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Studies in Tocharian verbal morphology relevant to the cladistic position of Tocharian in Indo-European

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Studies in Tocharian verbal morphology
relevant to the cladistic position of
Tocharian in Indo-European

Studies in Tocharian verbal morphology relevant to the cladistic position of Tocharian
in Indo-European

Louise Skydsbjerg Friis

PhD Dissertation

Universiteit Leiden, The Netherlands

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Studies in Tocharian verbal morphology relevant to the cladistic position of Tocharian in Indo-European

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General abbreviations

a.	alternant gender	itr.	intransitive
a.o.	among others	lit.	literally
abl.	ablative	m.	masculine
abst.	abstract noun	mid.	middle
act.	active	n.	note
ag.n.	agent noun	obj.	object marker
aor.	aorist	opt.	optative
arch.	archaic	p.c.	personal communication
c.	circa	PE	primary endings
caus.	causative	pl.	plural
cl.	classical	PP	preterite participle
com.	comitative	PN	personal name
conj.	conjunction	pron.	pronoun
dem.	demonstrative	prs.	present
descript.	description	prt.	preterite
du.	dual	ptcp.	participle
ex.	example	redup.	reduplication
f.	feminine	sbj.	subjunctive
fn.	footnote	SE	secondary endings
foss.	fossilised	sg.	singular
ger.	gerundive	tr.	transitive
inch.	inchoative	trscr.	transcription
inj.	injunctive	trsl.	translation
inst.	instrumental	trslit.	transliteration
ipf.	imperfect	vn.	verbal noun
ipv.	imperative		

Symbols

< >	phonological change
← →	morphological change
⇐ ⇒	semantic change
⟨ ⟩	orthographical form
/_/	phonological form*
*_	reconstructed form
–*	inferred nominative form
°_	one member of a compound
†_	expected but non-existing form
[_]	stem class
<i>C</i>	any consonant
<i>N</i>	any nasal
<i>R</i>	any resonant or nasal
<i>V</i>	any vowel
<i>W</i>	any glide (y or w)

* I only use phonological and orthographical braces when they are necessary for clarity. Throughout the thesis, I use phonological notation for roots, stems, endings, and other incomplete word parts, following the notation system for Tocharian presented in Peyrot (2013a: 15), e.g., TB *ə* for ⟨ä, a⟩, *əy* for ⟨i⟩, *əw* for ⟨u⟩, TA *ä* for ⟨ä⟩, *äy* for ⟨i⟩, *äw* for ⟨u⟩. For attested words, I use orthographical notation, e.g., TB opt.3sg. *campi* ‘may be able’ for /cämpəy/, TA opt.3sg. *cämpiṣ* ‘may be able’ for /cämpäyṣ/.

Abbreviations of languages

Alb.	Albanian	MWel.	Middle Welsh
Av.	Avestan	OAv.	Old Avestan
Bret.	Breton	OCS	Old Church Slavonic
Celt.	Celtic	OEng.	Old English
CIE	Core Indo-European	OHG	Old High German
CLuw.	Cuneiform Luwian	OIr.	Old Irish
Dan.	Danish	OLat.	Old Latin
Dor.	Doric Greek	ON	Old Norse
Eng.	English	Oss.	Ossetic
Gk.	Ancient Greek	Pal.	Palaic
Gk. Hsch.	Hesychian gloss	PGk.	Proto-Greek
Gm.	German	PGmc.	Proto-Germanic
Gmc.	Germanic	Phryg.	Phrygian
Got.	Gothic	PIE	Proto-Indo-European
Hitt.	Hittite	PIIr.	Proto-Indo-Iranian
HLuw.	Hieroglyphic Luwian	PT	Proto-Tocharian
IE	Indo-European	Rus.	Russian
IIr.	Indo-Iranian	Skt.	Sanskrit
Ital.	Italic	Sogd.	Sogdian
Lat.	Latin	TA	Tocharian A
Latv.	Latvian	TB	Tocharian B
Lith.	Lithuanian	Toch.	Tocharian
Lyc.	Lycian	Ved.	Vedic
Lyd.	Lydian	Wel.	Welsh
MEng.	Middle English	YAv.	Young Avestan
MPer.	Middle Persian		

Chapter 1 Introduction

1.1. The position of Tocharian

The reconstruction of the Indo-European proto-language was already well advanced when the two new branches, Anatolian and Tocharian, were discovered. In fact, the publication of the second edition of Brugmann's *Grundriß der vergleichenden Grammatik der indogermanischen Sprachen* (Brugmann 1897-1916) coincided with the decipherment of Hittite and the Tocharian languages (Sieg & Siegling 1908; Hrozný 1917). Ever since then, a major focus for historical linguists working with Anatolian and Tocharian has been how these branches are to be positioned in relation to the other Indo-European languages and the 'classical' reconstruction. This dissertation concerns the position of Tocharian.

The phrase 'position of Tocharian' holds many interrelated questions. One is geographical; the location of the two Tocharian languages (Tocharian A and B) in the Tarim Basin (present day Xinjiang, China) in the 1st millennium CE is further east than any other Indo-European branch. Considering the standard view that the Indo-European homeland is to be placed in the Pontic-Caspian steppes in the archaeological culture known as the Yamnaya dated roughly 3500–2700 BCE (Anthony 2007; 2023; Olsen, Olander & Kristiansen 2019a), the Tocharian branch must have traversed a considerable distance in prehistory. It has been hypothesised that the Tocharian branch moved with a migration of people from the Indo-European homeland to the Tarim Basin with an intermediate stay in South Siberia; such a migration is observable in the genetic and archaeological record, which identifies the Afanas'ev culture of South Siberia (c. 3300–2800 BCE) as a closely related culture of the Yamnaya culture (Mallory 1989; Anthony 2007; 2013; Allentoft

et al. 2015; Kroonen, Barjamovic & Peyrot 2018). Identifying the Tocharian languages with the Afanas'ev culture is, however, not easy as that culture left no textual remains; see the discussion in Mallory (2015). One method is to trace contact influences in Tocharian from other languages that can be placed along the suspected route with reasonable certainty; see e.g., Bernard (2023) and Dragoni (2023) on influence from Iranian languages, and Peyrot (2019b) and Warries (2022b) on possible contact with Uralic. One may also look at the linguistic starting point of the Tocharian branch. It has been theorised that if the people of the Afanas'ev culture spoke a prestige of Tocharian, they must have separated from the Indo-European language community at a fairly early date (Kroonen, Barjamovic & Peyrot 2018: 8). If so, it is conceivable that such a separation is visible in the linguistic features of Tocharian.

The position of Tocharian is thus also a question of cladistics, i.e., the genealogical relationship between Tocharian and the rest of Indo-European. Early studies on the cladistic position of Tocharian placed the branch together in subgroups with other branches with almost all possible combinations proposed (Adams 1984: 395; Malzahn 2016a: 281). In the past twenty years, however, one particular notion, which correlates well with the theory of an early migration of the prehistoric speakers of Tocharian, has become very prominent in the literature.

“[...] I now conclude that there is a growing consensus among many in favor of [Anatolian and Tocharian as first and second branch]” (Melchert 1998: 27)

“Most scholars today agree that the Tocharian branch split from the Proto-Indo-European tree earlier than the other branches, with the exception of Anatolian.” (Carling 2005: 48)

“[...] it is widely assumed that the pre-Tocharians were the second subgroup to separate themselves.” (Adams 2017: 455)

“It is usually held that Tocharian was, in turn, first to depart from PNIE;² [...]” (Lundquist & Yates 2017: 2080)

¹ My addition between the brackets. In the quote above, Melchert refers to “model I.D” as a shorthand for the family tree that places Anatolian as the first branch and Tocharian as the second; see Melchert (1998: 24).

² Proto-Nuclear-Indo-European is in their terminology the proto-stage of all branches

“As it is widely, though not universally, believed that Tocharian was the second of the major Indo-European branches after Anatolian to depart from the parent speech community, [...]” (Kim 2018a: 113)

“In view of the possible scenario, commonly found in the literature, that after Anatolian Tocharian was the second branch to leave the Proto-Indo-European language family, [...]” (Peyrot 2018a: 243)

“Proto-Tocharian is often – and correctly – supposed to have been the branch after Anatolian to separate from Proto-Indo-European.” (Weiss 2018: 373)

“Since most scholars would probably agree that Tocharian branched off from the rest of Indo-European at an early point, [...]” (Willi 2018: 104)

“Many scholars assume that the next branch to separate from the non-Anatolian branch was Tocharian (also extinct).” (Olander 2019a: 9)

It is worth noting that—with the exception of Weiss (2018: 373)—all quotes indicate a certain degree of caution. Although the scholars cited above adhere to the idea that Tocharian was the second branch to separate, at least to some degree, they are not making declarative statements (“Tocharian was the second ...”); rather, they cite the *communis opinio*. There is a good reason for this. While the basic tenet of the hypothesis is indeed widely believed, there is only limited agreement on which evidence should be used to substantiate it.

Although the idea is older, the mainstream acceptance of the hypothesis that Tocharian constitutes the second branch of the Indo-European family tree, i.e. the Tocharian Second hypothesis, only seems to have taken root in the 1990s, motivated by three events in the scholarship. One was a study by Schmidt (1992) on archaisms of Tocharian indicating early separation, and the subsequent assessment of this study by Winter (1997) who rejects most of Schmidt’s archaisms, but adds to the lexical isoglosses. The resulting lexical isoglosses are among the most agreed-upon arguments for the early separation of Tocharian; see, e.g., Carling (2005: 48–9), Kim (2018a: 113), Weiss (2018: 373), Peyrot (2019a: 187). However, both the arguments themselves and the value of lexical evidence in general has been called into question by Malzahn (2016a), and it seems unavoidable that some of them must be abandoned; see the discussion of lexical isoglosses in 1.3.1.

excluding Anatolian (Lundquist & Yates 2017: 2080).

The second significant study came from a research group combining qualitative historical linguistics with computational phylogenetic methods. In their most famous study from 2002,³ Ringe, Warnow & Taylor presented the so-called ‘best tree’⁴ of the Indo-European family, based on a combination of morphological, phonological and lexical isoglosses. This tree placed Tocharian as the second branch, separating after Anatolian. The study was methodologically very careful and is to this day the quantitative study that has received the most recognition among Indo-Europeanists; see 1.2.4. However, by their own admission (Ringe, Warnow & Taylor 2002: 99–100), the placement of Tocharian as second in the tree is based on lexical isoglosses alone.

