{tā$^{ṣä}/_{sa}$-}	'put'
{tänk-}, {tänkñ$^{ä}/_{a}$-}		{cank-$^{Ø}/_{sā}$-}		{tänk$^{ṣä}/_{sa}$-}	'check'
{träṅk-}, {träṅkñ$^{ä}/_{a}$-}		{träṅk-$^{Ø}/_{sā}$-}[62]		{träṅk$^{ṣä}/_{sa}$-}	'hang'
{präk-}		{pr$^{a}/_{ä}$k-$^{Ø}/_{sā}$-}		{prak$^{ṣä}/_{sa}$-}	'ask'
{märk-}		{mark-$^{Ø}/_{sā}$-}		–	'smudge'?
{t^{s}āk-}		{t^{s}āk-$^{Ø}/_{sā}$-}		{t^{s}āk$^{ṣä}/_{sa}$-}	'glow'

Many of these verbs have something peculiar. 'ask' and 'put' stand out in being the only *s*-preterites with gradation in Tocharian A; 'put' is further irregular in having no "closing" consonant at the right and an isolated gradation pattern with *ā* : *a* : *ä* (cf *knā-* 'know'). The verbs 'check' and 'hang' have variants for the subjunctive stem, which clearly shows that this pattern was not vivid anymore. For 'check', the zero subjunctive is only attested in the verbal noun *täṅklune*, a category where we also find isolated $^{ä}/_{a}$-subjunctives; {märk-}, too, is only attested in the vn *märklune*. The subjunctive stem of 'glow' seems to be unproblematic, as it is attested with a

[62] No active forms attested.

3pl.opt.mid. *tsāśinträ*, where the palatalised *ś* proves that the subjunctive stem had no vowel following the *-k*: {tˢāk-}.

kläy- 'be necessary' could theoretically also belong here: the attested *klintär* and *klyintär* are ambiguous as to whether they represent {kläyñä-tr} or {kläyn-tr}; only in the latter case would it be parallel to the other verbs listed here. However, with its *-n*, a root final not found with the other verbs, it is more probable that the two forms are to be analysed as {kläyñä-tr} (see 2.6.9, p 114), which is confirmed by the comparison with Tocharian B (see 4.8.2, p 472).

A group of at least three *ä*|Ø-root presents is completely parallel to the zero subjunctives above:

PRESENT		IMPERFECT		SUBJUNCTIVE		PRETERITE	
{tränk-}	=	{crank-$^{Ø}/_{sā}$-}	cf	{weñ$^{ä}/_{a}$-}	cf	{weñā-}	'say'
{säw-}		{saw-$^{Ø}/_{sā}$-}[63]		{swāsā-}		{swāsā-}	'rain'
{tˢäyp-}		{śayp-$^{Ø}/_{sā}$-}		?		?	'dance'

'say' is the clearest case, since here the preterite and subjunctive stems are suppletive and the prs. and ipf. can be analysed as an independent verb morphologically, thus making it completely parallel to the zero subjunctives above. 'rain' is a complicated case because the *āsā*-extension for the preterite and subjunctive stems is completely isolated: the morphological relationship to the present comes close to suppletion. To what extent 'dance' can be analysed as a morphological subjunctive with corresponding preterite is unclear because no syntactically subjunctive or preterite forms are attested so far. In fact, I would not be surprised if these stems were from another root, the verb 'dance' being suppletive, too.

present-subjunctives

Most present-subjunctives have the suffix {$^{ä}/_{a}$} and derivatives of it. They are analysed as primary presents with zero-derived subjunctives because the $^{ä}/_{a}$-suffix occurs as a present suffix. It should be noted, however, that the same suffix also occurs as a subjunctive suffix, which could be an argument to analyse these present-subjunctives as primary subjunctives instead.

[63] Certainly to be set up like this, on the basis of 3pl. *sawr-äm* A298a4. *svawrä* A274a2 must be a mistake. For the lack of initial palatalisation I am unable to offer an explanation on the synchronic level.

{ʾä/a}		{ññä/a}		{ṣä/sa}	
{kĺoṣä/sa-}	‘hear’	{arṣaṣäññä/a-}	‘fit’	{enäṣä/sa-}	‘honour’
{cämpä/a-}	‘can’	{kāṣäññä/a-}	‘scold’	{wäynāṣä/sa-}	‘command’
{pāṣä/sa-}	‘protect’	{klopäññä/a-}[64]	‘express sorrow’		
{proṣä/sa-}	‘be ashamed’	{krāṣäññä/a-}*	‘be annoyed’		
{yärṣä/sa-}	‘revere’	{täwnkäññä/a-}	‘love’		
{wlāyṣä/sa-}	‘carry out’	{slānkäññä/a-}*	‘?’		
{śāwä/a-}	‘live’				

kĺos- ‘hear’ deviates in having a hapax legomenon 3sg. preterite form *klyoṣ* next to the expected and frequently attested *klyoṣā*, and a secondary present stem {kĺosnäṣä/sa-}, while earlier present-subjunctive function of {kĺoṣä/sa-} is shown by e.g. inf. *klyossi*. The present-subjunctives {krāṣäññä/a-} and {slānkäññä/a-} are inferred on the basis of a prs.ger. *krāṣiññäl* and a vn *slāṅkiñlune*. The problem with {enäṣä/sa-} and {wäynāṣä/sa-} is that there is no simple guideline to define the shape of the root. If the roots are *en-* and *wäynā-* respectively, we have to assume a special subset of present-subjunctives with the suffix {ṣä/sa}. If the roots can be set up us *enäs-* and *wäynās-*, they could be perfectly parallel to the verbs with a *ʾä/a*-suffix. The verbs with the *ññä/a*-suffix must be treated separately, and not as special *ʾä/a*-present-subjunctives because their roots are certainly too long and they are denominal formations.

{kāckä/tka-} ‘be glad’ (if the stem has to be set up like this) certainly functions as a present (cf prs.ptc. *kātkmāṃ*), but it could be a prs.-sbj. of the type discussed above; as a *ʾä/a*-present, it would be isolated (since all others have *a*-grade in the root).

The verb *täkwā-* of unknown meaning seems to have a prs.-sbj. {täkwā-}, witness inf. *täkwātsi*, vn *täkwālune*. {pota-} ‘flatter’ seems to be another case of a present-subjunctive. For structural reasons, and because of the comparison with Tocharian B, one would expect that this verb forms a subjunctive in *ā* (which is weakened to *a* after *o*) and a present in *a* with root grade *a* (which is not distinct from *ā* before *w*). A third verb that could have a prs.-sbj., *krop-* ‘gather’, is peculiar, since it has a clear *nā*-present and *ā*-subjunctive, both well attested, but there are indications for a prs.-sbj. stem {kropä/a-} next to it.

2.6.8 PRIMARY PRESENTS

Even when *ʾä/a*-present-subjunctives are analysed as primary subjunctives with zero-derived presents, the number of primary presents is relatively large. There are principally two groups to be distinguished: presents in suppletive patterns and presents with derived preterites and subjunctives.

[64] Inferred from the ipf.

Presents in suppletive patterns fall into three categories: Ø-presents, $^{\text{'ä}}/_{a}$-presents and *ā*-presents.

{Ø}

Since Ø-presents are well attested in non-suppletive paradigms, the following that are found in suppletive verbs can in principle be considered "real presents". However, *tränk-* has an imperfect beside it that is formed like a preterite, so that it is morphologically rather a subjunctive; completely parallel to *tränk-* is *tˢäyp-* 'dance', to which no suppletive preterite-subjunctive root is attested. It must be stressed that there is nothing in the formation of the present *tränk-* itself that leads to an analysis as a morphological subjunctive – it is only its imperfect that suggests it. Thus, other verbs where the imperfect is not attested could theoretically belong to the same pattern.

PRESENT		PRETERITE-SUBJUNCTIVE ROOT	
{käĺ-}	cf	*stämā-*	'stand'
{ken-}		*kākā-*	'call'
{tränk-}		*weñ-*	'say'
{y-}		*kälkā-*	'go'
{yok-}		*tˢäwkā-*	'drink'

{$^{\text{'ä}}/_{\text{a}}$}

There seems to be no way to know whether suppletive $^{\text{'ä}}/_{a}$-presents are morphological presents or subjunctives because this suffix is attested in both functions.

PRESENT		PRETERITE-SUBJUNCTIVE ROOT	
{ā$^{\text{śä}}/_{\text{ka}}$-}	cf	*wā-*	'lead'
{nas-}		*tākā-*	'be'
{pär$^{\text{ä}}/_{\text{a}}$-}		*kāmā-*	'carry'
{y$^{\text{pa}}/_{\text{a}}$-}		*yām-*	'do'
{ṣäm$^{\text{ä}}/_{\text{a}}$-}		*lämā-*	'sit'

Two of the presents above have special irregularities. 'do' is relatively easy to describe: it has two variants, {ya-} and {ypa-}, which are distributed like *ä-* and *a-*variants of $^{\text{'ä}}/_{a}$-paradigms but have no further resemblance to *ä-* or *a*-variants at all. 'be' is difficult to describe because it has many variant forms. The longest stem seems to be {na$^{\text{śä}}/_{\text{sa}}$-}: *nasa*-forms are unambiguously attested in 1sg. *nasam* and 1pl. *nasamäs*, but the *naṣä*-forms could theoretically also be *nas*-forms: 2sg. *naṣt*, 3sg. *naṣ*, and 2pl. *naś*. A shorter stem {n(ä)-} or perhaps {n$^{\text{ä}}/_{\text{a}}$-} is found in short 3sg. forms *nä-ṃ* (with 3sg. suffix), *nä-m* (with pl. suffix) and 3pl. *neñc* and *neñci* (with 2sg. suffix). A typical problem is that we also find a suffixed long 3sg. form *naṣ-äṃ*, *naṣ-*

äm without geminate, so that the analysis seems to be {na-ṣ-} instead of {naṣä-ṣ-} or {nas-ṣ-} (for parallels of *nas-* to a non-suppletive pattern, see 2.6.9, p 110).

{ā}

Only two suppletive presents have a root-final *ā* and since this is otherwise only found with preterites and subjunctives, these presents are best seen as morphological subjunctives.

PRESENT		PRETERITE-SUBJUNCTIVE ROOT	
{läkā-}	cf	*pälkā-*	'see'
{śäwā-}		*tāpā-*	'eat'

Primary presents with derived preterites or subjunctives next to them are predominantly of one type: *ä*-presents with *ā*-preterites or subjunctives. This pattern is attested with certainty for the following verbs:

PRESENT		SUBJUNCTIVE			PRETERITE	
{pälk-}	→	(*ä*-grade)	–	=	{pälkā-}	'shine'
{sälp-}			{sälpā-}		{sälpā-}*	'burn'
{päyk-}		(*ā*-grade)	{pāykā-}		{pāykā-}	'paint; write'
{läyk-}			{lāykā-}		{lāykā-}	'wash'
{säl-}			–		{sālā-}*	'jump'
{säyp-}			–		{sāypā-}*	'anoint'

The preterite to {säl-} is not attested directly: a fragmentary ///*slu[·]t* A344a5 is likely to be the preterite participle, and because of the final vowel *u* it must have been either *saslu* or *sāslu*. Since the first type only fits $^{ṣä}/_{ṣa}$-presents, we must probably restore (*sā*)*slu*(*ṃ*)*t* {sā-sālā-w-nt}. If these assumptions are correct, the preterite-subjunctive stem was {sālā-}. The preterites {lāykā-}, {sāypā-} and {sälpā-} are also inferred from preterite participles, but these are attested undamaged (or only slightly damaged in the case of {sälpā-}).

The *ä* : *ā* gradation of *päyk-*, *läyk-*, *säl-* and *säyp-* is exactly parallel to zero-presents in *-ā* that are discussed in 2.6.10 (p 115).

One verb has a comparable pattern but a different preterite-subjunctive stem: prs. {säw-} 'rain' combines with a prt.-sbj. {säw-āsā-}.

Of the root *pläw-* 'float' only two forms are attested: prt.ptc. *plumānn* and 3pl.prt. *plawar*. If these are from one verb, they suggest the same basic pattern as the primary presents with *ā*-preterite-subjunctives above, but with root gradation in the latter: sbj. {pl$^{a}/_{ä}$wā-}, prt. {pl$^{ä}/_{a}$wā-} vs prs. {pläw-}.

The following Ø-presents could belong to the same pattern, or to the pattern of the suppletive verbs, as only the Ø-present is attested (and even the Ø-present is not in all cases certain): {käln-} 'sound', {knäsw-} 'approach', {kräw-} '?', {tärm-}

'tremble', {päṣt-} 'lure', {pränk-} '?', {mlok-} '?', {smäy-} 'smile', {tˢop-} '?', {tˢpok-} 'suck' (?).

2.6.9 DERIVED PRESENTS

The vast majority of the presents is derived. We find the following suffixes: {ʾ$^{ä}/_{a}$}, {a}, {nā}, {$^{ṣä}/_{sa}$}, {nā$^{ṣä}/_{sa}$}, {nä$^{ṣä}/_{sa}$}, and the infix ‹n›.

{ʾ$^{ä}/_{a}$}

A small group of verbs forms a $^{ʾä}/_{a}$-present next to a derived *ā*-preterite-subjunctive. Since the preterite-subjunctive cannot be derived from the present stem, both have to be derived from the root. The pattern is attested directly for *pänw-* 'stretch' and *wäs-* 'dress' and probably *wäl-* 'cover'; it can be inferred for *mälw-* (*maĺw-*) 'press'. *nas-*, the present root of the suppletive verb for 'be', could be a further parallel, but since it displays several irregularities, caution is called for (see 2.6.8, p 108).

PRESENT		PRETERITE	
{na$^{ṣä}/_{sa}$-} etc	:	{nāsā-}*	'be'
{pañw$^{ä}/_{a}$-}		{p$^{ä}/_{a}$nwā-}	'stretch'
{maĺw$^{ä}/_{a}$-}		–	'press'
{waĺ$^{ä}/_{a}$-}		{wālā-}	'cover'
{wa$^{ṣä}/_{sa}$-}		{wäsā-}	'dress'

Although a subjunctive is only attested for *wäs-*, i.e. {wäsā-}, based on the opt. {wäsäy-}, it is very likely that an *ā*-subjunctive was regular next to the *ā*-preterite. The alternative, namely a $^{ʾä}/_{a}$-present-subjunctive with derived *ā*-preterite, seems impossible because we would then expect palatalisation and no change of root grade, i.e. **{pañwā-}, **{waĺā-}, **{waṣā-}. The pattern of the derived preterite-subjunctive is not easy to establish: 3pl.prt. *panwar* proves a grading stem, and 1sg.prt. *wse* etc could belong to the same type, but it seems to be middle only. {wālā-} clearly deviates, but it probably has a parallel in *nāṃtsu*, the prt.ptc. of the root *nas-* + *tākā-* 'be'. This preterite participle presupposes a prt. {nāsā-}, with a gradation pattern parallel to that of 'cover'; however, this remains hypothetical because {nāsā-} is not attested as a preterite: the preterite of 'be' is {tākā-}.

The pattern of the present itself is also problematic. In {pañw$^{ä}/_{a}$-} and {maĺw$^{ä}/_{a}$-} the palatalised *ñ* and *ĺ* are certainly found throughout the paradigm, but {waĺ$^{ä}/_{a}$-} and {wa$^{ṣä}/_{sa}$-} are not attested well enough to be certain. Probably, palatalisation spread in the first two verbs because the root-final *w* was unaffected, whereas the other two verbs had normal $^{ʾä}/_{a}$-variants. (On the stem variants of *nas-*, cf above under 2.6.8, p 108.)

The assumption that the present was originally alternating would lead to setting up the root of {maĺw$^{ä}/_{a}$-} as *mälw-* by analogy with *pänw-*. The only counter-argument could be the 3sg. *malywā*, which is normally classified as an imperfect

although the context hardly allows to prove this. It cannot be a preterite for morphological reasons, however, since the root grade is aberrant, as is the preservation of root-final *-ā*. If, unlike the other verbs, *maĺw-* is a present-subjunctive, *malywā* would be a morphological imperfect, possibly (but not necessarily) functioning as a preterite. In that case, the root would need to be set up as *maĺw-*. Since with the forms attested {maĺw$^{ä}/_{a}$-} could be perfectly parallel to *pänw-*, I prefer to set up the root as *mälw-*; accordingly, I would expect a subjunctive {m$^{a}/_{ä}$lwā-}* and a preterite {m$^{ä}/_{a}$lwā-}* (prt.ptc. *mälwo**).

The present of *spārtwā-* 'turn', {sparcw(a)-}, is parallel to *pänw-* and *mälw-* in having palatalisation before the final *w* and in the root grade; however, it also shows forms that have root-final *ā* (surface *a*) in the present, so that it is discussed in 2.6.10 (p 116) under zero-presents with root-final *ā* and *a*-grade in the root.

{a}

a-presents form a coherent, and probably open, category of intransitive verbs with a middle only present. All non-present stems have a root-final *ā*, and the present is probably to be analysed as derived from the preterite-subjunctive. Of some verbs only forms with *ä*-vocalism in the root are attested, but others display root gradation in the preterite-subjunctive, and of this class, no verb offers counterexamples against the assumption that all belonged to one grading type (see 2.6.7, p 103). Some examples are:

PRESENT		PRETERITE-SUBJUNCTIVE		
{yäwa-}	←	no gradation attested	{yäwā-}	'strive for'
{räytwa-}			{räytwā-}	'be connected'
{wäyka-}		sbj. gradation attested	{w$^{a}/_{ä}$ykā-}	'perish'
{säyka-}			{s$^{a}/_{ä}$ykā-}	'overflow'
{säyka-}		prt. gradation attested	{s$^{ä}/_{a}$tkā-}	'spread (intr.)'
{spänta-}			{sp$^{ä}/_{a}$ntā-}	'trust'

Since all verbs in this class are intransitive, we do not expect initial palatalisation in the prt. act.sg. according to the rule formulated and discussed in 2.6.7 (p 103); indeed, it is not found.