The third factor—though chronologically the earliest—which contributed to the view that Tocharian is more archaic than the ‘Brugmannian’ branches comes from the verbal system. In fact, the earliest mention of the notion of early Tocharian separation, to my knowledge, is Burrow (1954) who proposes that the sigmatic aorist is an innovation of non-Anatolian, non-Tocharian Indo-European. This idea, however, did not receive support until J. Jasanoff’s seminal work on the Indo-European verbal system. Building on his theory of the PIE **h₂e*-conjugation (Jasanoff 1979; 2003), Jasanoff proposed that the Tocharian s-preterite did not evolve from the Indo-European sigmatic aorist, but rather reflects a prestage to it together with the Hittite *hi*-conjugation preterite. He dubbed this prestage, the presigmatic aorist (Jasanoff 1988a; 2003: 174–214; 2019b). Since then, Jasanoff has incorporated other verbal isoglosses into the framework as evidence for the position of Tocharian, e.g., the simple thematic present and the thematic optative (Jasanoff 1998; 2009); see also Ringe (1998: 35–6; 2000) who proposes similar isoglosses, independently and within a different scope. While several scholars cite these isoglosses as foundational evidence for the early separation of Tocharian, a.o. Fellner & Grestenberger (2018: 63 fn. 1), Weiss (2018: 373), the questions of the presigmatic aorist in particular, and the **h₂e*-conjugation in general, are highly controversial.

Thus, the hypothesis that Tocharian is the second highest branch on the Indo-European family tree is primarily based on lexical evidence and verbal isoglosses. In this dissertation, I focus on the latter. The Tocharian verbal system is on the whole more conservative than the nominal system, meaning that the likelihood of finding useful correspondences between Tocharian and the other Indo-European languages

³ See also Nakleh, Ringe & Warnow (2005).

⁴ This is a technical term, referring to the computer-generated phylogeny which is most compatible with the data set.

is higher. The primary goal of the studies in this thesis is therefore to investigate the verbal isoglosses that have been proposed as evidence for the early separation of Tocharian.

There is yet another goal with this research. Not only can a diachronic investigation of Tocharian grammar inform our understanding of its relationship to the rest of Indo-European, and thus possibly the prehistory of its speakers, an increased understanding of this relationship can also elucidate the development of the Tocharian grammar itself. In each of the five studies that I present in this dissertation, the cladistic result have led to a deeper understanding of the verbal category in question and a hypothesis of its development in Tocharian.

1.2. Cladistics

In this section, I present the most important cladistic methods and terminology used in the thesis. The overall topic concerns the possibilities and the limitations of the cladistic approach. Throughout the thesis, I use the terms ‘cladistic(s)’, ‘phylogeny’ and ‘phylogenetic’ in a broad sense, referring not only to quantitative, computational methods (which I do not use in this work), but also to the qualitative methods that can identify innovations and archaisms in related languages in order to determine their place in the family tree. For a similar use of the terms, see the recent volume “The Indo-European Language Family: A phylogenetic perspective” (Olander 2022a).⁵ The aim of the current thesis is not to infer a phylogeny for the Indo-European language family, but to critically assess the proposed evidence that has been used to advocate for the position of Tocharian within the Indo-European family tree from both qualitative and quantitative studies.

Since we are working with prehistoric eras, the possibilities for cladistic hypotheses are practically endless. Due to the increase of interdisciplinary research, it is our duty as historical linguists to make sure that the analyses we supply are as well-founded and rigorous as possible. Scholars from other fields will not necessarily have the ability to tell well-founded analyses from assumptions or inferences. For this reason, we must be extremely cautious with the data that we accept as positive evidence. In the following subsection 1.2.1, I discuss the basics of the cladistic approach and the advantages and disadvantages of the various types of evidence.

⁵ For an overview of quantitative phylogenetic methods, see Carling (2024: 107–123) who uses the term ‘phylogenetic methods’ in the narrow, quantitative sense.

1.2.1. Innovation, archaism and absence

As many other endeavours in historical linguistics, the basis of cladistic determination is the comparative method. By comparing segments of two or more potentially related languages, we are able to verify or falsify genetic relationship between them; if there are regular correspondences between the languages, they are very likely related. Having established regular correspondences, we are able to reconstruct the common proto-stage—the parent language—of the languages in question; see, e.g., Weiss (2015: 127–45).

The question posed by linguistic cladistics—or linguistic phylogenetics—is how closely related sister languages are in relation to each other in a language family with three or more members.⁶ Where the comparative method is searching for systematic similarities, the cladistic method is looking for systematic discrepancies. This can either be two different features found in the same position, for instance, two different endings marking the nom.sg., or the same feature found in different functions in the given languages, for instance, two cognate words that have different meanings in the sister languages. These discrepancies are referred to as isoglosses.⁷ If a feature or a function can be shown to have been innovated in two of the languages, but not in a third, and it is unlikely to have been borrowed or to have happened independently, it is evidence that the two are more closely related to each other than to the third language. This in turn indicates that the two languages go back to a shared prestage from which the third does not descend. Since we know through the comparative method that all three languages are indeed related, the cladistic evidence allows us to draw a family tree with two nodes: a parent node and a subnode.⁸ In Figure 1.1, such a tree is presented with α representing a feature shown to be archaic and β representing one shown to be innovative; see also Clackson (2022: 19, 21–6).

There are several important concepts that influence how much weight we ascribe to an isogloss. In this regard, directionality is a key concept. In order to evaluate whether a given feature is innovative or archaic compared with another, we have to determine which direction of change is more likely, that is, whether it is more likely that feature α turned into feature β or the other way around. A given change can be

⁶ Both terms, *cladistics* (Gk. κλάδος ‘branch’) and *phylogeny* (Gk. φύλον ‘tribe’, γενεά ‘family, generation, origin’), are borrowed from biology.

⁷ Sometimes the term *isogloss* is used to describe the boundary, mostly geographical, between two different states, not the state itself.

⁸ The validity of the tree model to describe genetic relationships is contested and will be discussed in 1.2.2.

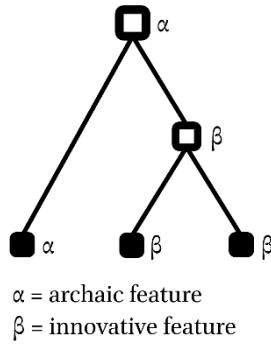


Figure 1.1: Family tree with two nodes

described as *unidirectional* when one direction of change is far more likely than the opposite (Weiss 2015: 135–6); with unidirectional isoglosses, it is clear which state is innovative and which is archaic, and they are therefore considered more secure.

A related concept is backmutation, that is, that a change is undone after it has happened. This could for instance be a phonetic change that is not phonologised and later reversed, or the creation of a new feature that is subsequently lost (Ringe, Warnow & Taylor 2002: 70). Changes that are liable to backmutation cannot be used for cladistic classification.

Once the direction of a change has been established, the next step is to determine whether the innovation in question happened in a shared prestage or independently in the sister languages. If a change has no or few specific conditions and can be shown to be cross-linguistically common, it could be due to parallel development and is usually considered *trivial*. On the other hand, a change that is context-specific and rare, and thus unlikely to have happened independently, is considered *significant*. In closely related languages, the chance of parallel development is bigger: the more similar the languages are, the more likely it is that they would undergo similar, but independent, innovations.

Generally, the evidence used for cladistic determination comes from phonology, morphology, and the lexicon. Syntactic isoglosses are rarely—if ever—used. First of all, the reconstruction of inherited syntax is difficult enough in itself without the addition of cladistic considerations, and secondly, the direction of change is often difficult to establish; see Ringe & Eska (2013: 212, 262). As for phonological, morphological and lexical isoglosses, there are inherent benefits and disadvantages with all three types of evidence; see Ringe, Warnow & Taylor (2002: 66–9), Ringe & Eska (2013: 256–65). In the phonological realm, the directionality is rarely disputed,

and the isoglosses are therefore mostly easy to analyse (Weiss 2015: 135–6). For instance, a phonological merger is both unidirectional and without the possibility of backmutation, because the original distribution of the given phonemes was lost at the completion of the merger. However, sound changes “are usually so ‘natural’ that they can easily be repeated in different lines of descent” (Ringe, Warnow & Taylor 2002: 66); in other words, they tend to be trivial. In addition, the use of typological data to determine how significant a phonological innovation may be is complicated by the fact that the phonetic realisation of a reconstructed phoneme system is an approximation. Using sets of phonological innovations greatly increases the importance of the evidence, but limiting ourselves to those instances would also mean decreasing the available evidence overall, as argued by Ringe, Warnow & Taylor (2002: 68).

Morphological evidence tends to be more significant than phonological evidence. Changes in morphology are often context-dependent; for instance, analogy in one paradigm relies on a model from another, and grammaticalisation of a suffix into a new case ending depends on language-specific morphosyntax. In addition, morphemes relate to each other in a more bounded and complex way than phonemes and lexemes, for instance, in an inflectional paradigm. A change in one form may therefore motivate the change in others more easily.⁹ Parallel development in the morphological realm is thus much less likely, and cross-linguistic trends are more difficult to ascertain. The problem with morphological change is that it can be difficult to determine which state is innovative and which is archaic (Ringe, Warnow & Taylor 2002: 68–9; Ringe & Eska 2013: 261–2). However, when that can be determined, morphological isoglosses are a highly valuable type of cladistic evidence.

Lexical isoglosses comprise different types of change with varying degrees of significance. Common to all of them is that they happen on the lexeme level, that is, in a single word. Word-specific sound changes, like dissimilation or taboo-deformation, may result in a phonological isogloss; likewise, derivation from one lexeme to another may result in a morphological isogloss. Since these types of changes are word-specific and not system-wide, it makes sense to classify them as lexical change. When determining their significance as cladistic evidence, they are subject to the same considerations as the system-wide phonological and morphological isoglosses: the rarer and more context-dependent they are, the more

⁹ We also find this to some extent in the phonological system where push- and pull-chain phenomena are known to occur.

significant they should be considered.¹⁰ However, lexical items are more prone to borrowing than other parts of grammar; if there is contact between related languages that do not share an immediate subnode, they may exchange lexical items that will appear as common innovations. This problem is not limited to the lexicon, but generally, it is the first part of grammar that is affected in a contact situation (Thomason & Kaufman 1988: 77). Lexeme-specific isoglosses of any type are therefore inherently less certain than regular sound change and system-wide morphological change.

When it comes to the position of Tocharian, the most common type of evidence proposed consists of semantic isoglosses; see 1.3.1. This is unfortunate since semantic isoglosses in the lexicon are generally less useful than phonological and morphological ones. First of all, semantic change can happen quickly and tends to follow cross-linguistic trends, maximising the possibility of parallel development. At the same time, directionality in semantic change is often much more difficult to establish than in sound change (Ringe, Warnow & Taylor 2002: 69). Moreover, the original meaning of a word can be obscured by derivation. It can also be difficult to rule out polysemy in the proto-form.

The advantage of using the lexicon is that the data pool is much larger than the morphological and phonological inventory. For that reason, lexical data takes a prominent role in quantitative cladistic studies; see 1.2.4. In a qualitative study, however, semantic isoglosses can only be used for genetic relationships if: 1) the words in question are inherited, not borrowed, 2) the semantic change is unidirectional, 3) there is no evidence of polysemy, 4) there is no discrepancy in the attested derivation which could account for the difference in meaning.