{‹n›}

The *n*-infix has two variants: the *nā*-variant and the *ṅk*-variant (see also 2.5.1, p 50). Nasal infix presents are formed to *x*|*ā*-roots (with preterite-subjunctives ending in *-ā*) and they are mostly transitive. The *nā*-variant is in complementary distribution with the *ṅk*-variant: the former is the default formation, whereas the latter is found in verbs with roots ending in *Ckā*, i.e. root-final *ā* preceded by *k* and another consonant. The *nā*-variant assimilates several different preceding consonants: *tn* → *n*, *rkn* → *rn*, *rpn* → *rn*, *rṣtn* → *rṣn*, *ln* → *ll*. However, sometimes assimilation is not

found: *tn* is preserved in {kotnā-} and possibly in {wātnā-}* (based on a damaged imperfect A295a3 *wātñā///*), but changed to *n* everywhere else; *p* is preserved in {wärpnā-}, but lost in {kārnā-}; and the cluster *lpn* is preserved in {kälpnā-}. One is tempted to assume that an inserted *ä* before the *n* could explain the preserved clusters, but with the examples of the nasal presents only, this leads to the complicated rule that insertion took place after the heavy sequences *äRC*, *āC* and *oC*, but not after the light sequence *äC*. Moreover, after *ārC* it was lost again (if it was inserted at all).[65] Some examples:

PRESENT		PRESENT		PRESENT-SUBJUNCTIVE	
{kārp-nā-}	>	{kārnā-}	←	{kārpā-}	'descend'
{käl-nā-}		{källā-}		{k^{a}/$_{ä}$lā-, śälā-}	'obtain'
{kät-nā-}		{känā-}[66]		{k^{ä}/$_{a}$tā-}[67]	'strew'
{tärk-nā-}		{tärnā-}		{t^{a}/$_{ä}$rkā-, cärkā-}	'let go'
{wärp-nā-}		{wärpnā-}		{wärpā-}[68]	'enjoy'
{skāy-nā-}		{skāynā-}		{skāyā-}	'try'

Since *nā*-presents are formed to predominantly transitive verbs, the preterite has initial palatalisation if it is grading, following the rule discussed in 2.6.7 (p 103).

Two verbs display irregularities. *knā-* 'know' forms a *nā*-prs. {knā-nā-}, but combines with an *s*-prt. {kñas-} and a derived subjunctive {kñāñ^{ä}/$_{a}$-} instead of a preterite-subjunctive in *-ā* (see 2.6.6, p 101). *krop-* 'collect' has some unambiguous *nā*-present forms, but it has forms with *ä* beside them, e.g. prs.ptc. *kropnmāṃ*, *kropnämāṃ* vs *kropmāṃ*. Since this short stem is also found in subjunctive function, it is best set up as {krop^{ä}/$_{a}$-}. Although *p* is not palatalisable and the medial *a* of the *a*-variants is in many cases reduced to *ä*, and medial *a* could be identical to the weakened root-final *ā* of the subjunctive {kropā-}, a *'^{ä}/$_{a}$*-stem is preferable since this is the only type attested in present-subjunctive function.

The *ṅk*-variant of the nasal infix presents is completely parallel to the *nā*-variant: it is formed to *x*|*ā*-roots of transitive verbs and grading preterites have initial palatalisation. The difference with *nā*-presents is that *ṅk*-presents are formed to roots in *Ckā*; the ‹n› is infixed between the *k* and the consonant that precedes it. Examples are:

PRESENT		PRETERITE-SUBJUNCTIVE	
{kāt‹n›kā-}	←	{kātkā-}	'rise'
{kät‹n›kā-}		{k^{a}/$_{ä}$tkā-, käckā-}	'cross'

[65] See Kim (2007a) for this theory in general, for the historical explanation, and for many related matters.

[66] The *ä* is always found in an open syllable, so that the present is in fact *knā-*.

[67] Active singular of the preterite not attested.

[68] Middle only.

PRESENT	PRETERITE-SUBJUNCTIVE	
{päls‹n›kā-}	{pälskā-}	‘think’
{mros‹n›kā-}	{mroskā-}	‘feel weary’

In *ṅk*-presents, the root-final *ā* is never weakened because it is preceded by an extra *ä*-syllable, cf weakened *kātka-* or *kātkä-* vs non-weakened *kātäṅkā-*.

{ṣä/sa}

The *ṣä/sa*-suffix is by far the most frequent present suffix. With only a few exceptions, the *ṣä/sa*-presents are formed to reduplicated preterites (with *āṣä/sa*-subjunctives) and *s*-preterites (with mostly *ñä/a*-subjunctives, see 2.6.6, p 101, and 2.6.7, p 105). If the preterite has initial palatalisation or gradation, the *ṣä/sa*-present has no palatalisation and *ä*-grade. Some examples:

PRESENT			PRETERITE	
{tänkṣä/sa-}	←	*s*-preterite	{cank-Ø/sā-}	‘check’
{näkṣä/sa-}			{ñak-Ø/sā-}	‘destroy’
{prakṣä/sa-}			{präk-Ø/sā-}	‘ask’
{kälnṣä/sa-}		reduplicated preterite	{ka-kälnā-}	‘make resound’
{tälṣä/sa-}			{ca-cälā-}	‘lift’
{wäykṣä/sa-}			{wa-wäykā-}	‘remove’

The following *ṣä/sa*-presents follow different patterns:

PRESENT			SUBJUNCTIVE		PRETERITE	
{āksäyṣä/sa-}	←	root, cf	{ākṣäññä/a-}	cf	{ākṣäññā-}	‘announce’
{oksäyṣä/sa-}			{okṣäññä/a-}		{okṣäññā-}	‘grow’
{läntṣä/sa-}			{läñcä/a-}		{läcā-}	‘go out’
{entsäṣä/sa-}	←	root, cf	{entsā-}	=	{entsā-}	‘seize’
{täwṣä/sa-}			{twāsā-}		{twāsā-}	‘light’
{Ílāṣä/sa-}	←	prt.-sbj.	{Ílā-}		{Ílā-}	‘wipe off’
{āyṣä/sa-}	←	sbj.	{āy-}	cf	{wäs-Ø/(s)ā-}	‘give’
{yomnāṣä/sa-}			{yomnā-}		{yom-Ø/sā-}	‘obtain’

It is difficult to see a system in this list: most verbs seem to have a *ṣä/sa*-present only to “solve” irregularities of other stems. This seems to be true especially of ‘seize’, ‘wipe off’ and ‘obtain’, but possibly for ‘light’ as well. ‘announce’ and ‘grow’ are peculiar because of the *i* /äy/ that precedes the suffix (cf also under 2.6.6, p 103). ‘give’ is suppletive: the present and subjunctive stems follow a pattern where otherwise an *s*-preterite would have been regular. ‘go out’ is almost completely irregular, but the preterite participle *laltu*, next to more frequent *lantu*, could fit together with an *s*-preterite, which in turn would fit to the *ṣä/sa*-present. Except for

the nasal in the subjunctive root, the preterite could be a normal *ā*-preterite derived from the subjunctive.

{nāˢä/sa}

nāˢä/sa-presents are rare, and found in isolated patterns:

PRESENT		PRETERITE		SUBJUNCTIVE	
{päknāˢä/sa-}	←	{päkā-}	cf	{päknāk-}	'intend'
{yäknāˢä/sa-}		–		{yäknāk-}	'be careless'
{ynāˢä/sa-}		{yā-}		–	'go'

The parallelism between the three *nāˢä/sa*-presents given here depends of course on the explanation of the *nāk*-subjunctives (see 2.6.6, p 102) and the subjunctive type of *yā-*. If *yā-* is compared with the verbs it resembles most, one would rather expect it to have a prt.-sbj. {yā-}, just like {klā-}, {ĺā-}, {wā-} etc (see 2.6.7, p 104). If the *k* of the *nāk*-subjunctives can receive an alternative explanation, the presents could be lined up with {yomnāˢä/sa-} (see above).

{näˢä/sa}

In addition to the small group of verbs with *a*-subjunctives, there are only two other verbs that form a *näˢä/sa*-present. It is not easy to generalise over *näˢä/sa*-presents: whereas they all seem to form an *s*-preterite (with or without *sā*-suffix), the subjunctives are from different classes.

PRESENT		PRETERITE		SUBJUNCTIVE	PRT.PTC.	
{tämnäˢä/sa-}	←	{tam-}	cf	{cäma-}	*tatmu*	'be born'
{näknäˢä/sa-}		{nak-}		{näka-}	*nanku*	'perish'
{päknäˢä/sa-}		{pak-}		{päka-}	*pakku*	'boil; ripen'
{wäl(l)äˢä/sa-}		{wäl-Ø/sā-}		{wäla-}	*walu*	'die'
{tˢäknäˢä/sa-}		{tˢak-}		{tˢäka-}	*tsatsku*	'burn'
{kʷämnäˢä/sa-}[69]		–		{śämä/a-}	*kakmu*	'come'
{räynäˢä/sa-}		{räy-Ø/sā-}		{räyñä/a-}	*raryu*	'give up'
{kläynäˢä/sa-}		–		{kläyñä/a-}[70]	–	'be necessary'

Next to {kʷämnäˢä/sa-}, no preterite is attested, but the preterite participle *kakmu* is compatible with the *s*-preterites of the other verbs. {mäska-} 'be', which was tentatively added to the *a*-subjunctives, functions as a present and has no *näˢä/sa*-present beside it. The appurtenance of *räy-* to this group of presents is relatively

[69] The inflexion of this present is discussed in 4.3.1 (p 351).
[70] Next to secondary {kĺäyñä/a-}.

clear because the preterite and the preterite participle have no *n*. Two verbs that are parallel to *räy-*, however, are not easy to classify because one has an *n* in the preterite and the other has an *n* in the preterite participle (the appurtenance of *kläy-* or *kläyn-* is not completely certain exactly because no other stems than the present and the subjunctive are attested):

PRESENT	SUBJUNCTIVE	PRETERITE		PRT.PTC.	
{räynäˢᵃ/ₛₐ-}	{räyñᵃ/ₐ-}	[−n]	{räy-∅/ₛₐ-}	[−n] *raryu*	'give up'
{säynäˢᵃ/ₛₐ-}	{säyñᵃ/ₐ-}	[+n]	{säyn-∅/ₛₐ-}	[−n] *sasyu*	'satisfy'
{āwnäˢᵃ/ₛₐ-}	{āwñᵃ/ₐ-}	[−n]	{āw-∅/ₛₐ-}	[+n] *onu*	'hit; start'

The difficulty with *säy-* and *āw-* is that the *n* seems to be part of the root in the prt. {säyn-∅/ₛₐ-} and the prt.ptc. *onu* respectively, which would make the presents ˢᵃ/ₛₐ-presents. However, if this analysis is followed, the missing *n* in the prt.ptc. *sasyu* and the prt. {āw-∅/ₛₐ-} is unexplained. Thus, there seems to be no other way than to view these roots as "hybrid" *säy-n-* and *āw-n-*, respectively; unfortunately, this notation gives no clue as to where the *n* is found and where it is not.

2.6.10 ZERO PRESENTS OR INTERNALLY DERIVED PRESENTS

The analysis of stem patterns presented in this whole section 2.6 (p 94) is fully based on suffixes. This means that if the suffix of two stems is the same, but there is another distinctive feature, they are still analysed as zero-derived stems. As it turns out, quite a few Tocharian A zero presents have such a distinctive feature: a different grade of the root; that is, the present and the preterite-subjunctive have the same suffix, but differ in root grade, so that we could also term them "internally derived". Logically, if the present and subjunctive stems do not have another distinctive feature, they are the same and thus they are present-subjunctives. Most present-subjunctives do not have a root-final *ā*, so that the preterite is different as it is derived with an *ā*-suffix. In spite of the bad attestation of the verbs in question, we can assume that if the present-subjunctive ended in *ā*, all stems of the verb were identical (cf *täkwā-* and *wäypā-* below). We find present-subjunctives with the suffixes {ʾᵃ/ₐ} and {ññᵃ/ₐ}; presents that differ only in root grade from the subjunctive have the suffix {ā} (some of these could also be analysed as having a suffix {a}, cf below).

{ā}

Of some verbs, we know the present and subjunctive stems and we can be certain of the pattern. Since there are no presents derived from preterites or subjunctives by means of an *ā*-suffix, all isolated forms which prove the existence of a present stem in *ā* have been ranged here, too, assuming that the preterite-subjunctive also ended in *-ā* and the present therefore was a zero-present. If there is a difference in root grade, it is the present that has *ä*-grade in the root whereas the preterite-subjunctive

has *ā*-grade. This pattern is reminiscent of that of some verbs with primary presents discussed under 2.6.8 (p 107).

PRESENT		PRETERITE-SUBJUNCTIVE			PRT.PTC.	
{päywā-}	:	(*ā*-grade)	–	cf	*pāpey(u)*	'blow'
{plänkā-}			–		*pāpläṅku*	'pinch'
{mäntā-}			{māntā-}		*māmäntu*	'hurt'
{räpā-}			{rāpā-}		*rārpu*	'dig'
{räpā-?}			{rāpā-?}		–	'make music'
{pällā-}			{pālā-}		*pāplu*	'praise'
{täkwā-}		(*ä*-grade)	{täkwā-}		–	'?'
{wäypā-}			–		*wipo*	'be humid'
{räwā-}		?	–		–	'tear out'
{ṣkäytā-}			–		–	'seem'?

For the verbs 'hurt' and 'dig' the gradation pattern is attested directly and for 'blow' and 'pinch' it can be inferred from the preterite participle, which presupposes a prt.-sbj. with *ā*-grade. The verb for 'make music' is uncertain altogether: attested are a 3pl. *rpeñc* and a restored agent noun *rā(pä)ntāñ*. If these two forms are to be united in one stem pattern, they must belong here, as *ä* : *ā* gradation in *ä|ā*-roots is found only in this group of verbs. *pälā-* must be mentioned here because of its gradation pattern, but it has a difference between *ll* in the present versus *l* in the preterite-subjunctive, too, which points to a *nā*-suffix in the present (cf 2.5.8, p 90). {täkwā-} and {wäypā-} are certainly presents because of the infinitives *täkwātsi* and *wipāsi*; the vn *täkwālune* proves the non-grading pattern for the first verb, and it is suggested for the second by the prt.ptc. *wipo*. {räwā-} is also certain because of an inf. *rwātsi*, but since no other stems are attested, its pattern is further unclear. *ṣkitā(nträ)* A58a6, apparently with a stem {ṣkäytā-}, is tentatively analysed as a present and would then belong here, but it is a restored form of unknown meaning.

{ā} with *a*-grade in the root

Zero-derived or internally derived presents of this class have a root-final vowel *a* and they are traditionally seen as presents with a suffix *a*, but this analysis is clearly based on Tocharian B parallels. Within Tocharian A, the only parallelism with *a*-presents is that both are middle only. They also agree in having a preterite-subjunctive in *-ā*, but this is so common that it can hardly be considered important enough. Synchronically, the only difference between the present and the preterite-subjunctive is a difference in root grade: the present has *a*-grade, the preterite-subjunctive *ā*-grade. Since some verbs with *ä|ā*-roots have a preterite-subjunctive in *ā*, it is the easiest to analyse all stems with final *-a* as having underlying *ā* weakened to *a* after a

heavy vowel.[71] Some examples of the commoner type with an *ā*|*ā*-preterite-subjunctive:

PRESENT		PRESENT		PRETERITE-SUBJUNCTIVE		
{asā-}	>	{asa-}	: {āsā-}	>	{āsa-}	'dry'
{plantā-}		{planta-}	{plāntā-}		{plānta-}	'be pleased'
{sakā-}		{saka-}	{sākā-}		{sāka-}	'stay behind'
{tˢarwā-}		{tˢarwa-}	{tˢārwā-}		{tˢārwa-}	'be comforted'

A small group has initial palatalisation in the present. It is in this group that we find gradation in the preterite-subjunctive:

PRESENT		PRETERITE-SUBJUNCTIVE	
{śamā-}	:	{tˢämā-}[72]	'grow'
{śalcā-}			?
{śalpā-}		{tˢa/älpā-}	'be redeemed'

{śalcā-} is isolated, but structurally it fits well to the other verbs with initial *ś-*, so that the root is probably to be set up as *tˢältā-* or *tˢāltā-*. One verb has a pattern that is completely isolated, but it is without doubt best compared with the three verbs above because it also has initial *tˢ* that is palatalised to *ś* in the present: *tˢārtā-* 'weep' with a preterite {tˢārtā-} and a present {śertä-}, possibly {śertā-}. On the basis of {śamā-} and {śalpā-}, we would rather expect {śartā-}; if the uncertain {śalcā-} is to be compared, perhaps {śarcā-}. However, the existence of forms with unpalatalised root final {śertä-} is absolutely certain, and even with Winter's restoration *śe(rct)ār* for the 2sg.mid. in A79b1 (1991a: 47), the *c* remains hypothetical.

The present of *spārtwā-* 'turn' is difficult to analyse, but it may belong here. Although *sparcwṣ-äṃ* A253b1 seems to point to a *'ä/a*-suffix, i.e. {sparcw-ṣ-n}, its well-attested middle counterpart *sparcwaträ* suggests an *ā*-suffix weakened to *a*. The active form suggests appurtenance to the type of *pänw-* 'stretch', whereas the middle form points to {śamā-}, {śalcā-}, etc; the prt.-sbj. {spārtwā-} would fit both.

2.7 STEM DERIVATION IN TOCHARIAN B

For the general principles behind the stem analysis given here see the introduction to the section on Tocharian A, 2.6 (p 94). There are two points to be noted. The first is that for Tocharian A I have analysed preterite-subjunctives as primary preterites

[71] It is important to note that if the root final is analysed as *a* instead, this would isolate the preterite-subjunctive since we find *a* nowhere else; if only the present is analysed as having *a*, but the preterite-subjunctive as having *ā*, this would introduce a contrast that is not only invisible, but also superfluous, since this does not account for the distinctive root grade.

[72] No forms that should have *a*-grade are attested.

with a zero-derived subjunctive because more subjunctives are derived from preterites than the other way round. For Tocharian B, I follow exactly the same method. However, in this language subjunctives are only rarely derived from preterites, whereas preterites derived from subjunctives are quite common. Therefore, identical subjunctives and preterites are analysed as primary subjunctives with zero-derived preterites, and the combination is called "subjunctive-preterite". The second point is that like for Tocharian A, I analyse the traditional class 3 *s*-preterite as a root preterite to *x*|Ø-roots, with a *sa*-suffix as an inflectional peculiarity (see 2.5.1, p 55). This has the advantage that the number of subjunctive-preterites increases drastically, since the combination of *s*-preterites and *x*|Ø-root subjunctives is rather frequent: after all, the most frequent forms of this preterite have no *sa*-suffix, nor has the related preterite participle. In addition, the gradation variants are the same (even though their distribution is different).

2.7.1 OVERVIEW

The symbols and conventions in the scheme below are the same as those for Tocharian A, see 2.6.1 (p 95).

primary preterites	TEB			TEB
		↗	ʾ^{ə}/$_{e}$-PRS	2
		↗	ś^{ə}/$_{se}$-PRS	8
		↗	ṣṣ^{ə}/$_{ske}$-PRS	9
x|Ø-√-PRT	3	↘	*x*|Ø-√-SBJ	1
		↗	ś^{ə}/$_{se}$-PRS	8
		↗	ṣṣ^{ə}/$_{ske}$-PRS	9
x|Ø-√-PRT	3	↘	ʾ^{ə}/$_{e}$-SBJ	2
		↗	ś^{ə}/$_{se}$-PRS	8
		↗	*n*ə^{ṣṣə}/$_{ske}$-PRS	10
x|Ø-√-PRT	3	↘	Ø/$_{e}$-SBJ	3

primary subjunctives	TEB			TEB
		⇗	*ə*|*a*-√-PRS	5
ə|*a*-√-SBJ	5	↘	*a*|*a*-√-PRT	1
		(= *lyāka*-type)		
		↗	*e*-PRS	3
		↗	*o*-PRS	4
		↗	*na*-PRS	6
		↗	‹n›-PRS	7
		↗	ṣṣ^{ə}/$_{ske}$-PRS	9
x|*a*-√-SBJ	5	↘	*x*|*a*-√-PRT	1

primary presents	TEB			TEB			TEB
ʾ^{ə}/$_{e}$-PRS (including *ññ*^{ə}/$_{e}$-presents)	2	⇒	ʾ^{ə}/$_{e}$-SBJ	2	→	*a*-PRT	1

no primary stem				TEB			TEB
		↗	ṣṣ^{ə}/$_{ske}$-PRS	9			
root		↘	ʾ^{ə}/$_{e}$-SBJ	2	→	*a*-PRT	1
		↘	ʾ*əy*-SBJ	4	→	*a*-PRT	1
		↗	ṣṣ^{ə}/$_{ske}$-PRS	9	⇒	ṣṣ^{ə}/$_{ske}$-SBJ	9
root		↘	caus. PRT	2			
		↗	ʾ^{ə}/$_{e}$-PRS	2			
		↗	ś^{ə}/$_{se}$-PRS	8			
		↗	ṣṣ^{ə}/$_{ske}$-PRS	9			
		↗	*ññ*^{ə}/$_{e}$-PRS	12			
root		↘	*a*-SBJ	5	⇒	*a*-PRT	1

2.7.2 PRIMARY PRETERITES

By definition, only those preterites are primary from which the subjunctive, or in some cases the present, is derived. The following subjunctives are derived from the preterite: {ʾə/e}, {Ø/e}, {na}.

{ʾə/e}

The ʾə/*e*-suffix derives some subjunctives from *s*-preterites. The following verbs have this pattern:

PRETERITE		SUBJUNCTIVE	
{treyk-Ø/sa-}	→	{trəyśə/ke-}	'err'
{pᵉ/əÍk-Ø/sa-}		{pəlśə/ke-}	'burn'
{plenk-Ø/sa-}		{pÍənᶜə/ke-}	'sell'
{Íᵉ/əwk-Ø/sa-}		{Íəwśə/ke-}	'light up'
{ṣerp-Ø/sa-}		{ṣərpᵊ/e-}	'point out'

Three more verbs most likely belong to the same group, but their preterite is not attested (subjunctive stems cited): {wəyśə/ke-} 'keep away from', {ṣpərśə/ke-} 'disappear', {tˢərśə/ke-} 'burn'. It is striking that 7 out of 8 have a root ending in *-k* and one has another stop, *-p*.

{Ø/e}

The Ø/*e*-suffix also derives subjunctives from *s*-preterites. These *s*-preterites are all characterised by a non-grading preterite stem with *e*-grade, while the roots themselves are gradable; that is, these preterites have *e*-grade in the middle, where otherwise *ə*-grade is regular. The following verbs have this pattern:

PRETERITE		SUBJUNCTIVE	
{tem-Ø/sa-}	→	{cəmØ/e-}	'be born'
{ken-Ø/sa-}[73]		{kənØ/e-}	'come about'
{kes-Ø/sa-}		{kəsØ/e-}	'go out'
{nek-Ø/sa-}		{nəkØ/e-}	'perish'
{tˢek-Ø/sa-}		{tˢəkØ/e-}	'burn'

Of the verb 'boil, ripen' with the subjunctive {pəkØ/e-} no preterite is attested, but it certainly follows the same pattern.

[73] The preterite of *kən-* is probably attested in 3sg. *kentsa* B522b7, where 'arose; came to be' gives a much better translation than 'on the earth' of Carling (2000: 79). A further instance might be *keṃtsa* THT1300a4, while the bulk of the other attestations are rather perl.sg. forms of *keṃ* 'earth' (e.g. B133b5, B304b5, B345b2, B370b1, IT127b1, IT127b2, IT169a1).

{n a}

The *na*-suffix is problematic because most *na*-subjunctives have something irregular.

PRETERITE		SUBJUNCTIVE	
{kəryá-}	→	{kərná-}	'deal'
{kəlpá-}		{kəllá-}	'obtain'
{pəká-}		{pəkná-}	'intend'

The preterites of the verbs 'be careless', sbj. {yəkná-}, and 'oppress', sbj. {málla-}, are not attested, but the preterite participle of the first proves the same pattern, and if *m(a)mālo(ṣ)* B159b6 is the preterite participle of the second, it fits the pattern, too. The *na*-subjunctives are a difficult category because in {málla-}, and {kə́lla-} we find gemination of the *l* of the root, which is perhaps rather to be analysed as a morphological feature itself (if not a morphological irregularity, see 2.5.8, p 90), and in {kərná-} the final *y* of the root has disappeared; the only "real" *na*-subjunctives are {pəkná-} and {yəkná-}.

2.7.3 DERIVED PRETERITES

Derived preterites are relatively easily described: they are formed with the suffix {a} from subjunctives or from the root; if the subjunctive has a grading suffix, it is formed to the *ə*-variant of it. These secondary preterites fall into two basic categories: those derived from a subjunctive with a grading suffix and those derived from *'əy*-subjunctives. A large number of the subjunctives with a grading suffix are present-subjunctives, but since there are quite a number with a derived present, too, it is clear that the preterite is derived from the subjunctive, not from the present.

The only exception is the preterite of 'do', {yamə́ṣṣ-a-}, which is clearly derived from the present {yamə́$^{ṣṣə}/_{ske}$-} instead of the subjunctive {yam-}. {yamə́ṣṣ-a-} is further peculiar in having a prt.ptc. *yāmu*, *yāmoṣ* and an ipv. {-yam$^{Ø}/_{sa}$-}, where ***yamaṣṣu*, *yamaṣṣoṣ* and **{-yamə́ṣṣa-} would have been regular.

Preterites derived from subjunctives with a grading suffix are numerous and some examples will suffice:

	SUBJUNCTIVE		PRETERITE	
(only) sbj.	{ak$^{ṣə}/_{se}$-}	→	{akṣ-á-}	'announce'
	{weñ$^{ə}/_{e}$-}		{weñ-á-, wñ-á-}	'say'
	{ya$^{ṣṣə}/_{ske}$-}		{yaṣṣ-á-}	'beg'
prs.-sbj.	{ka$^{tke}/_{ccə}$-}	→	{kacc-á-}	'be glad'
	{kĺew$^{ṣə}/_{se}$-}		{kĺewṣ-á-}	'hear'
	{k^{w}əypeññ$^{ə}/_{e}$-}		{k^{w}əypéññ-a-}	'be ashamed'
	{yátə$^{ṣṣə}/_{ske}$-}		{yátəṣṣ-a-}	'tame'

Preterites derived from *'əy*-subjunctives are not very well attested, just like the *'əy*-subjunctives themselves. Nevertheless, the general pattern seems to be clear. Four preterites are attested:

SUBJUNCTIVE		PRETERITE	
{akĺə́y-}	→	{akĺə́y-a-}	'learn'
{kəĺpə́y-}		{kəĺpə́y-a-}	'steal'
{laĺə́y-}		{laĺə́y-a-}	'be tired'
{wəṣə́y-}		{wəṣə́y-a-}	'dwell'

Besides, we find the subjunctives {awkṣəy-} of 'grow', {kərśəy-} of 'chop', and {śerəy-} of 'hunt', which are very likely to match the four verbs above completely, although their preterites are unfortunately not attested.

One substantial category of preterites, that of the "strong causative preterites", is not derived from the subjunctive, but from the root instead. Since the suffix found in the present and subjunctive, {$^{ṣṣə}/_{ske}$}, is more salient than the *a*-suffix of the preterite, one could be tempted to derive the present (-subjunctive) from the preterite rather than the latter from the (present-) subjunctive. A good argument to actually do so is the existence of present-subjunctive forms with a medial *a* (see 2.7.9, p 133). However, the most frequent pattern clearly has no such medial *a* and since there is no (synchronic) rule to let it drop, we have to derive both the preterite and the present-subjunctive from the root. This preterite is formed with the preterite suffix *a*, it has *a*-grade in the root, and initial palatalisation. The palatalisation patterns of this class are peculiar as they include several palatalisation products that are attested only here (see especially 2.5.4, p 72). Some examples are:

CAUSATIVE PRETERITE		ROOT		PRESENT-SBJ.	
{kyána-}	←	*kən-*	cf	{kə́nə$^{ṣṣə}/_{ske}$-}	'fulfill'
{cála-}		*təl-*		{tə́lə$^{ṣṣə}/_{ske}$-}	'lift'
{ñárka-}		*nərk-*		{nə́rkə$^{ṣṣə}/_{ske}$-}	'keep away'

2.7.4 ZERO PRETERITES

"Zero preterites" are preterites that have the same stem as the corresponding primary subjunctive. Zero preterites divide into four types: 1) the *s*-preterite, which matches the *x*|Ø-root subjunctive, whereas the other three are *x*|*a*-root preterites, which may have 2) initial palatalisation in the active if they combine with grading subjunctives, 3) initial palatalisation and *a*-grade in the root, or 4) a stable root grade (*ə*, *a* or *o*).

sub 1) The *s*-preterite to gradable roots generally has *e*-grade in the active and *ə*-grade in the middle, and its corresponding *x*|Ø-root subjunctives have *e*-grade in the active singular and *ə*-grade in the active plural and the middle. Some examples are:

SUBJUNCTIVE		PRETERITE	
{awn-}	≈	{awn$^{Ø}/_{sa}$-}	'hit; start'
{k$^{e}/_{ə}$w-}		{kew-$^{Ø}/_{sa}$-}	'pour'
{t$^{e}/_{ə}$k-}		{tek-$^{Ø}/_{sa}$-}	'touch'
{p$^{re}/_{rə}$k-}		{pr$^{e}/_{ə}$k-$^{Ø}/_{sa}$-}	'ask'

A different full grade vowel but essentially the same gradation pattern is found with sbj. {y$^{o}/_{ə}$p-}, prt. {yop-$^{Ø}/_{sa}$-} of 'enter'.

sub 2) Initial palatalisation in the active singular of the preterite is only found in gradable roots. All subjunctives attested to this pattern have gradation, *a* : *ə* (before *a*): *a* in the active singular and *ə* in the active plural and the middle. Some examples:

SUBJUNCTIVE		PRETERITE	
{k$^{á}/_{ə}$ta-}	≈	{$^{ś}/_{k}$ətá-}	'strew'
{t$^{á}/_{ə}$rka-}		{$^{c}/_{t}$ərká-}	'let go'
{l$^{a}/_{ə}$wa-}		{Ĺəwá-}[74]	'sit down'
{st$^{á}/_{ə}$ma-}		{ścəmá-}[74]	'stand'

sub 3) Initial palatalisation in the preterite combined with *a*-grade is found only with a handful of verbs:

PRESENT-SUBJUNCTIVE			PRETERITE	
prs.-sbj.	{pəlwá-}	≈	{pĺawá-}	'complain'
	{śəwá-}		{śawá-}[75]	'eat'
prs.-sbj. ~ sbj.	{ləká-}		{Ĺaká-}	'see'

To a fourth preterite of this kind, {Ĺawá-} of 'rub', no subjunctive or present-subjunctive is attested, but it displays exactly the same gradation pattern and probably belongs here (cf the preterite participle in abs. *lyelyuwormeṃ* with the characteristic *ə*-grade in the root, and no root-final *a*; see 2.9.2, p 148).

sub 4) Zero preterites to *a*|*a*-roots are extremely frequent, with around 120 instances. Here are some representative examples:

SUBJUNCTIVE		PRETERITE	
{káwta-}	≈	{kawtá-}	'chop'
{kláya-}		{klayá-}	'fall'
{plánta-}		{plantá-}	'be pleased'
{wáya-}		{wayá-}	'lead'

[74] No middle attested.

[75] In this verb the palatalisation is not visible, of course. When I studied the variation between 3sg.prt. *śāwa* and *śuwa*, I had overlooked the parallelism to 'see' and 'complain' (Peyrot 2008a: 145-146). However, the explanation of the late stem form {śəwá-} given there is still valid.

SUBJUNCTIVE		PRETERITE	
{wáska-}		{waská-}	'move'
{wárpa-}		{wərpá-}	'enjoy'
{skára-}		{skará-}	'scold'
{spərká-}	=	{spərká-}	'disappear'
{tˢəmá-}		{tˢəmá-}	'grow'

In the majority of cases, we find a systematic difference in accent: the subjunctive has initial accent and the preterite has suffix accent. As described in 2.5.7 (p 85), most subjunctives have initial accent, except for those with only *ə*-vocalism in the root. Thus, the zero preterites to the grading subjunctives under 2) and the subjunctives with *a*-grade under 4) are no zero derivations in the strict sense because the accent shifts.

One could be tempted to extend the general rule for preterite derivation, namely *a*-suffixing, to include these zero preterites, too: a sbj. {kláya-} could perhaps move its accent because another *a* is suffixed, i.e. {kláya-a-} > {klayá-}. Such an analysis is problematic because there is no independent evidence for *a.a* becoming *a*, and we do not see the accent move in other derived preterites, like {kəĺpə́y-} → {kəĺpə́y-a-} or {yátəˢˢˢə/ˢke-} → {yátəṣṣ-a-}. A further problem is that this rule fails to capture a very similar accent movement in the *s*-preterite: cf {tᵉ/ə́k-} → {tek-Ø/ˢa-} with {tek-ˊ} or {prᵉ/ə́k-} → {prᵉ/ək-Ø/ˢa-} with {prek-ˊ}. Therefore, I will just treat the subjunctive and preterite stems as identical, except for a difference in accent that is inexplicable in synchronic terms.

Since subjunctives with stable *ə*-vocalism have suffix accent, we find exact matches with the preterite under 4).[76]

One verb has a unique pattern, 'come'. It forms a preterite and a subjunctive with the same suffix, but with different root grades: sbj. {śə(n)mᵊ/ₑ-}, prt. {śemə́-, kəmé-}, prt.mid. {kəm(ə́)sa-}.

2.7.5 PRIMARY SUBJUNCTIVES

The largest group of subjunctives is formed by primary subjunctives, i.e. subjunctives of which the present and the preterite are derived (the latter mostly through zero derivation, see 2.7.4, p 122). There are four main types, according to the four root types distinguished in 2.4 (p 44): to 1) *ə*|Ø-roots, 2) *a*|Ø-roots, 3) *ə*|*a*-roots, and 4) *a*|*a*-roots.

sub 1) Primary subjunctives to *ə*|Ø-roots have *e*-grade in the active singular and *ə*-grade in the other forms, and they seem to have initial accent, as far as can be determined. They correspond to *s*-preterites (with gradation). Some examples:

[76] In type 2), the accent is not distinctive either, but there the preterite has a distinctive root grade *a*.