A final important consideration, relevant for all types of cladistic evidence, is the concept of absence. The presence of a feature in one language and its absence in another related language is a discrepancy that must be due to innovation on the part of one of them. The problem is that absence can be the result of either innovation or retention. That is, if a feature is missing from Language A and present in the related languages B and C, it can either have been lost in Language A or it may never have existed in the parent node of the family tree; see Peyrot (2022b: 90–1) who calls for ‘identifiability’ as a criterion for useful cladistic evidence.

When we are working with ancient languages, the first hurdle with regard to

¹⁰ For examples of highly specific lexical innovations in the morphological realm, see Hackstein (2024: 153–8) who proposes several “polylexical patterns” shared between Albanian and Tocharian, such as compound interrogatives and verbal suppletions.

absence is that it may be due to faulty attestation. Without speakers to rely on for data, we are at the mercy of textual evidence that rarely covers all aspects of the language. This is especially problematic in the case of Tocharian since we are dealing with an extinct branch without living descendants. If there had been living descendants of Tocharian, we would have had the opportunity to uncover parts of the lexicon and grammar through the comparative method.¹¹

Usually, absence is less of a problem in phonology, since the phoneme inventory of a language is smaller and more definite than other parts of grammar. It is also primarily here that a strong case can be made that the absence of a feature is due to loss, for instance when most languages of a family agree on a phoneme that one member is missing in some or all contexts. In order to use it for subgrouping, the phoneme must of course be absent in at least two members of the family, and it really depends on the conditioning of the sound change whether the loss can be considered probative. The same principle applies to the creation of a sound from nil, for instance through epenthesis.

In morphology, we are sometimes able to positively distinguish loss from original absence, when Language A preserves relics of the missing feature. In that case, the relics show that Languages B and C did not innovate the feature together to the exclusion of A, and thus constitute negative evidence for subgrouping. An issue in the morphological realm is that loss is not as context-dependent as other morphological innovations, so there is a higher chance that it happens independently in separate branches. In the lexicon, it is even worse, especially in light of the possibility that the absence is due to lack of attestation.

We must be extremely careful with isoglosses based on absence. In some cases, the absence of a phoneme can be used for subgrouping, but only if it can be proven to be due to loss and to be non-trivial. It cannot stand alone, but may be included among other more significant innovations, especially if it can be placed in the relative chronology. The same considerations may be true for morphological isoglosses, bearing in mind that proving loss over original absence is more difficult here. I do not think that the absence of lexical items can ever be probative in relation to cladistics, although it may be relevant to related fields, such as palaeolinguistics.

¹¹ The same must be true for Anatolian, a branch notorious for absence of features compared to other ancient Indo-European languages.

1.2.2. The family tree model

In the previous subsection, the family tree model was presented as the outcome of the cladistic method. The description of it is admittedly simplistic; I did not discuss what happens when isoglosses offer conflicting evidence. This is a well-known issue with the tree model; once languages have diverged from each other in the tree, there is no way to account for shared isoglosses except as parallel innovation. The family tree model, Gm. *die Stammbaumtheorie*, was proposed by Schleicher (1863) to describe the relative relatedness of the Indo-European languages. However, criticism of the family tree is almost as old as the model itself. Not even 10 years later, Schmidt (1872) proposed the wave model, Gm. *die Wellentheorie*, which describes linguistic innovation as a wave that spreads from a centre. This model can account for conflicting isoglosses because the centre of one isogloss does not need to be the same as for another, and they can thus overlap in various ways. Since then several models of diffusion have been proposed, for instance, the space/time model (Meid 1975; Neu 1976; Neu 1985) and glottometry (François 2015). In this section, I present my reasoning for applying the tree model and a cladistic approach to the problem at hand, despite its shortcomings.¹²

The main criticisms against the tree model are these: it assumes separation of speech communities as the driver of change; it does not account for convergence phenomena; it treats languages as undifferentiated wholes; it simplifies the complexity of language change to an unrealistic degree; and, as mentioned above, it does not account well for conflicting evidence (Garrett 1999; 2006; Drinka 2013; François 2015). While I mostly agree with all five points, I do not think they preclude the use of cladistics in historical linguistics.

Starting with the first point, I agree that cladistics assumes separation, either social or geographical, as a basic mechanism. However, it is not clear whether that in itself is a disadvantage. Whereas the tree model assumes separation as a cause of diversification, a diffusion model assumes proximity, either continuous or resumed. Either scenario is possible, as examples from attested language families show, but both require an assumption about the speakers of the language.¹³

¹² The discussion of the validity of the various models far outreaches the confines of this chapter. Recently, an addition of the *Journal of Historical Linguistics* was dedicated to the matter; see Kalyan, François & Hammarström (2019: 3–5) for an overview of the contributions.

¹³ The method for determining subbranching shows linguistic, not geographical, separation. The same is true for determining convergence phenomena; from these we can establish

As for the second point, it is possible to counter it simply by stating that the tree model does not account for convergence phenomena because it is not designed to do so. However, the criticism of Garrett (1999; 2006) goes deeper than that. On the basis of Celtic and Greek, he argues that there is insufficient evidence for positing a proto-language for these branches, since it has turned out that many formerly diagnostic innovations of Proto-Celtic and Proto-Greek had not yet occurred in the most ancient members of the branches (Leponitic for Celtic, Mycenaean for Greek). Since it can be shown that Leponitic and Mycenaean are not in fact the proto-languages of their respective branch, the diagnostic innovations must have happened in an already diversified linguistic community, proving secondary convergence or parallel development. Garrett's argumentation (1999: 153) emphasises convergence as the key factor for the creation of branches and calls the very notion of proto-languages into question. However, at least for Greek, it has been shown that there are in fact several innovations that include Mycenaean and can thus be attributed to Proto-Greek (de Vaan 2008a: 1229–30; Scarborough 2023: 28–9). This means that there are innovations, specific to the Greek branch, that cannot be positively attributed to convergence, and for which the simplest explanation is that they happened once in a unified speech community. That being said, the importance of convergence should not be underestimated in cladistic research, and it would be useful to develop the graphic representations of the tree model to incorporate it.

As for the last three points, the most important factor to consider is time depth. The more complex the data, the more complex the model is required to be to describe it. This means that the tree model is usually inadequate when it comes to describing the dialectal relationships between modern languages; if it is used, it must be supplemented by more finely tuned models. The further we move back in time, however, the larger the loss of complexity is. For most ancient languages, even if the attestation is ample, a lot of information pertaining to the sociolinguistics, dialects and other diversity factors are lost to us. By virtue of the comparative method, the language stages that we can reach by reconstruction cannot exhibit such diversity, because its features are determined on the basis of regular correspondence. This does not mean that ancient and prehistoric language did not have the same amount of complexity as modern ones; only that we cannot describe or analyse data which is

degrees of contact between (pre-)proto-languages, but we cannot tell where exactly this contact took place. When—and only when—we find linguistic evidence of divergence or convergence, may we look to extra-linguistic evidence to put these into geographical perspective.

not available to us. I find the constellation metaphor used by Clackson (2007: 16) apt: a proto-language is like a collection of stars situated at various distances from the earth, but from our point of view they appear as two-dimensional images. Thus, what appears as one synchronic language stage to us may (and probably does) comprise a variety of features from different stages. This is a product of the comparative method that cannot be remedied. If we were to treat a proto-language as a diversified language, any discrepancy in the daughter branches could be attributed to dialectal variation. This in turn would completely invalidate the concept of a proto-language and with it, the comparative method itself.

Taking this into account, the simplicity of the tree model is turned to an advantage when we are talking about the relatedness of prehistoric higher-order nodes in a family tree. As has been pointed out by Ringe (2015: 488–9), the greatest strength of the tree model is that it is falsifiable. Since we are dealing with hypothetical language stages, this is a highly valuable quality. It allows us to test concrete possibilities and reject them, if the evidence warrants it. In addition, when a particular tree is falsified, it furthers our understanding about the prehistory of the language family. For instance, if related language branches show strong, but conflicting, isoglosses, it suggests that some interference event has happened. The significance of the various isoglosses can then help us hypothesise which of them constitute shared innovation from an inherited stage and which constitute later convergence or diffusion of features. Thus by applying the simpler method, we may also gain insight about complex events.

In this regard, a diffusionist approach falls short. At the time depth in question, we only have circumstantial evidence for the position and movement of the speakers at best, so there is almost no way to test the validity of a hypothesis. Unless there is evidence for the relative chronology of conflicting isoglosses, all scenarios are equally plausible. In turn, any statement beyond the fact that there is conflicting evidence indicating some degree of diffusion—which the cladistic approach can also tell us—is pure speculation. It may be substantiated by extra-linguistic evidence, but cannot be verified using linguistic arguments alone.

1.2.3. Terminology

There is a Danish proverb that comes to mind when speaking about the terminology for the Indo-European family tree: “A beloved child has many names”.¹⁴ This was

¹⁴ Dan. *Kært barn har mange navne*.

demonstrated clearly by Olander (2019b: 234), who presents a list of the terminology pertaining to the proposed higher-level nodes of the Indo-European family tree. The list, which is non-exhaustive, comprises more than 20 naming strategies, employing both temporal and geographical descriptors, e.g., ‘Archaic Indo-European’, ‘Late Indo-European’, ‘West Indo-European’, as well as more abstract labels such as ‘Indo-European Proper’ and ‘Classic Indo-European’. A major problem with several terms is that they are employed for different nodes of the tree by different scholars. Due to the complete lack of consistency, I will explain my choices of terminology in this subsection. I have strived to use existing terms so as not to add to the load.

I will refer to highest parent node as ‘Proto-Indo-European’ (PIE). As the position of Anatolian as the first outlier has become increasingly well substantiated, the term ‘Indo-Hittite’ (Sturtevant 1929: 27) and the updated variant ‘Indo-Anatolian’, have gained some popularity; see e.g., Ringe (1998: 32), Pronk & Kloekhorst (2019). The benefit of these two terms is that it is immediately clear for an Indo-Europeanist whether a given reconstruction includes Anatolian or not. However, it creates a discrepancy between the name of the language family and the field of study, i.e., ‘Indo-European (linguistics)’, and the earliest stage of the proto-language of that family, and it implies that Anatolian is not an Indo-European language in the strict sense (Olander 2019b: 237). Unless we simultaneously change the name of the language family, which would be both cumbersome and confusing, I think that we should retain ‘Proto-Indo-European’ as the name of the proto-language of all branches. Note that I do not reserve ‘PIE’ purely for reconstructions that are backed up by Anatolian, unlike e.g. Ringe (1998: 32). Since this thesis is not focused on Anatolian or its phylogenetic position, it is not always relevant whether a feature should be reconstructed for the first or the second node, just that it was present in the proto-language ancestral to Tocharian.