SUBJUNCTIVE		PRETERITE	
{t^{é}/$_{ə}$k-}	≈	{tek-^{Ø}/$_{sa}$-}	‘touch’
{pr^{é}/$_{ə}$k-}		{pr^{e}/$_{ə}$k-^{Ø}/$_{sa}$-}	‘ask’
{p^{Íé}/$_{lə}$w-}		{pÍew-^{Ø}/$_{sa}$-}	‘float’

One verb has *o*-grade where we would expect *e*-grade: sbj. {y^{o}/$_{ə}$p-} and prt. {yop-^{Ø}/$_{sa}$-} of ‘enter’.

sub 2) Primary subjunctives to *a*|Ø-roots also seem to have initial accent and they correspond to *s*-preterites without gradation, e.g.:

SUBJUNCTIVE		PRETERITE	
{awn-}	≈	{awn-^{Ø}/$_{sa}$-}	‘hit; start’
{plak-}		{plak-^{Ø}/$_{sa}$-}	‘agree’
{sayn-}		{sayn-^{Ø}/$_{sa}$-}	‘rest on’

The verb ‘do’ has a different preterite, irregularly derived from the present: sbj. {yam-}, prt. {yamáṣṣ-a-}; however, its preterite participle *yāmu*, *-oṣ* is clearly not derived from {yamáṣṣ-a-}, whereas it would fit well to an *s*-preterite **{yam-^{Ø}/$_{sa}$-} (see 2.9.2, p 150). An exception could be sbj. {kləyn-} of ‘be necessary’ if it has a gradable prt. {kleyn-^{Ø}/$_{sa}$-}. The subjunctive of ‘go’, {y(ən)-}, is not grading either, but the stem pattern of this verb is difficult to compare because it has only a prs.-sbj. and an ipf. stem (see 2.5.5, p 78). With two verbs we find *o*-vocalism in the root, which could point to a variation of the pattern of the gradable subjunctives, but the number of *o*-grade forms attested is too small to be certain: sbj. {^{o}/$_{a}$r-} and prt. {^{o}/$_{a}$r-^{Ø}/$_{sa}$-} of ‘abandon’; sbj. {k^{o}/$_{a}$w-} and prt. {kaw-^{Ø}/$_{sa}$-, kow-^{Ø}/$_{sa}$-} of ‘kill’.

sub 3) Primary subjunctives to *ə*|*a*-roots have *a*-grade in the active singular and *ə*-grade in the other forms, as well as initial accent. They correspond to *ə*|*a*-root preterites with initial palatalisation in the active (if possible), e.g.:

SUBJUNCTIVE		PRETERITE	
{k^{á}/$_{ə}$la-}	≈	{^{ś}/$_{k}$əlá-}	‘bring’
{t^{á}/$_{ə}$rka-}		{^{c}/$_{t}$ərká-}	‘let go’
{m^{á}/$_{ə}$rsa-}		{mərsá-}	‘forget’
{s^{á}/$_{ə}$lka-}		{səlká-}[77]	‘pull out’
{t^{sá}/$_{ə}$nka-}		{t^{s}ənká-}	‘rise’

A very large group of subjunctives with *ə*-vocalism in the root could display the same gradation formation pattern, while the relevant forms that would have *a*-grade are

[77] No active forms attested.

lacking, mostly – but not always – for structural reasons, such as with middle only subjunctives.

SUBJUNCTIVE		PRETERITE	
{kárka-}	≈	{$^{ś}/_{k}$ərká-}	'rob'
{krəmpá-}	=	{krəmpá-}	'be disturbed'
{mənká-}	=	{mənká-}	'be inferior'
{spərká-}	=	{spərká-}	'disappear'
{$t^{sá}$/ənka-}	≈	{t^{s}ənká-}	'rise'

However, some of these do not display the expected palatalisation in the corresponding active preterite forms: sbj. and prt. {k^{w}əlá-} of 'fail', sbj. and prt. {plənká-} of 'be sold', sbj. and prt. {sətká-} of 'spread'.

sub 4) Primary subjunctives of *a*|*a*-roots have a systematic difference in accent, the subjunctive having initial and the preterite suffix accent. Otherwise the stems are identical and unchangeable, e.g.:

SUBJUNCTIVE		PRETERITE	
{kárpa-}	≈	{karpá-}	'descend'
{táka-}		{taká-}	'be'
{páyka-}		{payká-}	'paint; write'
{pála-}		{palá-}	'praise'
{wláwa-}		{wlawá-}	'control oneself'

2.7.6 DERIVED SUBJUNCTIVES

A minor group of subjunctives is derived from the preterite. There are four suffixes: {ʾə/e}, {Ø/e}, {na}. For a discussion and examples, see 2.7.2 (p 120).

An even smaller group is not derived from the preterite, but from the root, whereas the preterites to these verbs can best be seen as derived from the subjunctive. The suffixes for this type of derivation are {ʾə/e}, {ʾəy}, {a}.

{ʾə/e}

The *ʾə*/*e*-subjunctives that are not derived from the preterite follow one pattern: they all have a *ṣṣə*/*ske*-present next to them that seems to be formed from the root because neither the *ə*-variant nor the *e*-variant of the subjunctive stem can have served as a base:

SUBJUNCTIVE		PRESENT	
{$ak^{sə}$/se-}	:	{aksá^{ṣṣə}/ske-}	'announce'
{$a^{sə}$/se-}		{ásə^{ṣṣə}/ske-}	'fetch'
{ya^{ṣṣə}/ske-}		{yaská^{ṣṣə}/ske-}	'beg'

In *weñ-*, the verb for 'say', we cannot decide whether the present is formed to the root or to the subjunctive because the root-final *ñ*^{ə}/$_{e}$ is suppressed completely: sbj. {weñ^{ə}/$_{e}$-} : prs. {we(ñ)^{ṣṣə}/$_{ske}$-}. The verb 'come' seems to fit the same pattern, except for the additional *n* in the root of the present. If the subjunctive stem with *n* in the root is taken as the basic one, the set sbj. {śə(n)m^{ə}/$_{e}$-} : prs. {kənmá^{ṣṣə}/$_{ske}$-} is parallel to the three verbs above. However, the *n* is certainly not part of the root proper, as it is not found in the preterite and the preterite participle. Consequently, 'come' must owe its root-*n* in the subjunctive to exactly this pattern, but originally followed another one. Synchronically, therefore, the *n*-subjunctives belong here, while *n*-less forms belong under 2.7.9 (p 135; cf Peyrot 2008a: 147-148).

{'əy}

'əy-subjunctives follow one pattern: they all pattern with ^{ṣṣə}/$_{ske}$-presents that clearly lack the subjunctive suffix, so that both must be derived from the root:

SUBJUNCTIVE		PRESENT	
{akĺáy-}	:	{aklá^{ṣṣə}/$_{ske}$-}	'learn'
{awkṣáy-}		{awksə^{ṣṣə}/$_{ske}$-}	'grow'
{kəĺpáy-}		{kəlpá^{ṣṣə}/$_{ske}$-}	'steal'
{laĺáy-}		{lalá^{ṣṣə}/$_{ske}$-}	'be tired'
{wəṣáy-}		{wəsá^{ṣṣə}/$_{ske}$-}	'dwell'

To the subjunctives {kərśəy-} 'chop' and {śerəy-} 'hunt' no presents are attested, but otherwise they conform to the pattern.[78]

{a}

a-subjunctives are formed to the root of some verbs with $^{'ə}$/$_{e}$-, ^{ṣə}/$_{se}$-, ^{ṣṣə}/$_{ske}$-, or *ññ*^{ə}/$_{e}$-presents. We find:

SUBJUNCTIVE		PRESENT		
{p^{á}/$_{ə}$nna-}	:	$^{'ə}$/$_{e}$-prs.	{peññ^{ə}/$_{e}$-}	'stretch'
{tráska-}			{tre^{ṣṣə}/$_{ske}$-}	'chew'
{yə́wka-}	:	^{ṣə}/$_{se}$-prs.	{yəwk^{ṣə}/$_{se}$-}	'conquer'
{láwpa-}			{ləwp^{ṣə}/$_{se}$-}	'smear'
{yənmá-}	:	^{ṣṣə}/$_{ske}$-prs.	{yənmá^{ṣṣə}/$_{ske}$-}	'reach'
{sámpa-}			{sompá^{ṣṣə}/$_{ske}$-}	'take away'

[78] It must be admitted that *kərśəy-* could also be an opt. to a $^{'ə}$/$_{e}$-present (Winter 1977: 140).

SUBJUNCTIVE			PRESENT		
(*a*-grade)	{náytta-}	:	*ññᵊ/e*-prs.	{nəyttə́ññᵊ/e-}	'break down'
	{mánta-}			{məntə́ññᵊ/e-}	'destroy'
	{máywa-}			{məywəññᵊ/e-}	'tremble'
	{wáska-}			{wəskə́ññᵊ/e-}[79]	'move'
	{tˢáyka-}			{tˢəykə́ññᵊ/e-}	'form'
(grading)	{kᵃ/əská-}	:	*ññᵊ/e*-prs.	{kəskəññᵊ/e-}	'scatter'
	{klántˢa-}[80]			{klənˈtˢə́ññᵊ/e-}	'sleep'

If the sbj. {rássa-} 'tear out' has a regular present formation, it belongs to the group of *ˈᵊ/e*-presents above. However, there are problems with a present stem {rəˢˢᵉ/ʂʂə-} and perhaps an irregular stem {rəʂʂəy-} accounts best for the forms attested. To the present {rəsəññᵊ/e-} 'stretch' no subjunctive is attested, but otherwise it fits the above pattern, cf the preterite participle in abs. *rsormeṃ* (since no secure example of non-grading *ə* in the subjunctive root is attested, the subjunctive may have been {rᵃ́/ə́sa-}).

2.7.7 ZERO SUBJUNCTIVES

A large number of subjunctives seem to be derived from the present through zero derivation: the subjunctive and present stems are identical, hence "present-subjunctives", but the suffixes otherwise derive only presents, so that the presents are likely to be primary. There is a very large group with the *ʂʂᵊ/ske*-suffix, among which many causative present-subjunctives, and two smaller groups with *ˈᵊ/e-* and *ññᵊ/e*-suffixes. Yet a fourth group of present-subjunctives could theoretically be analysed as primary subjunctives with zero-derived presents because their suffix {a} does not otherwise form presents. However, such a derivation path is not found otherwise and historically these present-subjunctives are just presents that end in *-a* (see 4.4.3, p 393, and 4.4.5, p 395), so that they are better analysed as regular primary presents with zero-derived subjunctives.

{ʂʂᵊ/ske}

The *ʂʂᵊ/ske*-present-subjunctives are divided into two groups: causatives and non-causatives. A causative *ʂʂᵊ/ske*-present-subjunctive may be recognised through the existence of a non-causative verb next to it, but it is also characterised by its initial accent, which allows us to set up "causatives only". Another difference is that causative *ʂʂᵊ/ske*-present-subjunctives generally have no *a* directly before the *ʂʂᵊ/ske*-suffix, whereas non-causatives may have such an *a* (see Malzahn forth.a and 4.4.6, p 398). Some examples:

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[79] On present forms with the stem {waskə́ññᵊ/e-}, see Peyrot (2008a: 154-155).
[80] Possible *a*-grade forms are not attested.

non-causative	{alá^{§§ə}/$_{ske}$-}	‘be ill’
	{satá^{§§ə}/$_{ske}$-}	‘exhale’
causative	{kátkə^{§§ə}/$_{ske}$-}	‘please’
	{kérə^{§§ə}/$_{ske}$-}	‘make laugh’
	{parákə^{§§ə}/$_{ske}$-}	‘please’

{ʾə/$_{e}$}

The *ʾə/$_{e}$*-present-subjunctives form a limited group:

{ana^{§§ə}/$_{ske}$-}	‘breathe’	{na^{§§ə}/$_{ske}$-}	‘bathe’
{ay^{śə}/$_{ke}$-}	‘know’	{pa^{§§ə}/$_{ske}$-}	‘protect’
{kañm^{ə}/$_{e}$-}	‘play’	{yər^{§ə}/$_{se}$-}	‘revere’
{ka^{ccə}/$_{tke}$-}	‘be glad’	{lan^{§ə}/$_{se}$-}	‘carry out’
{kər^{§§ə}/$_{ske}$-}	‘shoot; throw’	{Íə^{śə}/$_{ke}$-}	‘lie’
{kĺew^{§ə}/$_{se}$-}	‘hear’	{wəyna^{§§ə}/$_{ske}$-}	‘honour’
{cəmp^{ə}/$_{e}$-}	‘can’	{śay^{ə}/$_{e}$-}	‘live’
{ñə^{§§ə}/$_{ske}$-}	‘desire’	{soy^{ə}/$_{e}$-}	‘be saturated’

{ñ ñ^{ə}/$_{e}$}

The *ññ^{ə}/$_{e}$*-present-subjunctives form a homogeneous group of denominative verbs, mostly – but not exclusively – denoting emotions:

emotion verbs		*other verbs*	
{añmáññ^{ə}/$_{e}$-}	‘love, have a wish’	{arccáññ^{ə}/$_{e}$-}	‘have to’
{kawáññ^{ə}/$_{e}$-}	‘desire’	{celeññ^{ə}/$_{e}$-}	‘appear’
{k^{w}əypeññ^{ə}/$_{e}$-}	‘be ashamed’	{t^{s}ereññ^{ə}/$_{e}$-}	‘cheat’
{tənk^{w}áññ^{ə}/$_{e}$-}	‘love’		
{pək^{w}əññ^{ə}/$_{e}$-}	‘trust’		
{ykanṣəññ^{ə}/$_{e}$-}	‘loathe’		
{lareññ^{ə}/$_{e}$-}	‘love’		
{wəynaññ^{ə}/$_{e}$-}	‘enjoy’		
{sklokəññ^{ə}/$_{e}$-}	‘doubt’		
{sək^{w}áññ^{ə}/$_{e}$-}	‘feel happy’		

present-subjunctives in *-a*

Although the following present-subjunctives have a subjunctive-like structure, they are best analysed as regular primary presents with zero-derived subjunctives:

{pəlwá-}	‘complain’
{pr^{a}/$_{ə}$ska-}	‘fear’
{ləká-}	‘see’ (present-subjunctive in the middle only)

{śəwa-} ‘eat’
{yə́ya-} ‘lead’

2.7.8 PRIMARY PRESENTS

Primary presents are all presents from which subjunctives are derived through zero derivation; they are listed above in 2.7.7 (p 128). In addition, suppletive presents can be considered primary presents because they have no other stems beside them. We find:

{kwa-} ‘call’
{nes-} ‘be’
{a$^{śś}/_{ké}$-} ‘lead’
{kəÍ$^{ə}/_{e}$-} ‘stand’
{pər$^{ə}/_{e}$-} ‘carry’
{ṣəm$^{ə}/_{e}$-} ‘sit’
{$^{ṣṣə}/_{ske}$-} ‘be’

{nes-} has an irregular paradigm with $^{ə}/_{e}$-forms next to Ø-forms, so that it is difficult to classify.

2.7.9 DERIVED PRESENTS

As was stated already in 1.2 (p 15), most preterite and subjunctive stems are shorter than the corresponding present stems and many presents are derived. Consequently, the category of derived presents is rather large. We principally find the following affixes: the suffixes {$^{ə}/_{e}$}, {e}, {o}, {$^{ṣə}/_{se}$}, {$^{ṣṣə}/_{ske}$}, {nə$^{ṣṣə}/_{ske}$}, {ññ$^{ə}/_{e}$}, and possibly {na$^{ṣṣə}/_{ske}$}, and the infix ‹n›.

{$^{ə}/_{e}$}

All clear cases of derived $^{ə}/_{e}$-presents have *e*-grade in the root and it seems that all palatalisable initials are palatalised. Not all subjunctives or preterites to this class are attested, but as far as can be seen, it corresponds to two types of subjunctives: *x*|Ø-root subjunctives and *a*-subjunctives. In the case of *x*|Ø-root subjunctives, the $^{ə}/_{e}$-presents can be derived from the subjunctives, but in the case of the *a*-subjunctives they cannot: we have to assume that both are derived from the root.

PRESENT			SUBJUNCTIVE		
ˀ*ə*/*e*-prs.	{ce$^{ś ə}$/$_{ke}$-}	←	Ø-sbj.	{t^{é}/$_{ə}$k-}	‘touch’
	{cen$^{ś ə}$/$_{ke}$-}			{t^{é}/$_{ə}$nk-}	‘check’
	{pĺe$^{cc ə}$/$_{tke}$-}[81]			{pl^{e}/$_{ə}$tk-}	‘emerge’
ˀ*ə*/*e*-prs.	{kĺep^{ə}/$_{e}$-}	:	*a*-sbj.		‘steal’
	{tre$^{ṣṣ ə}$/$_{ske}$-}			{tráska-}	‘chew’
	{peññ^{ə}/$_{e}$-}			{p^{á}/$_{ə}$nna-}	‘stretch’
ˀ*ə*/*e*-prs.	{per$^{ś ə}$/$_{ke}$-?}	no sbj. or prt. attested			‘peer’
	{mely^{ə}/$_{e}$-}				‘grind’
	{re$^{ṣṣ ə}$/$_{ske}$-}				‘flow’
	{śew$^{ś ə}$/$_{ke}$-}				‘shout’

The *e*-grade of ‘shout’ is not directly attested, as we find only 3sg. *śauśäṃ* etc, which could theoretically also be {śaw$^{ś ə}$/$_{ke}$-}, but it is the best explanation for the formation of this verb: *a*-vocalism seems to be no alternative (if it is correctly identified, the 3sg.prt. *kuśi* is particularly strong evidence, see 4.7.3, p 458).