With the increased focus on the cladistics of Indo-European, a strategy for the family tree has been developed, inspired by Sturtevant’s ‘Indo-Hittite’, that names each node of the tree according to the first branch to separate from it: ‘Indo-Anatolian’, ‘Indo-Tocharian’, ‘Indo-(Italic)-Celtic’, etc. (Peyrot 2019a: 186–7; Olander 2019b: 239–40; Søborg 2020: 5). For scholars familiar with the phylogenetic discussion—in particular the family tree presented by Ringe, Warnow & Taylor (2002)—this strategy is quite effective, but for the purposes of the present thesis, it is not viable. First and foremost, naming the second node ‘Indo-Tocharian’ pre-empts the conclusion that Tocharian was indeed the second branch on the tree. Since this is the question at hand in the studies of this thesis, I will avoid the term altogether. Another disadvantage of these terms is that they do not presume a fixed order in the

family tree. Hypothetically, if the *communis opinio* was to shift and place Tocharian as, say, the fifth branch, ‘Proto-Indo-Tocharian’ would still be a valid name according to the principles of the phylogenetic naming strategy, but it would entail a totally different reconstruction. For this reason, I prefer ‘Tocharian Second’ to ‘Indo-Tocharian’ as a name for the hypothesis that Tocharian separated as the second branch.¹⁵

The question then remains what to name the remaining group of Indo-European branches. This involves a small paradox. On one hand, we need a reconstruction with which to compare Tocharian, i.e. a “proto-language” in which innovations can potentially be proven to have happened without Tocharian. On the other hand, setting up and naming a proto-language, for which the evidence has yet to be established, may speak it into existence prematurely; see below 1.2.4. We thus need a term for a linguistic unit in which Tocharian is not inherently included, that still has the potential to include Tocharian if that is where the evidence goes. The term I have chosen is ‘Core Indo-European’. Olander (2019b: 238) argues against using this term as it is ambiguous and is used to refer to the proto-language including and excluding Tocharian by different scholars. However, for the purpose that I have just described, the ambiguity actually works in its favour. Additionally, it is a relatively widespread term (Olander 2019b: 234) and it has the advantage of not containing the prefix ‘proto-’. Since I primarily use the abbreviation ‘CIE’, which could also stand for ‘Classic(al) Indo-European’, the meaning should be clear to most scholars without their needing to look up this terminology section.

1.2.4. Quantitative methods and the position of Tocharian

This thesis applies a qualitative approach, treating each isogloss individually as described in subsection 1.2.1. Yet, in modern scholarship, quantitative approaches to cladistics are gaining traction, and as we saw in 1.1, one quantitative study has been especially influential with regard to the position of Tocharian. For a description of the various types of computational phylogenetic methods, see Carling (2024: 107–123).

An early attempt at quantitative cladistics was developed in a 1927 study by J.

¹⁵ As for the hypothesis that Anatolian was the first branch to separate from the family tree, I will use the term ‘Indo-Anatolian’, partly because it is more widely recognised and partly to avoid the awkward phrase ‘Anatolian First’; see Kloekhorst & Pronk (2019: 2), Olander (2019b: 234).

Czekanowski¹⁶ and furthered by Kroeber & Chrétien (1937), who calculated the degrees of relatedness of the Indo-European branches on the basis of the presence or absence of a list of phonological and morphological features. The study was reproduced by Adams (1984), adding the relevant data from Tocharian, which was missing from the original study. Adams' results showed a link between Tocharian, Greek, Armenian and to some degree Germanic, which was in line with results from qualitative studies at the time; see Benveniste (1936), Porzig (1954: 182–7), also Lane (1971: 77–8). However, the method does not discriminate between innovative states and retentive ones, so we cannot know whether the closeness of Tocharian to Greek and Armenian is due to shared development or parallel retention, and the results are therefore not meaningful.

Since then, increasingly sophisticated computational methods have been developed to tackle the Indo-European family tree; see Gray & Atkinson (2003), Bouckaert et al. (2012), Chang et al. (2015). These studies combine Bayesian analysis, borrowed from evolutionary biology, with glottochronology, originated by Swadesh (1952), to arrive at an absolute chronology for the splits of the tree.¹⁷ All three studies place Tocharian as the second branch to separate from the tree. However, the data that went into the analysis is flawed in various ways. Among other things, the isoglosses used were purely lexical and were not marked as innovative or retentive; see the extensive criticism in Pereltsvaig & Lewis (2015: 64–91) and recently Ringe (2022).¹⁸

Although they arrived at a very similar result for the higher-order nodes of the tree, the study by Ringe, Warnow & Taylor (2002), and the subsequent study by Nakleh, Ringe & Warnow (2005), have gained much wider acceptance in the Indo-European scholarship. The reason for this is that they combine the quantitative approach with qualitative analysis. They incorporate morphological, phonological

¹⁶ *Apud* Kroeber & Chrétien (1937: 83), Piwowarczyk (2022: 35).

¹⁷ Bouckaert et al. (2012) adds a phylogeographical approach.

¹⁸ In addition, the chronological results of Gray & Atkinson (2003) and Bouckaert et al. (2012) are problematic. These two studies arrive at an immense time depth for first split of the tree, consistent with a Proto-Indo-European homeland in Anatolian; see Renfrew (1987). This approach to determining reconstructed chronologies has been heavily criticised and has generally not gained acceptance among Indo-Europeanists; see in particular Pereltsvaig & Lewis (2015: 92–126). Chang et al. (2015) introduce ancestry constraints based on attested changes in medieval and ancient languages, and thus arrive at a time depth more consistent with the steppe hypothesis, the standard homeland hypothesis based on linguistics, archaeology, and genetics; see the recent volumes on the subject by Olsen, Olander & Kristiansen (2019b) and Kristiansen, Kroonen & Willerslev (2023).

and lexical isoglosses using a weighted maximum compatibility model, in which a phylogeny must be compatible with certain isoglosses to be viable (Nakleh, Ringe & Warnow 2005: 395). The result is a so-called ‘best tree’, the tree that is compatible with the largest amount of isoglosses. It is important to note—which the scholars behind the study do—that due to many incompatible isoglosses the Germanic branch is not included in several of the best trees generated (Ringe, Warnow & Taylor 2002: 87–90). The results of the study are thus both interesting and informative, but should be treated with caution. The isoglosses that are most important for Tocharian will be discussed in the following subsections. One of them is investigated in depth, namely the status of the thematic optative (Chapter 6).

In conclusion, the new computational approaches have not been uniformly successful, but with the inclusion of properly evaluated data, they have the ability to clarify and support the traditional approach (Ringe, Warnow & Taylor 2002: 66; Clackson 2015: 5–6; Olander 2022b: 3). Quantitative studies thus rely on the results of qualitative ones; hopefully, the results of this thesis will inform quantitative studies in the future.

1.2.5. The cladistic approach to reconstruction

The increased attention to the constitution of the Indo-European family tree has brought with it an awareness of the consequences it holds for our reconstructions. By weighing evidence according to the relative position of the daughter branches, it may be possible for us to stratify the reconstructible grammatical features of Indo-European into proto-stages. This is expressed well by Ringe:

“It follows automatically that nothing can be reconstructed for Proto-Indo-Hittite (PIH) unless it is attested in Anatolian and at least one other branch; that nothing can be reconstructed for PIE proper unless it is attested in either Anatolian or Tocharian and at least one other branch; [...]” (Ringe 1998: 32)

The potential of the approach is great. A solidly founded family tree would without a doubt increase our understanding of the chronology of both shared and branch-specific innovations and give us a much clearer image of the proto-languages represented by each node of the tree. This in turn would benefit interdisciplinary work such as the study of ancient migrations; see Olander (2018: 188–95) for discussion and examples of the application of the approach. However, while this potential outcome is very attractive, the dangers should not be underestimated.

Weighing the data of Language A heavier than Language B with the assumption that the former is more archaic may induce confirmation bias, in which every discrepancy between the two languages is solved in favour of Language A. Even if the phylogeny is correct, the approach may wrongly identify innovations of Language A as archaisms. In a worst case scenario, if the position of Language A in the family tree is not well-supported by independent evidence, this bias might lead to a false positive, based on circular argumentation.

For these reasons, studies that have applied the approach in an overt manner have taken care to be explicit about what they consider to be the foundational evidence¹⁹ for the family tree they use (Ringe 1998: 32; Olander 2018: 186; Søbørg 2020: 4–7). However, in studies without a cladistic focus, we also find examples where the method is applied as an explanatory tool. This is often the case when a linguistic discrepancy is consistent with the branching of a family tree with which the author agrees. These studies show the power that cladistics can have in nuancing and explaining our reconstruction, but the applied family tree is not always motivated and the explicitness about the independent evidence for it tends to be lost. While there is no reason to suspect that any one scholar operates with confirmation bias, as a field, we must be careful that the independent evidence for branching is not conflated with discrepancies that are consistent with that branching.

In this thesis, the goal is to investigate and evaluate possible foundational evidence for the position of Tocharian. It would thus indeed be circular to operate with a cladistic approach to reconstruction.

1.2.6. Forward reconstruction as a heuristic device

After having applied the comparative method to identify related languages and the cladistic method to see how they relate to one another in the family tree, at least in lower-order nodes (see 1.2.1, 1.2.2), reconstruction of the proto-language(s) can begin. To arrive at the most likely reconstruction, two methods are employed: internal reconstruction, through which we identify irregularities in the grammatical system of a single language as evidence of an earlier system, and external comparison, through which we compare related languages with each other to identify their correspondences and discrepancies. These two methods work in tandem to propel the reconstruction further back in time. To use Tocharian as an example, we must

¹⁹ Or “forcing”, in the terminology of Ringe, Warnow & Taylor (2002), meaning isoglosses that force a certain position in the phylogeny.

submit the grammatical systems of Tocharian A and Tocharian B both to internal reconstruction separately and to comparative analysis with each other. The internal analysis may lead to the reconstruction of pre-Tocharian A, pre-Tocharian B and possibly even earlier stages. Then, when applying the comparative method on the two languages, the internal reconstruction can inform the analysis and help determine which features should be reconstructed for Proto-Tocharian. When most of the grammatical system has been reconstructed—to the best of our abilities—internal reconstruction can run its course again to try to identify features of pre-Proto-Tocharian. That stage should be compared with (pre-)proto-languages from other nodes of the Indo-European family tree, and that is how we arrive at Proto-Indo-European; see Winter (1994a: 285). This can be described as a bottom-up approach.²⁰

The opposite term, the top-down approach, usually holds the negative connotation that a hypothesis skips the necessary internal reconstruction and goes straight to external comparison with an already established reconstruction; see e.g., Malzahn (2016b: 390–1). This can result in a forcing of the material to suit the reconstruction that we already have, a Procrustean bed for the language in question, to borrow a term from Jasanoff (2003: 177). However, in line with Pinault (2020: 384), I would argue that a careful application of top-down thinking can help rather than hinder our understanding in some cases.

“In the case of Tocharian, which had certainly a long prehistory, involving several intermediary steps, restructurings and influences from other languages, the forwards processing should be used as a complementary device.” (Pinault 2020: 384)²¹

In several chapters of this thesis, the question is asked: “If a given paradigm had been inherited into Tocharian, what would have happened to it?”. The point is to take a reconstructed paradigm and gradually project it into the Tocharian languages, employing the sound laws and morphological changes that have been established independently. This is especially helpful in the morphological realm, because the directionality of changes is often difficult to establish. The most secure application of this approach is to apply it to a paradigm whose origins have been established. If we know where a paradigm started from and how it ended up, the projection can help

²⁰ In other fields of linguistics, this term is used for other types of analyses that start from the bottom of a given hierarchy and work their way upwards (Crystal 2008: 58).