{e}

The *e*-present corresponds to a subjunctive and a preterite in *a*. Since the subjunctive and preterite stems behave like *ə*|*a*-roots, it is attractive to analyse the present as derived from the subjunctive. It must be noted, however, that there is no parallel for a development *ae* → *e*; the assumption that the present is derived from the subjunctive is only supported by the argument of morphological simplicity. *e*-presents are formed to *ə*|*a*-roots and they are in complementary distribution to *o*-presents, which are formed to *a*|*a*-roots. Most of the verbs form a homogeneous category with *ə*-vocalism in the root, suffix accent, and middle inflexion in the present. Some examples:

PRESENT		SUBJUNCTIVE	
{mənké-}	←	{mənká-}	‘be inferior’
{mərsé-}		{m^{á}/$_{ə}$rsa-}	‘forget’
{srəwké-}		{sr^{á}/$_{ə}$wka-}	‘die’

A small group follows a different pattern with *e*-grade in the root and initial palatalisation if possible (see also Winter 1988: 218):

[81] *ə*-variants are not attested.

PRESENT		SUBJUNCTIVE	
{tˢenke-}	←	{tˢá/ˌnka-}	‘rise’
{ñewe-}		{nə́wa-}[82]	‘roar’
{Ĺewe-}		{lª/ˌəwa-}	‘send’

lyuketrä B46a7 ‘shines’ also has initial palatalisation, but *ə*-grade: the initial palatalisation probably belongs to the root in this verb (*lukatsi* Cp40b5 would be a late form).

{o}

o-presents are completely parallel to *e*-presents, except that they are formed to *a*|*a*-roots instead of *ə*|*a*-roots. In this case, the derivation from the subjunctive is easier as *ao* would very probably result in *o*, which is the actual shape of the present stem. The accent pattern of *o*-presents cannot be determined because the *o*-suffix causes *o*-affection of a preceding *a*, so that the surface accent cannot be established; *ay* and *aw*-diphthongs are not affected, but they do not show the accent effects either.

PRESENT		SUBJUNCTIVE	
{korpo-}	←	{kárpa-}	‘descend’
{klawtko-}		{kláwtka-}	‘turn away from’
{plonto-}		{plánta-}	‘be pleased’
{layto-}		{láyta-}	‘fall off’

A small group of verbs with trisyllabic roots undergoes double *o*-affection and subsequent syncope of the third *o*, so that we find:

PRESENT		SUBJUNCTIVE	
{kolok-}	←	–	‘follow’
{porok-}		{paráka-}	‘be pleased’
{wolok-}		–	‘stay’
{sonop-}		{sanápa-}	‘put ointment on’

{ˢᵊ/se}

ˢᵊ/*se*-presents form a rather homogeneous category: with only two exceptions, they are all derived from *s*-preterites. Consequently, they mostly correspond to *x*|Ø-root subjunctives, but not always, since next to *s*-preterites we also find some derived subjunctives (i.e. notably with the suffixes {ˀᵊ/e} and {Ø/e}). In *ə*|Ø-roots, the regular root grade is *ə*, but we find *e* in three cases, too. Initial palatalisation seems to be

[82] Because of the initial accent, I expect gradation in this stem, but it is not attested (see 2.5.7, p 85).

secondary in some forms of *ləyk-* 'wash'; otherwise, initials are not palatalised, cf especially prs. {ləwk^{ṣə}/$_{se}$-} of 'light up' vs sbj. {Íəw$^{ś ə}$/$_{ke}$-}, prt. {Íe/əwk-^{Ø}/$_{sa}$-} and prt.ptc. *lyelyuku*, *-oṣ*. In *ṣərp-* 'point out', palatalised *ṣ-* has spread over the whole verb (see 2.5.4, p 73).

	^{ṣə}/$_{se}$-PRESENT			PRETERITE	
a|Ø-root	{nak^{ṣə}/$_{se}$-}	←	*s*-prt.	{nak-^{Ø}/$_{sa}$-}	'rebuke'
	{er^{ṣə}/$_{se}$-}			{er-^{Ø}/$_{sa}$-}	'evoke'
ə-grade	{nək$^{ś ə}$/$_{sé}$-}			{nek-^{Ø}/$_{sa}$-}	'destroy'
	{t^{s}ək^{ṣə}/$_{se}$-}			{t^{s}ek-^{Ø}/$_{sa}$-}	'burn'
	{t^{s}əm^{ṣə}/$_{se}$-}			{t^{s}em-^{Ø}/$_{sa}$-}	'let go'
e-grade	{ke(s)^{ṣə}/$_{se}$-}			{kes^{Ø}/$_{sa}$-}	'extinguish'
	{prek^{ṣə}/$_{se}$-}			{pr^{e}/$_{ə}$k-^{Ø}/$_{sa}$-}	'ask'
	{yel^{ṣə}/$_{se}$-}			–	'examine (?)'
ə-grade	{yəwk^{ṣə}/$_{se}$-}	:	*a*-prt.	{yəwk-á-}	'conquer'
	{ləwp^{ṣə}/$_{se}$-}			{lawp-á-}	'smear'

{ṣṣə/ske}

The ^{ṣṣə}/$_{ske}$-suffix is the most common present suffix: it derives presents from subjunctives, from preterites, and directly from the root. Its patterning is hard to describe: there are some regular patterns, but also many isolated cases. At least the following ^{ṣṣə}/$_{ske}$-presents are derived from subjunctives in *a* ({yənmá-} is a derived subjunctive – the others are primary):

^{ṣṣə}/$_{ske}$-PRESENT		SUBJUNCTIVE	
{áksa^{ṣṣə}/$_{ske}$-}	←	{áksa-}	'wake up'
{mləwta^{ṣṣə}/$_{ske}$-}		{mləwtá-}	'rise' (?)
{yənmá^{ṣṣə}/$_{ske}$-}		{yənmá-}	'obtain'
{wətká^{ṣṣə}/$_{ske}$-}		{wətká-}	'decide'

The following ^{ṣṣə}/$_{ske}$-presents are derived from subjunctives in *na* (see 2.7.2, p 121):

^{ṣṣə}/$_{ske}$-PRESENT		*na*-SUBJUNCTIVE	
{kərná^{ṣṣə}/$_{ske}$-}	←	{kərná-}	'deal'
{pəkná^{ṣṣə}/$_{ske}$-}		{pəkná-}	'intend'
{məllá^{ṣṣə}/$_{ske}$-}		{malla-}	'oppress'
{yəkná^{ṣṣə}/$_{ske}$-}		{yəkná-}	'be careless'

The isolated present {tərra^{ṣṣə}/$_{ske}$-} of 'appease' (?) could also belong here, if the geminate *rr* goes back to *rn*.

A larger category is made up of *x*|Ø-root subjunctives (and the corresponding preterites):

ˢˢᵊ/*ske*-PRESENT		SUBJUNCTIVE	
{ayˢˢᵊ/ske-}	←	{ay-}	‘give’
{alˢˢᵊ/ske-}		{al-}	‘keep away’
{awnáˢˢᵊ/ske-}		{awn-}	‘hit; start’
{enkáˢˢᵊ/ske-}		{enk-}	‘take’
{kərkaˢˢᵊ/ske-}		–[83]	‘bind’
{kləynáˢˢᵊ/ske-}		{kləyn-}	‘be necessary’
{trenkáˢˢᵊ/ske-}		{trenk-}	‘cling’
{yamáˢˢᵊ/ske-}		{yam-}	‘do’
{yə(sə)ˢˢᵊ/ske-}		{wəs-}	‘wear’
{rəynáˢˢᵊ/ske-}		{rəyn-}	‘give up’
{Íəwtáˢˢᵊ/ske-}		{Íəwt-}?	‘drive away’
{saynáˢˢᵊ/ske-}		{sayn-}	‘rest on’
{səynáˢˢᵊ/ske-}		{səyn-}	‘be depressed’

ˢˢᵊ/*ske*-presents derived from the preterite fall into two groups: one group with only two verbs that does not allow for any generalisation, and one group of causative presents to *ə*|*x*-roots. The problem with the latter group is that the exact derivation pattern is not very easy to describe. The present is clearly secondary, and the subjunctive is zero-derived from the present, so that the only candidate primary stem is the preterite. However, the preterite stem ends in *a*, and this *a* is generally (but not completely!) absent in the derived present. If the preterite is a derived *a*-preterite, than the present and the preterite are both derived from the root. On present forms with medial *a* that would make derivation from the preterite easier, cf the argumentation in Malzahn (forth.a) and 4.4.6 (p 398).

	PRESENT			PRETERITE
	{kənáˢˢᵊ/ske-}	←		{ken-Ø/sa-}
	{kəlpáˢˢᵊ/ske-}			{kəlpá-}
caus. prs.	{kánəˢˢᵊ/ske-}	←	root or caus. prt.	{kyána-}
	{táləˢˢᵊ/ske-}			{cála-}
	{nárkəˢˢᵊ/ske-}			{ñárka-}

{kənáˢˢᵊ/ske-} is an isolated formation, since the other verbs of its class, i.e. with a Ø/*e*-subjunctive, form ˢᵊ/*se*-presents, and once a *n*əˢˢᵊ/*ske*-present. {kəlpáˢˢᵊ/ske-} is isolated because the subjunctive of this verb, {kəllá-}, is one of the gemination subjunctives (see 2.5.8, p 90).

The following ˢˢᵊ/*ske*-presents seem to be derived from the root because neither the preterite nor the subjunctive stem can be the basis. A small group of only four verbs has an ʾᵊ/*e*-subjunctive beside it; the *ʾəy*-subjunctives are not numerous, but

[83] Cf *x*|Ø-root preterite {kərk-Ø/sa-}.

they fit into a regular pattern, so that only two examples are given (see also 2.7.6, p 127). The two *ṣṣə*/*ske*-presents corresponding to *a*-subjunctives and preterites might be parallel to the causative presents discussed above because there we also see that an *a* disappears before the *ṣṣə*/*ske*-suffix. However, they are clearly different in having medial accent instead of the initial accent regular for causatives (a sbj. {spálka-} is not attested, but can be inferred on the basis of the prt. {spalká-}).

PRESENT			SUBJUNCTIVE
{aksáṣṣə/ske-}	:	*ə*/*e*-sbj.	{akṣə/se-}
{ásəṣṣə/ske-}			{aṣə/se-}
{yaskáṣṣə/ske-}			{yaṣṣə/ske-}
{we(ñ)ṣṣə/ske-}			{weñə/e-}
{awksəṣṣə/ske-}	:	*əy*-sbj.	{awkṣəy-}
{wəsáṣṣə/ske-}			{wəṣəy-}
{sompáṣṣə/ske-}	:	*a*-sbj.	{sámpa-}
{spalkáṣṣə/ske-}			prt. {spalká-}

{nəṣṣə/ske}

Striking about *nəṣṣə*/*ske*-presents is that all three certain examples have a root-final *m* and metathesis of *mn* to *nm*; all seem to be derived from the preterite (or perhaps from the root in case of the irregular preterite of 'come'):

nəṣṣə/*ske*-PRESENT			PRETERITE	
{kənmáṣṣə/ske-}	:	*ə*/*e*-prt.	{śemá-, kəmé-, kəm-Ø/sa-}	'come'
{tənmáṣṣə/ske-}	:	*s*-prt.	{tem-Ø/sa-}	'be born'
{yənmáṣṣə/ske-}			{yop-Ø/sa-}	'enter'

Another candidate for this present class is {lənnáṣṣə/ske-} of 'go out', but this verb forms a subjunctive that could also be the basis for an ordinary *ṣṣə*/*ske*-present: {lənn-}. Especially if 'go out' belongs here, a further generalisation seems to be that at least three denote verbs of motion; possibly 'be born' could be seen as a movement, too (i.e. "into the world").

{naṣṣə/ske}

Strictly speaking, there is only one *naṣṣə*/*ske*-present: {kəlláṣṣə/ske-} of 'bring', next to a sbj. {kᵃ/ɔla-} and a prt. {ś/kəlá-}. It is striking that exactly in this one example the *n* of the suffix is assimilated to the *l* of the root. An alternative analysis could take {kəlláṣṣə/ske-} as a normal *ṣṣə*/*ske*-present derived from the subjunctive with irregular gemination of *l* to *ll*.

{ñ ñ ᵊ/ₑ}

There are only a handful of derived *ññᵊ/ₑ*-presents, which follow more or less the same pattern. Differences are only found in the subjunctive and preterite types: one type has *a*-grade throughout, and apart from the present, they behave like *a*|*a*-roots, whereas the other type has a grading subjunctive which behaves like a *ə*|*a*-root. In all cases, the present has *ə*-grade and no root-final *a*, so that all verbs must be classified as *ə*|Ø-roots:

ññᵊ/ₑ-PRESENT			*a*-SUBJUNCTIVE	
{kəskə́ññᵊ/ₑ-}	:	with gradation	{kᵃ/ₔská-}	‘scatter’
{klə́ntˢəññᵊ/ₑ-}			{klántˢa-}, prt. {kĺəntˢá-}	‘sleep’
{rəsə́ññᵊ/ₑ-}			abs. *rsormeṃ*	‘stretch’
{nəyttə́ññᵊ/ₑ-}	:	with *a*-grade	{náytta-}	‘break down’
{məntə́ññᵊ/ₑ-}			{mánta-}	‘destroy’
{məywə́ññᵊ/ₑ-}			{máywa-}	‘tremble’
{wəskə́ññᵊ/ₑ-}			{wáska-}	‘move’
{tˢəykə́ññᵊ/ₑ-}			{tˢáyka-}	‘form’

The verbs for ‘sleep’ and ‘stretch’ must be of the grading subtype because they show *ə*-grade where the other verbs have *a*-grade. For ‘sleep’, additional proof for a grading subjunctive is the initial accent in the subjunctive and the initial palatalisation in the preterite. Since there is no way to account for a morphophonological process *a-ññᵊ/ₑ* → *ə-ññᵊ/ₑ*, we have to assume that the present and the subjunctive are both derived from the root.

{‹n›}

The *n*-infix has two variants: the largest group is formed has the infix directly before a root-final, “*na*-presents”, and a smaller group of verbs in *-k* has the infix directly before the *-k*, “*ṅk*-presents”.

The *na*-presents, which form a large class, all correspond to subjunctives and preterites in *a*. In grading roots, the present always has *ə*-grade. Some examples:

PRESENT		SUBJUNCTIVE	
{kərsə́na-}	←	{kᵃ́/ₔrsa-}	‘know’
{tərkə́na-}		{tᵃ́/ₔrka-}	‘let go’
{pləskə́na-}		{plᵃ́/ₔska-}	‘think’
{mrawskə́na-}		{mráwska-}	‘feel weary’
{skayna-}		{skáya-}	‘try’

ṅk-presents are only formed to roots ending in *-k* and mostly *-tk*. However, the distribution is not perfectly complementary, since roots in *-k* are also found among

verbs that form *na*-presents. In addition, many verbs in *-k* have present forms of both types (cf Peyrot 2008a: 144-145). A peculiarity of *n*-infixed presents is that the root-final *a* disappears; otherwise all attested roots are of the *ə|a*-type, with grading subjunctives and initial palatalisation in the preterite. Only 'write' stands out in having *a*-grade in all non-present forms:

ROOT	PRESENT		PRESENT		SUBJUNCTIVE	
-tk	{pəwt‹n›k-}	>	{pəwttə́nk-}	:	{p^{á}/$_{ə}$wtka-}	'assign to'
	{rəwt‹n›k-}		{rəwttənk-}		{r^{á}/$_{ə}$wtka-}	'take away'
-k	{sər‹n›k-}		{sərə́nk-}		–	'prepare'
	{səl‹n›k-}		{sələ́nk-}		{s^{á}/$_{ə}$lka-}	'pull out'
pəyk-	{pəy‹n›k-}		{pəynk-}		{páyka-}	'paint; write'
~ *na*-prs.	{kət‹n›k-} ~		{kəttə́nk-},		{k^{á}/$_{ə}$tka-}	'cross'
	{kətk-na-}		{kətkə́na-}			
	{nət‹n›k-} ~		{nəttə́nk-},		{n^{a}/$_{ə}$tka-}	'prompt'
	{nətk-na-}		{nətkə́na-}			

The gemination of *t* in *n*-infixed presents to *tk*-roots is regular (cf 2.5.8, p 90). In the classical Tocharian B period, forms with *e*-vocalism according to the pattern of the *^{ə}/$_{e}$*-presents arise, e.g. prs.ptc. *piṅkemane* or 3pl.prs. *puttaṅkeṃ* (Schmidt 1985: 426-429; Peyrot 2008a: 136-138).

2.8 THE IMPERATIVE

In both languages, the imperative stem is very close to the preterite stem and the subjunctive stem. The main differences are gradation and, in Tocharian B only, accent. As the basic classification principle in this chapter is affixation, we can say that these differences are inflectional characteristics of the preterite-subjunctive and imperative stem, and not stem-distinctive. Since the imperative is prefixed with TA *p-*, TB *p(ə)-*, one could theoretically argue that this prefix derives the imperative from the preterite or subjunctive.

A shared characteristic of the Tocharian A and B imperatives is that they are not very well attested and some verbs have isolated formations: some of these are certainly irregular, whereas others may in fact follow a pattern that is difficult to recognise because certain key forms are not attested.

2.8.1 Tocharian A

The Tocharian A imperatives are classified according to the preterite they correspond to. In the case of the *x|ā*-root preterite, the lack of initial palatalisation in the imperative, even when the corresponding preterite does show a palatalised initial, would rather suggest derivation from the subjunctive. However, for the *s*-preterite the suffix *sā*, found both in the preterite and in the imperative, is a strong

argument to derive the imperative from the preterite instead. Moreover, the reduplicated preterite and the corresponding imperative are also closely related: if the preterite has initial palatalisation, it is also found in the imperative. Unfortunately, the pattern of the imperative corresponding to the $^{\text{'ä}}/_{a}$-subjunctive is particularly difficult to establish.

x|*ā*-root preterite

The imperative to the *x*|*ā*-root preterite is identical to that preterite, except for one important exception that has been discussed in 2.2.1 (p 29): the root-final *ā* is deleted, and "replaced" by a stable *ā* in the endings that is not subject to vowel weakening; only the pl.act. ending has no *ā*. This means that in the imperative the difference between *x*|Ø-roots and *x*|*ā*-roots, that plays such an important role in verbal morphology elsewhere, is neutralised. The *ä*|*ā*-root preterite is still recognisable despite this neutralisation because of its gradation pattern, which is the same as in the corresponding subjunctive: *a*-grade in the active singular and *ä*-grade in the active plural and the middle. Some examples are:

IMPERATIVE	ACT.SG.	OTHER		PRETERITE	SUBJUNCTIVE
[+grad]	{-kras-}	{-kräs-}	:	{śrä/$_{\text{kra}}$sā-, kräsā-}	{k$^{\text{ra}}$/$_{\text{rä}}$sā-}
	{-tark-}	{-tärk-}		{c$^{\text{ä}}$/$_{\text{ta}}$rkā-}	{t$^{\text{a}}$/$_{\text{ä}}$rkā-}
	{-ṣtam-}	{-ṣtäm-}		{śä/$_{\text{ṣta}}$mā-}	{ṣt$^{\text{a}}$/$_{\text{ä}}$mā-}
[–grad]	{-ent$^{\text{s}}$-}	{-ent$^{\text{s}}$-}		{ent$^{\text{s}}$ā-}	{ent$^{\text{s}}$ā-}
	{-kām-}	{-kām-}		{kāmā-}	{kāmā-}
	{-skāy-}	{-skāy-}		{skāyā-}	{skāyā-}

Two verbs show unexpected *a*-grade in the act.pl.: *plos* MY2.5b6 {pä-law-s} 'send!' (matched by MayH2.6a30-b1 *ıdıŋlar* 'send (pl.)!'), has a sbj. {l$^{\text{a}}$/$_{\text{ä}}$wā-} and a prt. {l$^{\text{ä}}$/$_{\text{la}}$wā-} beside it, so that we would expect *pälwäs* {pä-läw-s}; pl. *pälmäs* A274a4 {pä-läm-s} 'sit down!' is the regular plural imperative in view of the sbj. {l$^{\text{a}}$/$_{\text{ä}}$mā-} and the prt. {l$^{\text{ä}}$/$_{\text{la}}$mā-}, but we find the variant *plamäs* MY3.12b5 {pä-lam-s} next to it.[84]

The verb *tākā-* 'be' has an irregular imperative stem with an extra element *ṣ*: {-ṣtāk-}, i.e. sg. *päṣtāk*, pl. *päṣtākäs*.

[84] As pointed out by Winter (1994a: 304-305), the Tocharian A plural imperatives of *x*|*ā*-roots with truncated *ā* are historically unexpected (see also 2.2.1, p 29). As he suggested to me, this is neatly explained with the assumption of an intermediate stage without imperative plural: the plural would secondarily have been formed after the singular (for a typological parallel, compare e.g. Dutch, which expresses number throughout the verb, except for the imperative, see Haeseryn e.a. 1997: 66). Evidently, this view receives strong support from the irregular imperatives *plos* and *plamäs*.

s-preterite

The imperative to the *s*-preterite has a close affinity to that preterite because it shows the characteristic *s*-suffix in the middle.[85] The exact shape of the *s*-suffix is not evident: in the preterite it is *-sā-*, but for the imperative *-s-* is also possible. The only forms where the *s*-suffix occurs in the imperative are the sg. and pl. middle, whose endings have to be set up as *-ār* and *-āc*, respectively. Consequently, the surface combinations *-sār* and *-sāc* could be analysed either as *-sā-ār* and *-sā-āc* or as *-s-ār* and *-s-āc*. On the basis of the parallelism with other classes where the *ā* clearly belongs to the endings, not to the stem, I set up the suffix as *-s-*.

The number of verbs attested is small and the gradation patterns cannot be established with certainty: there are *a*-grade and *ä*-grade forms, but it is unclear whether *a* was found in the active and *ä* in the middle, or the active plural perhaps had *ä*-grade as well (*a* being confined to the singular active only). There are two grading *s*-preterites, {$^{ca}/_{täs}$-$^{Ø}/_{(s)ā}$-} of *täs-* 'put' and {$pr^{a}/_{äk}$-$^{Ø}/_{sā}$-} of *präk-* 'ask', of which the first forms a grading imperative, too: {-$t^{a}/_{äs}$-}, sg.act. *ptas*, sg.mid. *pätstsār*, pl.mid. *pätstsāc*.[86] Of the second only middle forms are attested, which have *ä*-grade: {-präk-$^{(Ø)}/_{s}$-}. Another relevant form is sg.act. *pkanāñi* with *a*-grade in the stem {-kan-} of *kän-* 'fulfil', but a corresponding *s*-preterite (probably a *sā*-less preterite) is not attested. Further, *pakärkas* THT4083e.a5 may represent {p-kärk-s} with *ä*-grade to an *a*-grade *s*-preterite, but the spelling of the vowels is irregular to such an extent that we can hardly draw conclusions about the root vocalism.

Some examples (the zero variant of the suffix is bracketed if only middle forms are attested):

IPV. ACT.	MIDDLE		PRETERITE	
	{-ar-$^{(Ø)}/_{s}$-}	:	{ar-$^{Ø}/_{sā}$-}	'cause'
	{-āw-$^{(Ø)}/_{s}$-}		{āw-$^{Ø}/_{sā}$-}	'(hit); start'
{-tas-}[87]	{-täs-}		{$^{ca}/_{täs}$-$^{Ø}/_{(s)ā}$-}	'put'
	{-pärk-$^{(Ø)}/_{s}$-}		{$pr^{a}/_{äk}$-$^{Ø}/_{sā}$-}	'ask'
{-yām-$^{Ø}/_{s}$-}	{-yām-$^{Ø}/_{s}$-}		{yām-$^{Ø}/_{sā}$-}	'do'
	{-räy-$^{(Ø)}/_{s}$-}		{räy-$^{Ø}/_{sā}$-}	'give up'

To the verb *k^{w}äm-* 'come' we find a pl.act. ipv. *pukmäs* {p-k^{w}äm-s}. This form is difficult to classify because the preterite of *k^{w}äm-* is not attested, but it might belong

[85] Active forms are rare, but the *s*-suffix occurs only in the middle, as is made clear by sg.act. *pyām*, pl.act. *pyāmäs* vs sg.mid. *pyāmtsār*, pl.mid. *pyāmtsāc*.

[86] <tsts> /t^{s}:/ represents the length of the two phonemes /t/ and /s/ that merge into /t^{s}/.

[87] The pl.act. is not attested; it is on the basis of the dichotomy active : middle in the preterite that I assume that it lines up with the act.sg. rather than with the middle (as in the subjunctive).

here. In any case, it cannot be derived from the subjunctive without difficulties, since there the initial is palatalised: {śäm$^{ä}/_{a}$-}.

reduplicated preterite

The patterns of the imperative to the reduplicated preterite are not completely clear due to the absence of sufficient attested forms. In any case, although it is not reduplicated, it is closest to the preterite, as evidenced by *päśśäm* with initial palatalisation further found only in the preterite. *pälmāṣār* is the only form derived from the subjunctive, whereas we would expect {-Ĺäm-}, i.e. *pälymār***. The following imperatives are formed to reduplicated preterites:

IMPERATIVE		PRETERITE	SUBJUNCTIVE	
{-käl-}	:	{ka-kälā-}	–	‘bear’
{-yär-}		{ya-yärā-}	{yärā$^{sä}/_{sa}$-}	‘bathe’
{-wätk-}		{wa-wätkā-}	–	‘command’
{-wäyk-}		{wa-wäykā-}	{wäykā$^{sä}/_{sa}$-}	‘remove’
{-śärs-}		{śa-śärsā-}	–	‘let know’
{-ś(ś)äm-}		{śa-śśämā-}	{ṣtämā$^{sä}/_{sa}$-}	‘establish’

$^{ʾä}/_{a}$-subjunctive

Again, the number of forms is too small to draw firm conclusions about the formation of this imperative type. Since any final *ā* of the preterite stem is deleted in the imperative, it is impossible to see whether these imperatives are derived from the subjunctive with $^{ʾä}/_{a}$-suffix or the preterite derived from it; in both cases we would expect *ä*-variants with palatalisation. The examples are the following:

IMPERATIVE		PRETERITE	SUBJUNCTIVE	
{-ākṣäññ-}	:	{ākṣäññā-}	{ākṣäññ$^{ä}/_{a}$-}	‘announce’
{-enṣ-}		–	{en$^{sä}/_{sa}$-}[88]	‘command’
{-kĹawṣ-}		{kĹawṣā-}	{kĹaw$^{sä}/_{sa}$-}	‘hear’
{-pāṣ-}		{pāṣā-}	{pā$^{sä}/_{sa}$-}	‘protect’
{-(w)lāyṣ-}		{wlāyṣā-}	{wlāy$^{sä}/_{sa}$-}	‘carry out’
{-läc-}		{läcā-}	{länc$^{ä}/_{a}$-}	‘go out’
{-en-}		{weñā-}	{weñ$^{ä}/_{a}$-}	‘speak’

A remarkable case is {-läc-} because the corresponding subjunctive has an *n* in the root. If the verb had not been so irregular, this could be taken as an argument that the imperative is derived from the preterite and not from the subjunctive. {-en-} is irregular because it does not have the palatalised *ñ* found in most other stems

[88] The variant {eñ$^{ä}/_{a}$-} is attested once, in the verbal noun *eñlune*.

formed by this root (the present root is suppletive *tränk-*); perhaps this phenomenon can be connected with the extra short 3sg.prt. *we* {weñā-Ø}. Both {-en-} and {-lāyṣ-} have lost the initial *w* of the root, i.e. we find sg.act. *peṃ* and sg.mid. *pleṣār* instead of e.g. ***pweṃ* and ***puleṣār* (see 2.4.6, p 47).

irregularities

Apart from the irregularities already noted, there are two verbs that are so irregular that they cannot be ranged under one of the categories above.

'give' has a sg.act. ipv. *paṣ* and a pl.act. *pac*, which are impossible to analyse in terms of the morphemes encountered in other stems of 'give', i.e. sbj. {āy-}, prt. {wäs-$^{Ø}/_{(s)ā}$-} etc (see 2.5.5, p 78); even the endings do not fit the normal pattern for the imperative. The initial *p-* is probably the imperative prefix, but *-aṣ* resists further analysis; the final *-c* of *pac* may be compared with the middle 2pl. ending *-c* of the preterite and imperative, or with the active 2pl. of the present.

'go' has a sg.act. *piṣ*, a du.act. *pines* and a pl.act. *pic* next to *picäs*. The inital *p-* is probably the imperative prefix, and the medial *i* could reflect the present root {y-} (the suppletive prt.-sbj. root is *kälkā-*); the finals are clearly the same as for 'give' above (*picäs* evidently has the regular pl.act. ending *-s* added).

2.8.2 Tocharian B

In general, the Tocharian B imperative is close to the subjunctive. In the *x*|*a*-root subjunctive it has the same accent and gradation; in the *x*|Ø-root subjunctive it seems to have the same gradation (although it goes together with the preterite in having a *sa*-suffix in the middle); and the active imperative forms to $^{ə}/_{e}$-subjunctives conform to those subjunctives in lacking the preterite suffix *a*. However, the middle forms to the latter category seem to actually have this preterite suffix *a*, and the causative preterite is closest to the imperative found next to it because both lack the prs.-sbj. suffix {$^{śśə}/_{ske}$}.

x|*a*-root subjunctive

The imperative to the *x*|*a*-root subjunctive is easy to describe: its stem is identical to the subjunctive. With *a*|*a*-roots, the only indication for a close relationship with the subjunctive rather than the preterite is the initial accent of the imperative, which is also found in the subjunctive, but not in the preterite. With *ə*|*a*-roots, an additional argument is that the characteristic initial palatalisation of the preterite is not found in the imperative, whereas the gradation pattern is identical to that of the subjunctive. Some examples are:

IMPERATIVE	ACT.SG.	OTHER		SUBJUNCTIVE	
[+grad]	{-kársa-}	{-kə́rsa-}	:	{k^{á}/$_{ə}$rsa-}	‘know’
	{-kála-}	{-kə́la-}		{k^{á}/$_{ə}$la-}	‘bring’
	{-tárka-}	{-tə́rka-}		{t^{á}/$_{ə}$rka-}	‘let go’
	{-láma-}	{-lə́ma-}		{l^{á}/$_{ə}$ma-}	‘sit’
[−grad]	{-táka-}	{-táka-}		{táka-}	‘be’
	{-wáya-}	{-wáya-}		{wáya-}	‘lead’
	{-wə́rpa-}	{-wə́rpa-}		{wə́rpa-}	‘enjoy’
	{-skáya-}	{-skáya-}		{skáya-}	‘try’

x|Ø-root subjunctive ~ *s*-preterite

As far as can be established with the forms attested, the imperative to the *s*-preterite seems to be close at least to the preterite, since it has its charasteristic *sa*-suffix in the middle. It is sometimes assumed (e.g. Marggraf 1970: 34) that it has the gradation pattern of the subjunctive, which would rather suggest a close relationship to the latter category, but the evidence is meagre (see below). That the *sa*-suffix is confined to the middle, whereas the active has no suffix, is shown by two verbs of which active and middle imperative forms are attested: sg.act. *pauṃ* {p-awn-Ø} ‘hit’ vs pl.mid. *pauntsat* {p-awn-sa-t} and sg.act. *pyām* {p-yam-Ø} ‘do’ and pl.act. *pyāmtso* {p-yam-sə} vs sg.mid. *pyāmtsar* {p-yam-sa-r} and pl.mid. *pyāmtsat* {p-yam-sa-t}.

Gradation is more difficult. Of two verbs with a grading subjunctive only sg.act. forms are attested, where we would expect full grade on any account: *pkel* and *pyop*. If the plural is parallel to the subjunctive, we would expect *pkaltso* or *pkaläs* and *pipso* or *pipäs*,[89] if it is parallel to the preterite, *pkeltso* and *pyopso* etc. The pl.mid. *parksat* {p-prə́k-sa-t} is of no further help because it is middle, where we would expect *ə*-grade in any case. The only verb that suggests *e*-grade in the act.sg. only and *ə*-grade for all other forms for the whole type is *təs-* ‘put’: sg.act. *ptes* {p-tes-Ø} vs pl.act. *ptässo* (arch.) {p-təs-sə} and sg.mid. *ptäsar* (arch.) {p-təs-(s)a-r}. Since *təs-* forms an irregular subjunctive, it does not have this gradation pattern anywhere else; it is on the basis with the parallelism with the subjunctives of *other* verbs that we have to assume that this gradation pattern is identical to that of the subjunctive.

Some examples are:

IMPERATIVE		PRETERITE	SUBJUNCTIVE	
{-awn-^{Ø}/$_{sa}$}	cf	{awn-^{Ø}/$_{sa}$-}	{awn-}	‘hit; start’
{-enk-$^{(Ø)}$/$_{sa}$-}		{enk-^{Ø}/$_{sa}$-}	{enk-}	‘seize’
{-t^{e}/$_{ə}$s-^{Ø}/$_{(s)a}$}		{t^{e}/$_{ə}$s-^{Ø}/$_{sa}$-}	{təttá-}	‘put’
{-yam-^{Ø}/$_{sa}$-}		{yamə́ṣṣ-a-}	{yam-}	‘do’

[89] This last form is probably attested in B375b4, but since the first akṣara is restored, we still cannot decide between (*pi*)*päs* and (*pyo*)*päs*.

In view of the clear distribution of the *sa*-suffix described above, the well-attested sg.act. *peńsa* {p-enk-sa-Ø} next to *peńsar* {p-enk-sa-r} once is irregular: the regular active form would have been *peńk***. I would now assume that the presence of the *sa*-suffix, characteristic of the middle, suggests that *peńsa* goes back to *peńsar* through loss of *r*, probably by an incidental sound change. If so, the *-r* can have been restored at any time to fit it into the regular pattern again (this complements Peyrot 2008a: 159).

causative preterite

Most of the imperatives to causative preterites follow a regular pattern that is closest to the preterite, but not identical to it: it shares the initial palatalisation and the final *a* of the preterite stem, but instead of *a*-grade, it has *ə*-grade in the root. The following verbs display this pattern:

IMPERATIVE		PRETERITE		PRESENT-SUBJUNCTIVE	
{-ccəpa-}	←	{təpəṣṣa-}	cf	{təpəṣṣə/$_{ske}$-}	‘announce loudly’
{-ñərka-}		{ñárka-}		{nərkəṣṣə/$_{ske}$-}	‘keep away’
{-yətka-}		{yátka-}		{wətkəṣṣə/$_{ske}$-}	‘command’
{-yəra-}		–		{wərəṣṣə/$_{ske}$-}	‘train’
{-ścəma-}		{ścáma-}		{stəməṣṣə/$_{ske}$-}	‘establish’

Of these verbs, {təpəṣṣ-a-} has an unexpected *a*-preterite; we would rather expect {cápa-}*. To the causative preterite {cáwka-} we find an ipv.sg. *päccauk* with *a*-grade instead of the expected *päccuka* {pə-ccəwka-}. *śālāt* B575a7 could have the same *a*-grade if it is the pl.mid. ipv. to the causative preterite {śála-} (for expected *pśalat* {p-śəla-tə}).