²¹ See also Watkins (1962: 7–8).

us find the most likely analogies. It can also be useful in other more hypothetical cases, for instance, when testing the likelihood of a hypothesis. If there are implausible or an unreasonable amount of steps needed to get from the reconstructed form to the attested one, it indicates a flaw in the input data and the hypothesis should be changed. In cladistic research, this type of argument—essentially an *argumentum ad absurdum*—can be used to assess the directionality of a change in cases where it is unclear whether a given paradigm is archaic or innovative.

The approach does not stand in opposition to the bottom-up approach; rather, it relies on it and constitutes a supplement to it. Calling it a ‘top-down’ approach would therefore not be accurate. Pinault (2020: 384) uses the apt term ‘forward reconstruction’. In several of the chapters of the thesis, it will become clear how forward reconstruction furthers our diachronic analysis of the problems at hand.

1.3. Proposed isoglosses

In the past century since its discovery, Tocharian seems to have been linked to almost every other branch of Indo-European; see Malzahn (2016a: 281) for references. The attempts to fit Tocharian into a larger dialectal group has lost ground to the Tocharian Second hypothesis in recent years,²² and instead we have seen a steady growth in proposed isoglosses separating Tocharian and the CIE languages, although critical treatments have also been conducted (Hackstein 2005; Malzahn 2016a).

In the following subsections (1.3.1–1.3.3), I present and assess the most prominent of these isoglosses. Some isoglosses need detailed treatment, e.g., the primary middle particle **-r* vs. **-i*; however, due to the limitations of the thesis, they must await further investigation in the future. In subsection 1.3.3, I will briefly list the isoglosses that are treated in this thesis but I refer to their respective chapters for description and analysis.

1.3.1. Lexical isoglosses

As discussed in subsection 1.2.1, lexical isoglosses are generally less reliable than

²² However, recent ongoing work by S. Norbruis, presented at the 2022 Arbeitstagung der Indogermanischen Gesellschaft at Leiden University (Norbruis 2022), has shown some links with Indo-Iranian and Balto-Slavic which have otherwise gone unnoticed in the scholarship; see Malzahn (2016a: 282).

morphological and phonological isoglosses. Nevertheless, in the case of the Tocharian Second hypothesis, a significant part of the proposed isoglosses are lexical. They are central to the study of Winter (1997), as well as to the computational study by Ringe, Warnow & Taylor (2002), and are therefore frequently cited. Many of them have been called into question, most notably by Malzahn (2016a), whose critiques I often agree with.

The lexical evidence proposed is mostly of one specific type, namely semantic isoglosses, in which Tocharian allegedly shows an older meaning than other Indo-European branches. Before starting the discussion, it might be useful to reiterate the criteria set up for useful semantic isoglosses: 1) the words in question are inherited, not borrowed, 2) the semantic change is unidirectional, 3) there is no evidence of polysemy, and 4) there is no discrepancy in the attested derivation which could account for the difference in meaning. Among the isoglosses in question, there are no indications of possible loanwords, but the latter three criteria will all become relevant in one or several instances.

To start with, there are three proposed isoglosses that do not live up to the more general criteria for proving a Tocharian archaism opposite a shared CIE innovation. The first is ^b*laks* ‘fish’; Winter (1997: 185–6) points to this word as a possible archaism, compared to other branches that attest the more specific meaning ‘salmon’ (or similar): OHG *lahs*, ON *lax*, Lith. *lašisa*, Rus. *losós* ‘salmon’, Oss. *læsæg* ‘salmon, brown trout’, Arm. *losdi* ‘salmon’. According to Winter, the Balto-Slavic and Germanic reflect an *o*-stem **lokso-*, and he suggests that the stem formation and the meaning ‘salmon’ is a post-Tocharian innovation. However, the Balto-Slavic words do not go back directly to an *o*-stem, but rather an *s*-stem: Rus. *losós* < PBSL. **losos-* < **loks-os-* (Derksen 2008: 285). Kroonen (2013: 258–9) suggests an original paradigm **lók-ōs*, gen.sg. **lok-s-ós*, but the Baltic material, Lith. *lašisa*, Latv. *lasis*, would require another derivation. In addition, the Ossetic form is probably a borrowing, probably from Slavic (Cheung 2002: 200–1), and the Armenian word, which is unattested outside dictionaries, shows a yet different stem formation (Martirosyan 2010: 312). The troubles with the word formation makes a common innovation difficult. Even if there is cause to take the meaning ‘salmon’ as a shared innovation of Balto-Slavic and Germanic, it is not out of the question that the original meaning of the word was ‘salmon’ which underwent widening to ‘fish’ in Tocharian.²³ Thus, in the best case scenario, this isogloss may be used to argue for a closer cladistic relationship between

²³ For some examples of widening in animal names in Old English, see de la Cruz Cabanillas (2007: 141–2).

Germanic and Balto-Slavic, but it does not substantiate Tocharian Second.

Another isogloss proposed by Winter (1997: 187–9) that can be dismissed is the verb ^B*wās-*, ^A*wās-* ‘give’, which he connects with ^B*wase*, ^A*wās* ‘poison’, also found in Skt. *viśá-*, Av. *viš-*, Gk. *íōs*, Lat. *vīrus*,²⁴ OIr. *fī* ‘poison’; for a semantic parallel, see Gm. *Gift* ‘poison’. The implication is that the base verb was lost at a shared stage of the CIE languages, but preserved in Tocharian. As Malzahn (2016a: 284) points out, the connection of the verb and the noun is made difficult by the existence of the preterite participle ^A*wawu* without root-final *-s-*. This form implies that the *-s-* was a stem formant of the finite verb rather than a root consonant, and so we would not expect to find it in a deverbal noun. In addition, as argued above, loss cannot be considered a significant innovation, especially in the lexicon.

Similarly, the isogloss proposed by Weiss (2018: 374–5)—that the absence of ^{*}*h₃rḗgs* ‘king’, ^{*}*h₃rḗgnih₂* ‘queen’ in Tocharian reflects an archaism—is not probative. He points out that the formation of ^B*walo*, ^A*wäl* ‘king’ and ^B*lāntsa*, ^A*lānts* ‘queen’ must be very old, that ^B*epetsa** ‘fiancée’ < ^{*}*potih₂* looks to be without influence from ^{*}*h₃rḗgnih₂*, and that the verbal root ^{*}*h₃reǵ-* means ‘extend’ in Tocharian: ^B*rək-*, ^A*räk-*. These arguments are interesting, but all circumstantial. The argument that relies on ^B*epetsa** ‘fiancée’ is particularly uncertain, since the word is only attested once as *epetso* in THT275 b4, which looks like an oblique singular form, but could also be an adverb ‘in marriage’; see Pinault (2010a: 36; 2010b: 270) and Peyrot (2013a: 663 fn. 45). In any event, the fact is that the word ^{*}*h₃rḗgnih₂* is absent from Tocharian and thus, we cannot establish an archaism. Considering the diversity of words for rulers in the Indo-European languages—or just in English—there is no way to prove that the two words did not exist side by side in PIE or that ^B*walo*, ^A*wäl* ‘king’, ^B*lāntsa*, ^A*lānts* ‘queen’, originally from an ^{*}*nt*-participle, were not created in the prehistory of Tocharian (see 5.4.2–5.4.3).

Contrasting with the three rejected isoglosses above is the Tocharian A adjective *wir* ‘young, juvenile’ (Carling & Pinault 2023: 446), which seems to go back to PIE ^{*}*uiH-ró-*. This proto-form is reflected in many CIE languages, but as a substantive meaning ‘man, young man, warrior’: a.o. Skt. *vīrá-* ‘(strong) man, hero’, Av. *vīra-* ‘man, human’, Lat. *vir* ‘man, husband’, OIr. *fer*, Got. *wair*, Lith. *výras* ‘man’ (Wodtko, Irslinger & Schneider 2008: 726). The suffix ^{*}*-ró-* forms adjectives in Proto-Indo-European, e.g., ^{*}*h₁rudh-ró-* ‘red’, ^{*}*h₂rg-ró-* ‘swift’. Since Tocharian A reflects an adjective, it is plausible that the Tocharian branch continues a state before the

²⁴ Probably the long vowel goes back to the full-grade ^{*}*ueis-* (de Vaan 2008b: 682–3).

conversion to noun found in the CIE languages (Adams 1987: 174–5; Søborg 2020: 6).²⁵ ^A*wir* follows the inflection of other inherited ^A*ro*-adjectives, e.g., ^A*rtär* ‘red’ < ^A*h₁rud^h-ró-* (Carling & Pinault 2023: 394), so morphologically, the form looks like an archaism. Whether the semantics of Tocharian A are also original is more difficult to determine.

In Krause & Thomas (1964: 143), the meaning of the Tocharian A adjective is given as ‘youthful, young, fresh’ (Gm. ‘jugendlich, jung, frisch’). In the corpus, however, there are no sure instances of the meaning ‘fresh’; the only certain passages show the meaning ‘young’.²⁶ The adjective is used to refer to women as well as men: compare YQ3.12 a2 *wires kāwāltenās šāmnās* ‘young and beautiful monks’ (*wires* m.acc.pl.) with A169 b1 *klyuśūrāš wiram k₁lewāñ trāñkiñč* ‘having heard this, the young women spoke’ (*wiram* f.nom.pl). It is possible to trace the specialised CIE meanings to a common prestage ‘young man’, a substantivised form of the masculine adjective, e.g.:

‘young’ m.	→	‘young man’	
Lat.	⇒	‘man’	⇒ ‘husband’
Skt.	⇒	‘strong man’	⇒ ‘hero’

However, considering the agreement on the more basic meaning ‘man’, and the possible etymological connection to Gk. ἔμαι ‘hasten; be eager’, it may be more attractive to posit an original meaning ‘strong, vital, eager’; see Harðarson (1993a). If so, the laryngeal can be determined as ^A*h₁*. This fits the reflex in Tocharian A well; the same development ^A*ih₁C* > ^A*ayC* > ^A*äyC* is most likely found in the optative suffix,²⁷ and the two other laryngeals are expected to vocalise in that position, e.g., ^B*šay-/šaw-*, ^A*šāw-* ‘live’ < ^A*g^wih₃u-*, possibly ^B*tsaka-* ‘bite’ if from ^A*d^hih₂g^w-* ‘stab’ (Ringe 1996: 23; Peyrot 2013a: 536–7).²⁸ It is noteworthy that ^A*h₁* behaves differently than the other two laryngeals in this context; without the optative suffix, the phonological

²⁵ Conversion also seems to have happened in the feminine: ^A*uiH-r-eh₂-* > Ved. *vīrā-* ‘heroine’, OLat. *vira* ‘woman’.

²⁶ See YQ 3.12 a2, a4, b1, A112 a3, A169 b1, A277 a6, A318 and 319 a5, a7, and A360 a6 (translating Skt. *taruṇa-* ‘young, tender, juvenile’).