There are also a few verbs with causative preterites that form a different imperative from the present-subjunctive stem, cf under *a*-imperatives.

ʾə/$_e$-imperative

Next to ʾə/$_e$-subjunctives we find two imperatives with exactly that subjunctive stem, i.e. a palatalised root final just like in the *ə*-variant of the subjunctive:

IPV. SG.	IPV.PL.		SUBJUNCTIVE		PRETERITE	
päklyauṣ	*päklyauṣṣo*	=	{kĺewṣə/$_{se}$-}	cf	{kĺewṣá-}	‘hear’
poñ	*pontso*, late *poñes*		{weñə/$_e$-}		{weñá-, wñá-}	‘say’

In view of *päklyauṣṣo*, late *poñes* must be secondary, whereas *pontso* must have lost the palatalisation of the *ñ* before the *s* of the plural ending. For the *e* of *poñes* see directly below.

e-imperative

In a number of imperatives we find an ending *e* that is difficult to understand. Four occurrences in imperatives to *ʾə*/*e*-subjunctives suggest that it is somehow to be connected with the *e*-variant of that type. However, on the basis of *päklyauṣ* and *päklyauṣṣo*, we would rather expect only *ə*-variants; likewise, the distribution of those variants in the present and subjunctive paradigms suggests an *ə*-variant for the 2sg. and the 2pl. Moreover, three other verbs, each from a different class, are certainly to be explained differently.

IPV.SG.	IPV.PL.			SUBJUNCTIVE	PRETERITE	
pokse	*pokses*[90]	:	{ʾə/e}	{akˢˢə/se-}	{akṣá-}	‘announce’
ptäṅwäññe				{tənkʷáññə/e-}	{tənkʷáñña-}*	‘love’
peplyaṅke				{pƛənᶜə/ke-}	{plenk-Ø/sa-}	‘sell’
	plakäskes			{ləkəṣṣə/ske-}	{ləkəṣṣa-}	‘show’
pśāy(e)?	*pśaiso*			{śayə/e-}	{śayá-}	‘live’
pete	*p(e)tso*, *petes*[90]		other	{ay-}	{wəs-Ø/sa-}	‘give’
ptälle-ñä				?	?	‘bear’
pīrpe	*pirpso*			{yərp-}	{yerp-Ø/sa-}	‘respect’

Since these verbs form various different subjunctives and preterites, they certainly need not form one imperative type. If they form one type indeed, the sg. seems to be best attested: it always has the ending *-e* following a non-palatalised consonant. The plural is less well attested, with three times *-es* against three times *-so* {-sə}. The evidence of *p(e)tso*, *petes* suggests that the plural in *-es* is a late development of the plural in *-so*, which is in line with *pokses* being late, too, but contradicted by classical *plakäskes* (however, the late form *poñes*, cited above, is a nice parallel to *petes*). The classification of *śay-* ‘live’ is uncertain altogether because the sg.ipv. is restored and the pl.ipv. could also be of the type *päklyauṣṣo*. *peplyaṅke* is very difficult to analyse because it seems to be reduplicated (cf the prt.ptc. *peplyaṅku*); if it is in fact prefixed, it would have a prefix {pe} instead of the usual {pə}, or its *pe-* is somehow to be compared with *pete* etc. The analysis of *ptälle-ñä* is hampered by the fact that the verb is only very imperfectly known, whereas *pete* etc are completely irregular and etymologically unrelated to the other stems of the same verb. The subjunctive to *pīrpe* could in fact also be of the *ʾə*/*e*-type; although in most of the other verbs the preterite is derived with an *a*-suffix, such a pattern would have a parallel in *peplyaṅke* (if the initial *pe-* can be explained).

[90] It seems that the *-e* ending is regular in the singular only, especially since *p(e)tso* is an older variant of late *petes*. The same explanation can be applied to *pokses*, which is also attested in a late text, but unfortunately *plakäskes* is attested in a classical text so that this form would need a different explanation.

a-imperative

The existence of imperatives derived with a suffix *a* is problematic: all classes discussed above either have a final *a* in the active and the middle (the *x*|*a*-root preterite and the causative preterite type), or they have a final *a* in the middle only (the *s*-preterite type), or they have no middle forms (the *ʾᵊ*/*e*- and the *e*-imperative). Strikingly, no middle forms without final *a* are attested, e.g. ***päklyauṣär* or ***plakäsker* (admittedly, none of the verbs with these imperative types has a suitable meaning). Since all imperative stems cited below are attested with middle forms only, there is a possibility that they form in fact one type with either the *ʾᵊ*/*e*-imperative or the *e*-imperative; cf especially sg.act. *ptäṅwäññe* vs sg.mid. *porcañ̈ñar*, pl.act. *plakäskes* vs sg.mid. *maskäṣṣar* {(pə)-máskəṣṣa-r} and pl.act. *päklyauṣso* vs pl.mid. *pāṣṣat* {pə-páṣṣa-tə}.

IMPERATIVE		SUBJUNCTIVE		PRETERITE	
{-kətkəṣṣa-}	cf	a.o. {kátkəˢˢᵊ/ske-}	caus.	{śátka-}	‘make pass’
{-máskəṣṣa-}		{máskəˢˢᵊ/ske-}		{myáska-}	‘exchange’
{-stəynáṣṣa-}					‘make silent’
{-tˢálpəṣṣa-}		{tˢálpəˢˢᵊ/ske-}		{tˢyálpa-}	‘redeem’
{-awnəṣṣa-}			*a*-prt.		‘make start’
{-orcáññə-}		{arccáññᵊ/e-}			‘have to’
{-kátkəṣṣa-}		{kátkəˢˢᵊ/ske-}			‘please’
{-kláwtkəṣṣa-}		{kláwtkəˢˢᵊ/ske-}			‘turn away from (tr.)’
{-páṣṣa-}		{paˢˢᵊ/ske-}		{paṣṣa-}	‘protect’
{-plántəṣa-}					‘please’
{-tˢárwəṣṣa-}		{tˢárwəˢˢᵊ/ske-}		{tˢárwəṣṣa-}	‘console’

Following Schmidt (1974: 25), *psaina* B527a1, next to a *x*|Ø-root subjunctive {sayn-} and an *s*-preterite {sayn-Ø/sa-} could indeed have to be restored as *psaina*(*r*), but for exactly this stem pattern there is no parallel.

irregularities and further uncertainties

Apart from ‘give’, listed above, the verb ‘go’ has an irregular imperative: sg. *paṣ*, pl. *pcīso*, late *cisso* is not analysable in terms of the other stems prs.-sbj. *y*- or prt. *məs*-, *meyt*-. The initial *p*- is probably to be identified with the imperative prefix and the *s* or *so* of the plural with the plural ending *-s*, but the other elements fit no pattern.

To ‘go out’, which forms an *ʾᵊ*/*e*-preterite, only one imperative form is attested: pl. *platstso*. The only thing we can note is that it does not have the palatalised *c* found in some persons of the preterite, nor the *n* characteristic of the subjunctive. The form could be parallel to the *e*-imperatives, i.e. with a sg. *plate** and a late pl. *plates**, but this is all conjecture. The causative sg.mid. *plyatstsar-me* is difficult to understand

altogether, as it seems to be built on an *s*-preterite with *sa*-suffix in the middle, but the only other causative form attested shows a prs.-sbj. stem {ləntə^{§§ə}/$_{ske}$-}.

Winter (1984: 119) argued that *kamp* B331b3 is an error for an sg.ipv. *pkam* of *kəm-* 'come', and Schmidt (1994b: 273, 2000: 226) restored a corresponding plural *[k](a)m(ts)o* in B108a10. These forms would fit well to the preterite stem variant {kəm-} (next to {śem-} and {kəm-sa-}), but of course they remain uncertain as one is corrected, the other restored, and the whole pattern of the verb without parallels.

2.9 THE PRETERITE PARTICIPLE[91]

In principle, the preterite participle can be completely derived from the preterite. However, in some cases the derivation rules are delicate and in some others the preterite is enlarged by a suffix that is not found in the preterite participle. For the shape of the reduplication syllable and the root vocalism, see 2.5.6 (p 81).

2.9.1 TOCHARIAN A

Apart from the shape of the reduplication syllable and the root vocalism, a description of the Tocharian A preterite participle has to address the following variables: presence or absence of a reduplication syllable; presence or absence of initial palatalisation; ending *-u* {-w} or *-o* {-āw}. These points are addressed below.

reduplication syllable

In principle, all preterite participles are reduplicated. Reduplication is lacking
1) in all verbs starting with a vowel;
2) in some verbs starting with *y-* or *w-* (see in particular Winter 1977: 157);
3) in all preterite participles formed to *ä|ā*-root preterites.

sub 1)

This peculiarity has also been noted in 2.4.5 (p 46). Some illustrative examples are: *aru* 'called forth' ~ prt. {ar-^{Ø}/$_{sā}$-} vs *nānku* 'criticised' ~ prt. {nāk-^{Ø}/$_{sā}$-} or *ārtu* 'praised' ~ prt. {ārtā-} vs *nānäsku* 'spun' ~ prt. {nāskā-}.

sub 2)

For this phenomenon, one may compare for instance *yāmu* 'done' ~ prt. {yām-^{Ø}/$_{sā}$-} or *walu* 'died' ~ prt. {wäl-^{Ø}/$_{sā}$-} with *lyalyuku* 'illuminated' ~ prt. {ĺawk-^{Ø}/$_{sā}$-}. However, it is not a rule without exceptions. Most cases of absence of reduplication with initial *y-* and *w-* are found next to *s*-preterites, while preterite participles to *ā|ā*-root preterites are normally reduplicated. However, some *s*-preterites with initial *y-* or *w-* do combine with reduplicated preterite participles.

Without reduplication we find with *s*-preterite: *yāmu* 'done', *yomu* 'obtained', *watku* 'commanded', *walu* 'died', *wasu* 'dressed' (preterite not totally certain); with

[91] Cf in general also Peyrot (forth.a).

reduplicated preterite: *watu* 'set up'; with *ā*|*ā*-root preterite: *wāmpu* 'decorater'; with unknown preterite: *yāmṣu* 'let done', *waltsu* 'reduced' (next to *woltsu*!).

With reduplication we find with *ā*|*ā*-root preterite: *yāytu* 'controlled', *wāwlu* 'covered', *wāwäsku* 'moved', *wāweku* 'decayed', *wāweku* 'lied', *wāwnesku* 'tormented', *wāwru* 'woken up'; with *s*-preterite: *yaiwu* 'entered', *wawu* 'given'; with *ā*-preterite: *wāwleṣu* 'worked', *wewñu* 'said'; with reduplicated preterite: *yetu* 'decorated', *wotku* 'commanded', *wawru* 'trained' (preterite not completely certain), *wawiku* 'removed'; with unknown preterite: *yāyru* 'bathed', *wāwäskāṣu* 'moved', *yayäsku* '?', *woru* 'filled', *worku* '?', *worpu* 'surrounded', *wawärṣu* 'smelled', *wawiṃṣu* 'revered'.

sub 3)

This category is homogeneous and the rule seems to have no exceptions. Some examples are: e.g. *kälko* 'gone', *kälpo* 'obtained', *tärko* 'let go', *lmo* 'sat' vs *kākropu* 'gathered' (prt. {krāwpā-}), *tātwäṅku* 'squeezed in' (prt. {twānkā-}*), *māmrosku* 'wearied' (prt. {mrāwskā-}).

An exception is *lantu* 'gone out', the usual form next to *laltu* once and *lalntu* twice. Possibly, *lantu* developed out of *lalntu* through sound change.

initial palatalisation

Initial palatalisation is found in two categories: preterite participles to 1) reduplicated preterites (with initial palatalisation) and 2) some *s*-preterites.

sub 1)

This pattern is rather clear and regular, e.g. *caclu* 'lifted' to {ca-cälā-} or *lyalymu* 'placed' to {Ía-Íämā-}. Probably, we can deduce the same preterite type on the basis of the following preterite participles with initial palatalisation: *caccrīku* 'confused', *cacpu* 'announced', *cacpuku* 'hidden', *cacräṅku* 'let hang', *ñañärku* 'kept away', *ñañitku* 'supported',[92] *ñañmu* 'bent' (next to *nanmū*), *lyalyäṅku* 'let hang', *śaśätku* 'made pass', *śaśälpu* 'redeemed'. The only drawback for setting up reduplicated preterites to these participles is that some (especially those with *ly*-, perhaps also those with *ñ*-) could also belong to the *s*-preterite type, cf below.

sub 2)

This pattern is unclear. On the evidence of {$^{ca}/_{tä}$s-$^{Ø}/_{(s)ā}$-}, {wack-$^{Ø}/_{sā}$-}, {śark-$^{Ø}/_{sā}$-} vs *to* 'put', *watku* 'separated', *kakärku* 'bound', initial palatalisation of the *s*-preterite is *not* matched by initial palatalisation in the corresponding preterite participle. However, we do find two cases: {Íawk-$^{Ø}/_{sā}$-} ~ *lyalyku* 'shone' and {Íayp-$^{Ø}/_{sā}$-} ~ *lyalypu* 'remained; resulted' (mostly in the noun *lyalypu* 'karma'). Possibly, these are to be seen in the light of the tendency of *l* to be over-palatalised (see 2.5.4, p 76); otherwise, it could be that the verbs in question had a causative with reduplicated preterite next to them.

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[92] The unpalatalised reduplicated preterite *nanätkāt*, cited only by Thomas (1964: 110), may well be a ghost form.

final *-u* or *-o*

If forms like *kākku* 'called' are analysed as having three underlying *ā*-vowels of which two are weakened, i.e. {kā-kākā-w}, the only suffix is *-w* and *-o* is a variant of it. However, it seems practical to give the rules to derive the surface endings *-u* and *-o* as well.

-o is regular in all preterite participles formed to *ä|ā*-root preterites. Since the stem clearly ends in *-ā*, these can be analysed as *-ā* plus the preterite participle suffix *-w*. To illustrate this, we can take the same examples as above: *kälko* 'gone', *kälpo* 'obtained', *tärko* 'let go', *lmo* 'sat', i.e. {kälkā-w}, {kälpā-w}, {tärkā-w} and {lämā-w}. Since according to the rules formulated above these participles are never reduplicated, participles like *kāko* 'killed' cannot be of the same type. All reduplicated participles ending in *-o* have a monosyllabic stem in *-ā* or a stem in *-w*, cf with *-ā*: *pāplo* '?' (sbj. {plā-}), *yāyo* 'driven' (prt. {yā-}), *lyālyo* 'wiped away' (sbj. {lā-}), *wāwo* 'carried' (prt. {wā-}), and probably *kāklo* 'fallen' (prt. {klā-}, but the prs. has *w* in the root: {klawā-}); with *-w*: *kāko* 'killed' (prt. {kāw-$^{Ø}/_{sā}$-}), *śāśo* 'lived' (prt. {śāwā-}). The first type is to be analysed {pā-plā-w} etc, the second {kā-kāw-w} etc. Accordingly, isolated *kākso* 'blinded' (Carling 2009: 185) suggests a root *ksā-* with a prt.ptc. {kā-ksā-w} or *ksāw-* with a prt.ptc. {kā-ksāw-w}. *to* 'put' is parallel in having the ending *-o* and a subjunctive {tā-}, but deviates because it is not reduplicated.

All other verbs have *-u*. This *-u* can be "original", i.e. a *x|Ø*-root directly followed by the preterite participle suffix as most probably in such forms as *onu* 'hit', *rarku* 'covered' or *wawu* 'given', which have no stem in *-ā* beside them. In most cases, however, the *-u* has arisen by vowel weakening, which weakened the *-ā* which would otherwise have combined to *-o*. All *ā|ā*-root preterites have this weakening, e.g. *kākmu* {kā-kāmā-w} 'taken' with reduction of both the final *ā* and the root *ā*, or *pāpeku* 'written' or *kākotu* 'cut up' with the root *ā* preserved before *y* or *w*.

In some categories it is unclear whether the root-final *ā* is reduced or whether its was never there, e.g. *caclu*, which is paired with a reduplicated preterite {ca-cälā-} with final *ā*, but a present {täl$^{sä}/_{sa}$-} without.

not formed from the preterite

The preterite participle *kākkñäñu* of the verb 'know' is not formed from the preterite {kñas-$^{Ø}/_{(s)ā}$-}, but rather from the subjunctive {kñāñ$^{ä}/_{a}$-}. A similar problem holds for *to* 'put', which seems closer to the subjunctive {tā-} than the preterite {$^{ca}/_{täs}$-$^{Ø}/_{(s)ā}$-} (see also above). It is certainly no coincidence that these verbs have other irregularities such as *a*-grade in the *s*-preterite combined with *ā*-grade elsewhere, and an *-s-* throughout the preterite active (not only in the 3sg.).

2.9.2 Tocharian B

Apart from the shape of the reduplication syllable, a description of the Tocharian B preterite participle has to address the following points: presence or absence of the

reduplication syllable; presence or absence of initial palatalisation; the root vowel; the inflexion class. These points are discussed below.

reduplication syllable

Like in Tocharian A, the normal situation seems to be that the preterite participle is reduplicated. Although more types lack reduplication than in Tocharian A, a general rule can be formulated: if the preterite has only *ə*-vocalism, reduplication is lacking. Instances of this rule are e.g. *ltu*, *-uweṣ* to {lə^{cə}/$_{te}$-} 'go out' or *ktau*, *-oṣ* to {^{ś}/$_{k}$ətá-} 'strew'. We further find reduplication missing in all roots starting with a vowel and in two starting with *y-*.