²⁷ The word for ‘20’, ^A*uih₁kñtihi₁* > PT ^A*wikən* > ^B*ikäm*, ^A*wiki* ‘20’, mentioned by Ringe (1996: 25) and Hackstein (2017: 1314) as supporting evidence for this sound change, is more difficult. Lat. *vīginti* shows an unexpected voiced velar, OIr. *fiche* shows the reflex of a short vowel in the first syllable, and cognates in Indo-Iranian seem to show a nasal rather than a laryngeal: Skt. *viṃśatī-*, Oss. *insæj*. The reconstruction of the word is thus quite uncertain.

²⁸ In addition, there are numerous examples of the reflex of PIE ^A*-ih₂* > PT ^A*-ya* (Ringe 1996: 23).

developments of this word may need to be reevaluated. The optative suffix and its history is treated further in Chapter 6.

The other important consequence of connecting the Greek verb to ^A*wir* is that the meaning of the Tocharian A adjective would then not be an archaism as such, but a separate innovation:

‘strong, vital’

→ CIE ‘strong, vital man’ (⇒ ‘man’; ‘husband’; ‘hero’)

⇒ Toch. ‘young’

In addition, while the conversion from adjective to noun looks like a common CIE innovation, it is not clear how significant this innovation is as substantivisations of adjectives without any overt morphological marking seems to have been relatively common in the Indo-European branches (Höfler 2020). In fact, an old superlative *vīrātama-* ‘very strong hero’ is found in Vedic, indicating that the conversion is recent, even branch-internal. In conclusion, if one accepts the two assumptions needed to derive ^A*wir* ‘young’ from ^A*uih₁ró-* ‘strong, vital’, the sound change ^A*ih₁C* > ^A*əyC* and the semantic shift from ‘strong, vital (of men?)’ to ‘young (m./f.)’, ^A*wir* ‘young’ looks like an archaism within Indo-European, although not a very significant one.

For several words, Malzahn (2016a: 283) invokes what she calls a ‘^A*sneig^{wh}* constellation’, referencing the double meaning which is traditionally reconstructed for PIE ^A*sneig^{wh}-*: ‘to be sticky; snow’.³⁰ It should not be assumed that a word had multiple meanings in the proto-stage if there is no positive evidence for it. When there is evidence of polysemy, however, the argument holds; cf. criterium 3) above.

There are at least two proposed isoglosses that can be rejected on grounds of polysemy. The first is ^B*yəp-*, ^A*yāw-* ‘enter; set (of the sun)’ which, according to Schmidt (1992: 113), Winter (1997: 493) and Carling (2005: 48), reflects a semantic archaism of the Proto-Indo-European root ^A*iebh-* compared to the CIE languages where the meaning ‘have sex with’ is attested: Ved. *yábhati*, Gk. *οἶφω*, Rus. *ebú*, SCr. *jèbati* ‘have sex with’ (LIV 2001: 309). This semantic change is clearly unidirectional, making it a potentially useful lexical isogloss. However, as Malzahn (2016a: 283) points out, there is potential evidence from Iranian showing the original meaning, e.g., MPer. *jwmb-* ‘to move’, Sogd. *y’β* ‘to wander, rove’ < PIr. ^A*ia(m)b/p-* (Cheung 2007: 212–3), and from

³⁰ In a recent proposal, Kroonen, Wigman & Thorsø (2021 [2023]) argue that the primary meaning of the root ^A*sneig^{wh}-* was ‘fall down’, from which the meaning ‘snow’ developed in an impersonal verbal construction. A similar suggestion was given independently by M. Weiss in a presentation at the 2023 ECIEC (p.c. A. Lubotsky, A. Wigman).

other Indo-European languages that attest the meaning ‘west’. Cheung sets up two different roots to account for the meaning ‘move (into)’ and the sexual meaning, pointing to the evidence for initial $*h_3$ in Gk. ὄφω, while Malzahn opts for a single root to explain both meanings. In either case, no archaism can be established in Tocharian. If Cheung is right, the Tocharian verb should be separated completely from $*jebh-$ ‘have sex with’. If Malzahn is right, the archaic meaning ‘move (into)’ was preserved into Indo-Iranian; whether the sexual meaning was present in a (pre)stage of Tocharian is difficult to say as the lack of evidence could be due to faulty attestation due to the subject matter.³¹

The case for $^B\acute{s}ran-$, proposed by Carling as an isogloss (2005: 48), is similar. Carling (2003a: 84–6, 92–3) showed that the word is a noun meaning ‘adult man’ from PIE $*\acute{g}erh_2-$ rather than an adjective meaning ‘old’;³² compare Skt. *járant-*, Oss. *zæronð* ‘old; geriatric’, Gk. γέρων, -οντος ‘old man; adj. old’. The root $*\acute{g}erh_2-$ probably meant ‘mature’ originally (Carling 2005: 48), whence both the meanings ‘adult’ and ‘old’ could emerge. The Tocharian meaning ‘adult’ is thus not more archaic than ‘old’; it is rather a separate semantic innovation from a common prestage ‘mature’. The same innovation is found in Germanic in derivations with an *l*-suffix: ON *karl* ‘man, common man’ and OEng. *ceorl* ‘man, low freeman’ (Malzahn 2016a: 284–5). Since $^B\acute{s}ran-$ does not continue an *nt*-stem like its Greek and Indo-Iranian cognates (cf. nom.pl. $^B\acute{s}ray$), we must also assume that the word formation happened independently to a root that probably meant ‘mature’ in Proto-Indo-European.

A third potential Tocharian archaism that may show evidence of polysemy is $^B\acute{k}ärweñe$, $^A\acute{k}ärwaṃ*$ ‘rock, stone’.³³ The word is cognate with a.o. Skt. *grávan-* ‘soma-pressing stone’, Wel. *breuan* ‘millstone’, Got. *asilu-qairnus* ‘donkey-mill’, Lith. *gìrna*, Arm. *erkan* ‘millstone’, ultimately going back to $*g^wreh_2uon-$ / $*g^w\acute{r}h_2un-$, a $*uon$ -stem derivative of $*g^w\acute{r}h_2u-$ ‘heavy’ (Van Windekens 1976: 209; Kroonen 2013: 255). Winter (1997: 495), followed by Carling (2005: 48), suggests that Tocharian preserves the older, less technical, meaning and that the other branches innovated together. This direction of change is certainly more likely than the opposite, but as Malzahn (2016a:

³¹ If we compare Eng. *enter* (*into*), which is still a common and neutral verb for ‘go into’, the meaning ‘penetrate sexually’ is attested as early as 1425, showing that the specialised meaning can exist side by side with the more general one for a long time, even if the former is sexual or liable to taboo; see the OED Online, s.v. *enter*, accessed 25 September 2023.

³² As was previously believed (Adams 1999: 644).

³³ The Tocharian A word is attested A12 a5 in a locative plural *kärwaṃsaṃ* ‘among the rocks’ (Carling & Pinault 2023: 125). For the possible attestation of the nom.sg. in THT2457 a4, see Itkin (2011: 250).

284) argues, we do not know the Tocharian word for ‘millstone’; it could be ^B*kärweñe*, ^A*kärwan**. S. Norbruis (p.c., article in preparation) points to the fact that Skt. *grávan-* also is used to mean ‘stone, rock’ more generally. The generic meaning is attested later than the specific meaning ‘soma-pressing stone’, but it is found several times (Böhtlingk & Roth 1858: 862; Monier-Williams 1899: 374). We may interpret these facts in one of two ways. Either the original meaning ‘stone’ (← ‘heavy one’) was preserved alongside the technical meaning into Indic, and thus probably in other individual branches. In that case, the word was polysemic and cannot be used as cladistic evidence. Alternatively, the generic meaning ‘stone’ is a Sanskrit innovation, which would weaken the argument that the meaning ‘stone’ in Tocharian must be an archaism considerably.³⁴

There are four lexical isoglosses that Tocharian shares with Anatolian: ‘drink’, ‘give’, ‘die’ and ‘many’, all included in the Ringe, Warnow & Taylor corpus (2002: 99–100). It is worth noting that in that study the position of Tocharian as second is determined only by these four lexical characters—and the assumption of their archaicity seems to rely on the fact that Anatolian has been rooted as one of the first subnodes in their model.

The strongest of the four isoglosses suggesting an early Tocharian separation is the word for ‘drink’ (Ringe, Warnow & Taylor 2002; Weiss 2018: 373; Søbørg 2020: 6). While many Indo-European branches show a root **peh₃-* with this meaning, Tocharian and Anatolian reflect a root **h₁eg^{wh}-*: Ved. *píbatī*, Gk. *πίνω*, Arm. *əmpem*, Lat. *bibō*, OIr. *ibid*, *-ib*, OCS *pitъ* ‘drink’, but ^B*yok-*, ^A*yok-*, Hitt. *eku-^{zi}/aku-* ‘drink’. There is evidence for relics of **h₁eg^{wh}-* in some nominal forms: Gk. *νήφων* ‘sober’ and Lat. *ēbrius* ‘drunk’, *sōbrius* ‘sober’ (LIV 2001: 231, 462–3). In Hittite, the root **peh₃-* is found with an *s*-extension and the meaning ‘swallow; take a sip’: *pāš-ⁱ/paš-*. The evidence seems to point to several related innovations in CIE: the change of meaning in **peh₃-* from ‘swallow’ to ‘drink’, the replacement of **h₁eg^{wh}-* by **peh₃-*, and possibly the relegation of the former to the meaning ‘drink alcohol’; see Peyrot (2019b: 195).³⁵ The semantic development must be considered the weakest point of the chain, as the broad meaning ‘drink’ could easily have contained the specialised meaning ‘drink alcohol’.³⁶ If at a certain point, the basic word for ‘drink’ was replaced, the specialised

³⁴ This type of a semantic backmutation was in fact proposed by Adams (2013: 176) for ^B*kärweñe*.

³⁵ Peyrot (2019a: 190–5) also discusses, and cautiously rejects, the macro-comparison between PIE **h₁eg^{wh}-* and a Uralic verb for ‘drink’, a.o. Finnish *juo-*, North Saami *juhka-*, Hungarian *i(v)-* ‘drink’.

³⁶ This is for instance the case in Dan. *drikke*, Dutch *drinken*, and Eng. *drink*.

meaning could have been retained in the older verb; cf. Kuryłowicz' fourth law of analogy.

Malzahn's counterargument to this scenario is somewhat circumstantial. Due to the lengthened grade in Tocharian, ^Bo, ^Ao < PT *e with rounding < *ē, she reconstructs a Narten present and then structurally infers a root aorist, which typically should have punctual semantics 'swallow' rather than durative 'drink' (Malzahn 2016a: 287). However, as the famous root *g^{wh}en- 'strike, kill' shows, there is no guarantee that semantic Aktionsart necessarily correlates with the root aspectual stems (durativity with root presents, perfectivity with root aorists), so this argument does not hold.

Be that as it may, there is a problem with the isogloss *h₁eg^{wh}- ~ *peh₃-. The fact that *peh₃- appears in Hittite with an s-extension, *peh₃s-, means that we cannot be certain that the origin meaning of *peh₃- was 'swallow'. Recent studies have suggested that the root extension *-s- affects the meaning of the root (Cohen 2017; Lubotsky 2021). In roots referring to momentaneous actions when unextended, the addition of *-s- seems to result in aoristic verbs that have some extension in time: *ǵ^hei- 'give a poke' → *ǵ^hei-s- 'wound', *mer- 'disappear' → *mers- 'forget' (Lubotsky 2021: 234).³⁷ In inherently durative roots, the *-s- may have introduced telicity. Thus, rather than a semantic development from PIE 'swallow' to CIE 'drink', it may have been a (pre-)PIE derivation *peh₃- 'drink' → *peh₃s- 'take a sip' ⇒ 'swallow'; see Friis (2018: 56–8).³⁸ The supposed development of *peh₃- from 'swallow' to 'drink' is therefore not assured. Still, the agreement between Anatolian and Tocharian in showing the root *h₁eg^{wh}- for the meaning 'drink' could be an archaism. It is important to note, however, that the lack of evidence from Germanic where the meaning 'drink' is expressed with a different verb altogether, means that the 'drink'-isogloss cannot be used to place Tocharian in the second position in the family tree.

The situations surrounding ^Awäl- 'die' and ^Bay-, ^Ae- 'give' are similar to that of

³⁷ Whether or not the semantic relationship between the unextended aoristic roots and s-extended aoristic roots can also be classified as an addition of telicity—which Cohen (2017) is in favour of and Lubotsky (2021: 234) argues against—depends on whether one analyses momentaneous or punctual actions as inherently telic or atelic.

³⁸ Another consideration is that the word for 'eat', PIE *h₁ed-, is formally quite similar to *h₁eg^{wh}-, in root structure as well as stem formation. Since these two concepts belong to the same semantic sphere ('ingesting'), it is conceivable that phrases like 'eat and drink' would occur in Proto-Indo-European. In that case, *h₁eg^{wh}- may have been preferred over *peh₃-, even if the former had a slightly different meaning originally. This is, however, rather speculative as *h₁ed- is not attested in Tocharian, and since the Tocharian verbal root ^Byok-, ^Ayok- 'drink' seems to result from an originally reduplicated stem, probably a perfect (Peyrot 2013a: 449).

^B*yok*-, ^A*yok*- ‘drink’. ^A*wäl*- ‘die’ is a verb for a basic concept that seems to share a state with Anatolian, if cognate with HLuw. *wala*- ‘die’, CLuw. (*u*)*walant(i)*- ‘dead’ (Melchert 1994: 254). Many CIE languages, on the other hand, express the concept ‘die’ with a root **mer*-, cf. Skt. *ámṛta*, Gk. Hsch. *ἐμορτεν* *ἀπέθανεν*, Arm. *meṙaw*, OCS *u-mrěťz* ‘died’, Lat. *morior* ‘die’, which in Hittite means ‘disappear’: *mer*-^{zi}/*mar*- ‘disappear, vanish’. As an argument for the Indo-Anatolian hypothesis, the isogloss is compelling; ‘disappear’ ⇒ ‘die’ is far more likely than the opposite development, so the Hittite meaning must be archaic.

Whether ^A*wäl*- ‘die’ constitutes an archaism together with the Luwian words is another matter. The etymology of ^A*wäl*- is far from certain; it has often been connected to **uelh*₃-, Hitt. *walḫ*-^{zi} (Hackstein 1995: 301; Kloekhorst 2008: 945–6). The intransitive meaning could perhaps be accounted for by the use of middle voice, found in the present and subjunctive stems, e.g., *s*-prs.[8].mid.3sg. *wläštär* ‘dies’, *a*-sbj.[3].mid.3sg. *wlatär* ‘will die’. However, in that case, we might have expected an oppositional active verb with the meaning ‘kill’ to be attested in Tocharian A as well. The fact that we find an active *s*-preterite rather than a middle root preterite of class [o] is unexpected, e.g., *s*-prt.[3].act.3sg. *wläs*, since the verb forms a middle *a*-subjunctive of class [3]; see Chapter 4 for an in-depth treatment of the stem patterns that show semantic intransitive-transitive alternation. At the same time, the Luwian words could reflect other preforms, including roots in **g*^w- (Malzahn 2016a: 286). It may therefore rather belong with Germanic words like OE *cwelan* ‘to die’, OS *quelan* ‘to suffer’ from **g^wel(H)*-; see Kroonen (2013: 253) for further cognates. Thus, while a diachronic connection between ^A*wäl*- ‘die’ and HLuw. *wala*- ‘die’, etc. is attractive due to their semantics, it is too uncertain to carry weight on its own.

To express the meanings ‘give’ and ‘take’, Anatolian again seems to show an archaic state: the reflex of **deh*₃-, which means ‘give’ in the CIE languages, means ‘take’ in Hittite: *dā*-ⁱ/*d*- ‘take’, while the notion ‘give’ is expressed differently: *pai*-ⁱ/*pi*- ‘give, pay’ (Kloekhorst 2008: 614–6, 803–5). The vocalic element of the latter verb could be matched by ^B*ay*-, ^A*e*- ‘give’,³⁹ indicating a root **h₂el*- ‘give’ (Ringe, Warnow & Taylor 2002: 122).⁴⁰ Norbruin (2021: 243–50) has made a good case that ‘take’ is the original meaning of **deh*₃-, and that ‘give’ is a later innovation. Nonetheless, as an isogloss indicating early Tocharian separation, I do not think ^B*ay*-,

³⁹ Middle forms of the subjunctive and optative of ^B*ay*- are used as suppletive forms to the verb ^B*pār*- ‘carry, bring; take’ (Malzahn 2010: 707; Peyrot 2013a: 721 fn. 13).

⁴⁰ The etymology of the Hittite verb is not totally assured. Kloekhorst (2006) has proposed that we are rather dealing with a verbal root **h₁ep*-, also reflected in Alb. *ap*- and PGmc. **geb*-, rejecting the connection between the Hittite and Tocharian verbs.

^A*e-* ‘give’ is usable. First of all, it is possible that the root **deh₃-* is reflected in the irregular ipv.3sg. ^B*pete* ‘give!’ < **-do* < **-dh₃-o* (Adams 2013: 107),⁴¹ and secondly, the root **h₂ej-* is also found in Gk. αἵνυμαι ‘take’, with the same semantic development of the middle as in Tocharian: act. ‘give’ → mid. ‘give for oneself’ ⇒ ‘take’. This indicates that **h₂ej-* was present in the proto-language of both Greek and Tocharian in the meaning ‘give’; the isogloss thus cannot be used for the Tocharian Second hypothesis.

The final isogloss in the data of the Ringe group is the word for ‘many’, which reconstructs to **megh₂-* in Anatolian and Tocharian, but to **pélh₁u-/pólh₁u-/plh₁eu-* in Celtic, Germanic, Greek and Indo-Iranian: nom.-obl.sg.-pl. ^B*māka*, ^A*māk* ‘many, much, very’, Hitt. nom.-acc.sg. *mēk* ‘many’, but Skt. *purí-* ‘many’, Gk. πολύς ‘much, many, often’, OIr. *il*, Got. *filu* ‘many’. Reflexes of **megh₂-* usually mean ‘big’ in CIE languages. However, Ringe, Warnow & Taylor (2002: 99–100) do acknowledge that **megh₂* in the meaning ‘many, much’ is probably an innovation, especially in light of the Tocharian B adjective *moko* ‘old; elder’. The word is therefore non-probative and illustrates well that Anatolian too is capable of showing innovative states.

Among the proposed lexical innovations for the archaism of Tocharian, the better ones are **h₁eg^{wh}-* ~ **peh₃-* ‘drink’ and **uiH-ró-* ‘young/strong’ ~ ‘(strong) man, warrior’. While some of the others are consistent with the Tocharian Second hypothesis, they cannot be considered certain enough to count as foundational evidence.

1.3.2. Phonological isoglosses

Very few phonological isoglosses have been proposed for Tocharian, no doubt because of the loss of distinctions resulting from the reduction of the stop system in Tocharian. Two isoglosses concerning laryngeals have been proposed, namely preservation of consonantal reflexes and metathesis of clusters of laryngeals and glides, but, as Peyrot (2022b: 92–3) argues, neither can be maintained.⁴²

A potential innovation was proposed by Ringe (2010), namely the treatment of the thorn-clusters in Indo-European. In some Indo-European branches, there is

⁴¹ Pace Adams (2013: 107), the unconditioned word-final outcome of **-ō* (< **-oH*) is not **-e*, but **-u*; see Hackstein (2017: 1314), Del Tomba (2023: 149 fn. 167). A preform **-deh₃* is therefore not possible for ^B*pete*.

⁴² An isogloss showing affinity between Tocharian and the CIE languages has recently been shown by Del Tomba (2020a [2021]), namely that Tocharian takes part in the metathesis to **-ur* > **-ru* which seems to be a post-Anatolian innovation of Indo-European; see Lubotsky (1994a).

evidence that original clusters of the shape **TK* was metathesised to **KT* (Schindler 1977): e.g., Ved. nom.sg. *kṣās*, Gk. *χθών* ‘earth’ < PIE **dʰǵʰ-em-*.⁴³ No such metathesis is present in Anatolian, e.g., Hitt. nom.sg. *tēkan* ‘earth’, loc.sg. *tagān*, HLuw. loc.sg. *ta-ka-mi-i* ‘on the earth’, nor in Tocharian: *^Bkeṃ*, *^Atkam* ‘earth’. Due to the discrepancy in initial vocalism between Tocharian A and Tocharian B, Ringe (2010: 335) argues that *^Bkeṃ*, *^Atkam* cannot reflect PT **tək-* as that sequence would be expected to be retained in Tocharian B; cf. *^Btkācer* ‘daughter’ < PT **təkacér*. According to him, it must therefore reflect a true initial cluster. This reasoning cannot be maintained, since the expected Tocharian B form with the dental intact, perl.sg. *tkentsa* (THT1859 b2), perl.sg.-emph. *tkentsa-k* (THT1859 b6) has come to light (Adams 2013: 205; Pinault 2013: 25; Huard 2020: 20–3, 75; Peyrot 2020: 187–8).⁴⁴ Be that as it may, we are still left with an original PIE zero-grade as the only option, since an *e*-grade in the root would result in a palatalised initial: **dʰéǵʰ-* > PT **tʰək-* > *^Bck-*, *^Ack-*. However, on the CIE side, it is not possible to establish a shared phonological innovation. There is positive evidence from Indic and Greek, as well as from Celtic: Cisalpine Celtic *Teuo-χTonion* ‘to gods and humans’ < **gdonjo-* < **dʰǵʰom-jo-* ‘of the earth’ (Kloekhorst 2016: 50). In the other CIE branches, there is no positive evidence for metathesis, only simplification of the cluster **TK* > **K*; see the discussion by Kloekhorst (2016: 46–51).