Preterite participles to roots starting with a vowel are e.g. *eṅku*, *-oṣ* 'taken', *aipu*, *-oṣ* 'covered', *aiwau* 'turned to', *āksau* 'woken up'. The two preterite participles to roots starting with *y-* that are not reduplicated are *yāku*, *-oṣ* 'drunk' and *yāmu*, *-oṣ* 'done'. Although both are formed to irregular preterite types, there is no other rule to explain the lack of reduplication: it must be due to the initial *y-*. Usually, verbs with *y-* have reduplicated preterite participles if the preterite does not have only *ə*-vocalism, cf *yayāsaṣ* 'boiled', *yayāṣṣoṣ* 'begged', *yaitu* {ye-yət-(ə)w}, *-oṣ* 'decorated', *yainmu* {ye-yənm-(ə)w}, *-oṣ* 'obtained', *yaipu* {ye-yəp-(ə)w}, *-oṣ* 'entered', *yayaukaṣ* 'used'.

initial palatalisation

Initial palatalisation is regularly found in preterite participles to causative preterites with initial palatalisation, e.g. *keklyutku*, *-oṣ* 'turned into' ~ prt. {kĺáwtka-}, *ceccuku*, *-oṣ* 'hidden' ~ prt. {cáwka-}, *l(y)elyamoṣ* 'placed' ~ prt. {ĺáma-}. However, on the evidence of abs. *tsetstsarormeṃ* 'having separated' vs prt. {t^{s}yára-}, the secondary palatalisation series *ky*, *py*, *my* and *t^{s}y* is *not* found in the preterite participle.

The *a*-grade *ə|a*-preterites (the *lyāka*-type), which are formally very close to the causative preterite, also have palatalised initials both in the preterite and in the preterite participle, cf abstr. *pepälywor* 'complaint' to {pĺawá-}, *(lye)lyaku*, *-oṣ* to {ĺaká-} and abs. *lyelyuwormeṃ* 'having rubbed' to {ĺawá-}.

ə|a-root preterites, which may have initial palatalisation in the act.sg., never have initial palatalisation in the preterite participle; even if the palatalisation is (irregularly) found in the whole preterite, it is not found in the participle, cf {ñətká-} vs *nätkau*, *-oṣ* 'prompted'.

root vowel

The root vowel of the preterite participle is in principle the same as that of the preterite, and if the preterite is grading, the root vowel is *ə*. This rule is illustrated with e.g. *keklyauṣu*, *-oṣ* ~ prt. {kĺewṣá-}, *trikau*, *trikoṣ* ~ prt. {trəyká-}, *tetemu*, *-oṣ* ~ prt. {tem-^{Ø}/$_{sa}$-} (*e*-grade also attested for the middle), *peparku*, *-oṣ* ~ prt. {pr^{e}/$_{ə}$k-^{Ø}/$_{sa}$-}, *yāku*, *yākoṣ* ~ prt. {ya^{śə}/$_{ke}$-}. It needs the assumption that active only

verbs such as *yaipu*, *-oṣ* ~ {yop-$^{Ø}/_{sa}$-} belong to the same type as *peparku* with *ə*-grade in the middle.

Two classes are excepted from this generalisation: the causative and *ə*|*a*-preterites with *a*-grade (the *lyāka*-type) mentioned above.

inflexion class

There are four inflexion classes: 1) *-u*, *uweṣ*; 2) *-u*, *-oṣ*; 3) *-au*, *-oṣ*; and 4) *-au*, *-aṣ*. The division between 1) and 2) on the one hand and 3) and 4) on the other is principally between *x*|Ø-roots and *a*|*a*-roots. *a*-preterites are counted as *x*|Ø-roots in this respect, except for the type *mamāntau*, *-aṣ*. Basically, the rule is that if the *a*-preterite is matched by an *a*-subjunctive, the preterite participle is of class 3) or 4) and if the *a*-preterite is derived from a different subjunctive type, it is of class 1) or 2). Here again a subtlety has to be noted, as the *ə*|*a*-root preterites with *a*-grade (the *lyāka*-type) behave like *ə*|Ø-roots.

The difference between classes 3) and 4) is relatively simple: the former has no reduplication and the latter has; accordingly, class 3) is stressed on the suffix, but class 4) on the root. Evidence from roots starting in a vowel is meagre, but it seems that although these roots are never reduplicated, they count as reduplicated if they had been reduplicated according to another rule.

The difference between classes 1) and 2) also seems to be related to the presence of a reduplication syllable, but the number of examples of especially class 1) is too small to set up reliable rules. In any case, verbs with vowel initials that would have been reduplicated by another rule and the two verbs with initial *y-* that likewise resist reduplication count as reduplicated: they are not automatically taken up by class 1). A special group of verbs with inflexion class 1) *and* reduplication have roots ending in *-w*, so that this inflexion ccompensates for that fact that the preterite participle suffix obscures the final *-w* of the root. Two verbs seem to have this inflexion in combination with reduplication although their roots do not end in *-w* (see the scheme below); for these verbs I have no explanation.

Class 4) is principally filled with *a*|*a*-root preterites; class 3) is filled with *ə*|*a*-root preterites; in class 2) we find *s*-preterites, causative preterites and *a*-preterites to $^{ə}/_{e}$-subjunctives. Class 1) consists of such a small number of members that the verbs are given below:

[–red]	*täṅkuweṣ*	‘checked’	*s*-preterite	sbj. {t$^{é}/_{ɜ}$nk-}
	putkuweṣ	‘closed’		sbj. {pəwtk-}
	plätku, *plätkweṣ*	‘increased’		{pletk-$^{Ø}/_{sa}$-}
	ltu, *ltuweṣ*	‘gone out’	$^{ə}/_{e}$-preterite	{lə$^{cə}/_{te}$-}
	puttuwermeṃ	‘ascended’?	prt. unknown	–
	plutku	‘?’		–
	sänuweṣ	‘bound’		–
	snätkū, *snätkūweṣ*	‘pervaded with’		–
	yku, *ykuweṣ*	‘gone’		suppletive

[+red] (final *-w*)	*kekuwer*	‘poured’	*s*-preterite	{kew-$^{Ø}/_{sa}$-}
	abs. *rerūwermeṃ*	‘opened’		sbj. {r$^{e}/_{ə}$w-}
	śeśu, abstr. *śeśuwer*, abs. *śeśuwermeṃ*, *śeśwormeṃ*	‘eaten’	*ə*|*a*-root prt. (*a*-grade; *lyāka*-type)	{śawá-}
(no final *-w*)	*tetarku*, abs. *(te)tärkuwermeṃ*?	‘turned’	prt. unknown	–
	peprukweṣä	‘leapt over’		–

not formed from the preterite

Although the preterite participle is very close to the preterite, there are some cases where the preterite participle cannot be derived from the preterite in a straightforward way, even if cases of suppletion are left out of consideration. Mostly, this is because the preterite has a suffix that is not found in the preterite participle.

The largest group consists of *a*-preterites. As already mentioned above, these behave like *x*|Ø-roots and form participles of classes 1) and 2). Some examples are: prt. {kaccá-} ~ *kakāccu* ‘(become) glad’, prt. {kĺewṣá-} ~ *keklyauṣu* ‘heard’, prt. {náwtəṣṣa-} ~ *nanautäṣṣo(ṣ)* ‘destroyed’, prt. {ṣárka-} ~ *ṣeṣṣirku* ‘surpassed’. A special case are the *ə*|*a*-root preterites with *a*-grade (the *lyāka*-type) because these have a final *a* in the prs.-sbj. and the prt., but *not* in the preterite participle: prt. {pĺawá-} ~ abstr. *pepälywor* ‘complaint’, prt. {ĺaká-} ~ *lyelyaku* ‘seen’, prt. {ĺawá-} ~ abs. *lyelyuwormeṃ* ‘having rubbed’, prt. {śawá-} ~ *śeśu* ‘eaten’.

Of the additional instances with a difference between preterite and preterite participle, only the *ʾəy*-subjunctives form a category; the other instances are all isolated. Next to *ʾəy*-subjunctives we find derived *a*-preterites, and according to the rules described above, we would expect a prt.ptc. without that *a*, i.e. sbj. {laĺəy-} → prt. {laĺəy-a-}, but prt.ptc. ***lalalyiyu* {la-laĺ-əy-əw}. In fact, not only the prt. suffix {a}, but also the sbj. suffix {ʾəy} is dropped in the preterite participle: *lalalu*, *-oṣ*. This pattern is well established, but in most cases the palatalisation remains: [+pal] *aukṣu* ‘grown’, *auṣu* ‘dwelled’, *kekarśu* ‘cut’, *kekalypoṣ* ‘stolen’ vs [–pal] *āklu* ‘learned’, *lalālu* ‘exerted’.

The isolated *ṣṣa*-prt. of *yam-* ‘do’, i.e. an *a*-prt. irregularly derived from the present instead of the subjunctive, is not matched by the prt.ptc. *yāmu*, *-oṣ*, which rather requires the *s*-preterite that we would expect next to the *x*|Ø-root subjunctive {yam-}.

təs- ‘put’, perhaps the most irregular verb of the language, forms a prt.ptc. *tättā$_{u}$*, which is clearly related to the subjunctive {təttá-} and not to the preterite {t$^{e}/_{ə}$s-$^{Ø}/_{sa}$-}.

The two $^{ʾə}/_{e}$-preterites {lə$^{cə}/_{te}$-} and {ya$^{śə}/_{ke}$-} are matched by participles without palatalisation, i.e. *ltu*, *-uweṣ* and *yāku*, *-oṣ*, whereas preterites to $^{ʾə}/_{e}$-subjunctives always have palatalisation (cf e.g. *keklyauṣu* cited above). Possibly, the preterite participle is not derived from the preterite stem in these cases, but both are derived from the root.

The causative preterite {śánmya-} of 'bind' is completely isolated in having an extra *y* in its preterite stem. This *y* is not found in the corresponding participle *śeśśanmu*.

2.10 SUMMARY

In view of the large number of different patterns for both languages, only some general tendencies can be observed here. As stated in 2.1.2 (p 23), the central questions of this chapter were 1) whether the subjunctive can be seen as a second present and 2) whether the subjunctive stem can be equated with the preterite stem. For the first question, the most important point to be addressed was to what extent the suffix inventories of present and subjunctive are identical.

stem inventory

In Tocharian A, primary presents are essentially root presents without root-final *-ā* next to derived *ā*-subjunctives and *ā*-preterites; the other types discussed in 2.6.8 (p 107) are generally found in suppletive patterns and are of no relevance to us. Derived presents are formed with the suffixes *-$^{\text{'ä}}/_{a}$-*, *-a-*, *-$^{\text{ṣä}}/_{sa}$-*, *-nä$^{\text{ṣä}}/_{sa}$-*, and the infix ‹n› (see 2.6.9, p 110; marginal *-nā$^{\text{ṣä}}/_{sa}$-* can be discarded for the moment). Derived subjunctives are formed with the suffixes *-$^{\text{'ä}}/_{a}$-*, *-a-*, *-ñ$^{\text{ä}}/_{a}$-*, *-ā$^{\text{ṣä}}/_{sa}$-*, *-ññ$^{\text{ä}}/_{a}$-*. Focusing on primary subjunctives, it serves our purpose now best to include zero-derived subjunctives from primary preterites, which yields the following types: root preterite-subjunctives (both to *x*|Ø- and *x*|*ā*-roots) and *$^{\text{'ä}}/_{a}$-* and *ññ$^{\text{ä}}/_{a}$*-subjunctives. So far, the formation inventory shared by the present and the subjunctive consists only of the *x*|Ø-root type and the suffixes *-$^{\text{'ä}}/_{a}$-* and *-a-*. The latter could perhaps be eliminated on the basis of one subjunctive form, 2sg.act. *nakät* (compared to 2sg.mid. *nkatār*), that shows that the actual shape of the subjunctive suffix is *-$^{\text{Ø}}/_{a}$-*; this would set it apart from the present suffix, because the latter is only *-a-*. Additional shared stems are found as soon as we include zero presents: *x*|*ā*-root preterite-subjunctives with *x*|*ā*-root presents (2.6.10, p 115). Although the root presents (both of the *x*|Ø- and the *x*|*ā*-type) blur the delimitations of the stem inventories in an important way because the same formations are salient among the subjunctives, it must be stressed that root presents are small in number. In any case, shared *suffixes* are strikingly few.

In Tocharian B, primary presents all end in *-$^{\text{'ə}}/_{e}$-* (2.7.7, p 128), that is, we find verbs in *-$^{\text{ṣṣə}}/_{ske}$-*, *-$^{\text{'ə}}/_{e}$-* and *-ññ$^{\text{ə}}/_{e}$-*, but since these elements are found in all stems of the verb, they can hardly be called suffixes. Derived presents are generally formed with one of the suffixes *-$^{\text{'ə}}/_{e}$-*, *-e-*, *-o-*, *-$^{\text{ṣə}}/_{se}$-*, *-$^{\text{ṣṣə}}/_{ske}$-*, *-nə$^{\text{ṣṣə}}/_{ske}$-*, or *-ññ$^{\text{ə}}/_{e}$-*, or the infix ‹n›. Primary subjunctives are all identical to the root (2.6.4, p 98), but unlike the present this root never ends in *-$^{\text{'ə}}/_{e}$-*. Leaving *na*-subjunctives out because they are marginal and often irregular, derived subjunctives show the suffixes *-$^{\text{'ə}}/_{e}$-*, *-$^{\text{Ø}}/_{e}$-*, *-'əy-* and *-a-* (2.7.2, p 120, 2.7.6, p 126). So far, the formal inventories of present and subjunctives are sharply distinct, both for primary and derived formations: the only shared suffix is *-$^{\text{'ə}}/_{e}$-*. Only in zero-formations is there a significant overlap: there are

present-subjunctives both with root-final *-a* and with the element *-ʾə/e-*. However, these can be analysed as primary presents with zero-derived subjunctives: the suffixes they are formed with are *not* used to derive presents as well as subjunctives, and they do not prove that the present and the subjunctive stem make use of the same formal inventory.

subjunctive vs preterite stem

In both languages, subjunctive and preterite stems are closely related indeed: most differences are not found in suffixation, but in other morphological distinctions, principally gradation, palatalisation and accent.

In Tocharian A, suffix contrasts between the preterite and the subjunctive are found with *ʾä/a-*, *a-*, and *ñä/a-*subjunctives derived from root preterites (2.6.6, p 99), and with *ā*-preterites derived from subjunctives ending in *-ʾä/a-* and *-ñ̃ä/a-* (2.6.3, p 96). In addition, causatives show the peculiar suffix *-āsä/sa-*, which derives subjunctives from the root (or perhaps from the reduplicated preterite). Only a minor set of the root preterite-subjunctives are of the *x*|Ø-type: in that class, the preterite stem differs from the subjunctive in showing its element *-sā-* in some forms (2.6.7, p 105), and often it has *a*-grade and initial palatalisation vs *ä*-grade without initial palatalisation in the subjunctive. All other root preterite-subjunctives are of the *x*|*ā*-type. Whereas for *ā*|*ā*-roots the stems are completely identical, *ä*|*ā*-roots show initial palatalisation only in the preterite, and root gradation in both stems, but with a complementary distribution (2.5.2, p 56).

In Tocharian B, the only suffix contrast between preterite and subjunctive is found in *ʾə/e-* and *Ø/e-*subjunctives derived from root preterites (2.7.2, p 120), and in derived *a*-preterites (2.7.3, p 121). In addition, the large class of causatives shows a peculiar pattern of a subjunctive that is zero-derived from the present, while the present is derived from the root (or perhaps from the preterite stem) with the suffix *-ṣṣə/ske-*. In all other cases, the subjunctive and the preterite are not differentiated by a suffix, but by their inflexion (2.7.4, p 122). For instance, *s*-preterites show an element *-sa-* in part of their forms, which is not found in the corresponding subjunctive. Further, the subjunctive has root accent, whereas the preterite has suffix accent, like in the deduced minimal pair 1pl.sbj. *aunäm** /áwnəm/ 'we will hit' vs 1pl.prt. *aunam** /awnə́m/. *ə*|Ø-root presents and subjunctives both show the root grades *e* and *ə*, but the distribution is slightly different (see 2.5.2, p 56). *ə*|*a*-root preterites and subjunctives show a double inflexion contrast: the subjunctive has root gradation and the preterite has initial palatalisation. Additionally, with *a*|*a*-root preterites and subjunctives they have in common that the subjunctive has initial accent and the preterite suffix accent, e.g. 1pl.sbj. *tākam* /tákam/ 'we will be' vs 1pl.prt. *takām* /takám/.

conclusion

With the help of zero-derivation as an analytical tool, the overlap between the inventories of the present and the subjunctive stems can be reduced considerably. Whereas the present has a large suffix inventory, that of the subjunctive is only limited, the subjunctive being mostly formed from the root. Thus, the subjunctive is a kind of present because of its endings, and not because of its stem.

The subjunctive and preterite stems are similar indeed: most differences are part of the inflexion, not of stem formation. These differences are not found in the domain of suffixation, but in gradation, palatalisation and accent. Tocharian B root preterite-subjunctives show great similarities between the *x*|Ø- and *x*|*a*-type, where the most important contrast between preterite and subjunctive is apparently the suffix accent of the former versus the root accent of the latter. In Tocharian A the situation is slightly different: whereas the *x*|*ā*-type often shows no difference between preterite and subjunctive at all, the *x*|Ø-root type is only marginal; evidently, it was replaced by categories where the contrast was better marked.