1.3.3. Morphological isoglosses

As discussed in 1.2.1, morphological isoglosses tend to be more complex than lexical and phonological ones. The discussion of the isoglosses in this section can therefore not be comprehensive, but is intended to give an overview of the status quo.

Due to the collapse and subsequent construction of the Tocharian case system, a significant part of the inherited material from nominal morphology has been lost to us. There is still important information retrievable from the stem formation and gender system, as recently shown by Del Tomba (2023), but overall, the nominal system holds less promise than the verbal system (Pinault 2013: 22). First of all, there are some suggested isoglosses that rely on the existence of a morpheme in the CIE languages and its absence in Tocharian, e.g., comparative and superlative forms, certain case forms, and the derivational suffix **-ti-* proposed by Søborg (2020: 6). As the Tocharian only shows a state of absence, these cannot be used as foundational

⁴³ The zero-grade can be explained from the locative, which would have been a frequent case in this particular word (Ringe 2010: 332–3).

⁴⁴ A third instance should be restored in THT1859 b1, according to Pinault *apud* Huard (2020: 37).

evidence for the Tocharian Second hypothesis.

The opposite situation seems to be the case with the interrogative *in* ^{*}*mo-*, which is found only in Anatolian and Tocharian, e.g., ^B*mant* ‘so’, ^A*mānt* ‘how’, ^B*mäksu* ‘which’, Hitt. *maši-* ‘how many’, *mān* ‘when’, Pal. *maš* ‘as much as’ (Hackstein 2004a; Peyrot 2018b; 2019a: 195–9). In no other Indo-European language has this stem been identified so far; instead, the widespread stems ^{*}*k^wi-*/^{*}*k^we-* and ^{*}*k^wo-* are found. It is possible that the Anatolian and Tocharian situation is original, and as Peyrot (2018b: 86) points out, assuming independent loss of an entire grammatical category is not as trivial as other types of loss. However, the isogloss is muddled by the existence of Celtic conjunctions such as OIr. *má* ‘if’, Bret. *ma* ‘where, if, that’, which could well go back to the same stem (Dunkel 2014: 518–9; Peyrot 2018b: 86–7). Although the pronoun would have been bleached in Celtic, the mere presence of the stem would disprove the shared loss in the CIE languages; for this reason, the *m*-interrogative is too uncertain to be used as an argument for subgrouping.

Several scholars have proposed that Tocharian shows an intermediate stage in the development of feminine gender in Indo-European. Kim (2009a; 2014) proposes that the marking of feminine agreement on adjectives in CIE languages, which shows a distribution between ^{*}*ih₂* in athematic stems and ^{*}*eh₂* in thematic, was a post-Tocharian innovation, since thematic adjectives inflect with ^{*}*ih₂* in the feminine in that branch, e.g., f.nom.sg. ^B*rtarya* ‘red’ < ^{*}*ratarya* as if from ^{*}*h₁rud^hrih₂* (m. ^{*}*-ro-*); similarly, Kortlandt (2017; 2020). Hackstein (2012) suggests that Tocharian shows non-feminine relics of ^{*}*ih₂* and ^{*}(*e*)*h₂* in agent nouns in ^B*-ntsa*, ^B*-ñca* and ^B*-nta*; this suggestion is treated in Chapter 5. However, through a critical assessment of these theories and the Tocharian data, Del Tomba (2023: 323–46) has made a strong case that the Tocharian gender system derives from the traditional tripart gender system reflected in the CIE languages with secondary encroachment of ^{*}*ih₂* into the thematic inflection; see also Pinault (2008: 516–9), Fellner (2014a).

The Tocharian A ablative singular ending *-š* was highlighted by Hackstein (2005: 171–2) as a potential archaism shared with Anatolian. In Anatolian, the ablative ending can be reconstructed as ^{*}*-ti* on the basis of Hitt. abl.sg.-pl. *-z*, Luw. abl.-inst.sg. *-ti*, Lyc. *-di* (Oettinger 2017: 257), while other branches preserve this ending in the thematic nouns and show a reflex of ^{*}*-d* or ^{*}*-t*: Ved. *-āt*, Av. *-āṭ*, OLat. *-ōd*; see also Hackstein (2004b: 94–5). The suggestion that the longer ablative ending is reflected in Tocharian was presented independently by Jasanoff (1987a: 109–10) and Klingenschmitt (1987: 188 fn. 64); it hinges on the sound law PIE ^{*}*-Ti* > PT ^{*}*-š* / *-#*. Possible examples are the irregular imperative act.2sg. ^B*paš*, ^A*piš* ‘go!’, if from ^{*}*p-yəš* < ^{*}*h₁i-d^hi*, and the TA prs.act.3sg. ending *-š*, if from ^{*}*-ti* (Jasanoff 1987a: 106–8, 110–1).

The latter parallel is less certain as the ending, which is not found in Tocharian B, could be from the secondary ending $*-d < *-t$ with progressive palatalisation (Pinault 2008: 620) or from an altogether different source (Peyrot 2013a: 413). If Pinault's suggestion is correct, we could take Tocharian A ablative from the shorter variant of the Indo-European suffix $*-d$, but these two instances would be the only examples of this proposed sound law. In light of the third instance of $*-Ti > PT *-ṣ / _ \#$ in the irregular imperative which is difficult to explain as an inner-Tocharian creation, we may cautiously accept this sound law. This means that the Tocharian and Anatolian ablative ending probably constitutes an isogloss. Whether we can use this isogloss for in a cladistic argument is another matter. First of all, the $*-ti$ state may be found in the Armenian ablative singular endings: $-oy$, $-\bar{e}$, cf. prs.3sg. *berē* 'carries' $< *b^héreti$ (Jasanoff 1987a: 109). In addition, it is not clear which state is more archaic. Hackstein (2005: 172) suggests apocope in the CIE languages, but the details of such a change are unclear, considering the preservation of final $*-i$ in the primary verbal endings, in the adverb $*próti$ 'to, against', cf. Skt. *práti*,⁴⁵ Gk. *πρός, πρότι*, and the conjunction $*h_1éti$ 'still, also', cf. Skt. *áti*, Av. *aiti*, Gk. *ἔτι*, Lat. *et*. Furthermore, the addition of a deictic $*-i$ on top of the ablative ending is conceivable.

There is one verbal isogloss in particular that deserves treatment, but is left out of consideration in this thesis. The formation of the primary endings of the middle is one of the most famous morphological isoglosses in Indo-European. In Anatolian, Italo-Celtic, and Tocharian, the primary middle endings are distinguished from the secondary ones with a morpheme $*-r$, while in Indo-Iranian, Greek and Germanic, they employ a morpheme $*-i$. It is argued that $*-r$ is older than $*-i$ because the latter is also found in the primary endings of the active, e.g., PE act.3sg. $*-ti$, SE act.3sg. $*-t$. Primary middle endings like 3sg. $*-toi$ are therefore analysable as mid. $*-to$ + primary $*-i$, as opposed to the r -endings which are more obscure (Ringe 1991: 98–9; Ringe, Warnow & Taylor 2002: 117)

Nevertheless, there are several problems with using this isogloss for cladistics. Both synchronically and diachronically, there are issues on the Tocharian side: the distribution of endings with $*-r$ and without is not entirely clear-cut and it is difficult to derive the Proto-Tocharian 3rd person endings, $*-tar$, $*-ntar$ directly from $*-tor$, $*-ntor$ (Peyrot 2022b: 94–5).⁴⁶ There is also the fact that a $*-i$ appears in the preterite middle in Tocharian: 1sg. ^B*-may*, ^A*-e*, *-we*, 2sg. ^B*-tay*, ^A*te*. The Tocharian situation seems

⁴⁵ The missing effect of Brugmann's law indicates $*e$ -grade in the first syllable (Beekes 2010: 1238).

⁴⁶ See Pinault (2010c) for a suggestion of the development of these endings.

to be mirrored in the Phrygian middle endings: primary them.3sg. *-e-tor*, secondary athem.3sg. *-toi*, them. *-e-toi* (Šorgo fthc.: 312). Since it is highly likely that Phrygian forms a subnode with Greek, a branch which employs *i*-endings in the primary middle, it casts the significance of the isogloss into doubt (van Beek 2022: 191–3). It is also worth noting that we find variants extended by an **-i* in both the present and the preterite of the Hittite middle: prs.3sg. *-a*, *-ari*, *-ta*, *-tari*, prt.3sg. *-at*, *-ati*, *-tat*, *-tati* (Hoffner & Melchert 2008: 184). Finally, although **-toḷ* is synchronically more transparent than **-tor*, the latter is well-marked for its function, so the replacement of **-r* by **-i* lacks motivation (Peyrot 2022b: 94–5). It is thus safe to say that the circumstances of the **-r* ~ **-i* isogloss are far from settled, and as it stands, it is too uncertain to support cladistic claims; see also Pinault (2013: 35–6). The question deserves a thorough investigation into the middle of all Indo-European languages, which reaches beyond the time and space constraints of this dissertation.

To summarise the last three subsections (1.3.1–1.3.3), there is two good lexical isoglosses, namely the semantic isogloss **h₁eg^{wh}-* ~ **peh₃-* ‘drink’ and the reanalysis of **uīHró-* from an adjective to a noun. None of the proposed phonological and morphological isoglosses discussed so far have been probative, leaving aside the question of the middle endings as unsolved. These results highlight the importance of an investigation into the verbal domain. In the following section, I present the verbal isoglosses that are treated in this thesis as well as the structure in which they are presented.

1.4. Verbal isoglosses treated in this thesis

As the discussion of proposed isoglosses has shown in 1.3, the question of the position of Tocharian requires us to dive into the verbal domain. This thesis consists of five studies of various parts of the Tocharian verbal system, interconnected with each other in different ways. The dissertation has two general aims, applicable to each study (Chapters 2–6):

- Aim 1) To test alleged verbal isoglosses which could substantiate the hypothesis that Tocharian separated from the family tree as the second branch.
- Aim 2) To understand how the grammatical features related to the isogloss developed from PIE to Tocharian

The objective is to clearly distinguish between features in Tocharian that are

demonstrably more archaic than comparable features in CIE and features that are merely distributed in a way consistent with the Tocharian Second hypothesis. The former can be used as foundational evidence for the high position of Tocharian in the family tree, while the latter cannot. From the resulting discussion, the secondary aim is to gain insight into the internal history and development of the Tocharian verbal system.

The first study concerns the proposal with the most potency if proven correct, namely the hypothesis of the presigmatic aorist in PIE (Jasanoff 2003: 174–214; 2019b). This proposal has far-reaching implications for our understanding of the development of the Tocharian verbal system. In a phylogenetic perspective, the hypothesis can be viewed through two different lenses. The first is the status of the Tocharian *s*-preterite and its relationship with the Hittite *hi*-conjugation preterite on the one hand and the CIE sigmatic aorist on the other. Essentially, the presigmatic aorist theory proposes that the *s*-preterite reflects the same archaic state as the *hi*-preterite, and that the *s*-aorist is an innovative state in comparison. An opposing view takes the opposite stand, positing a close relationship between the *s*-preterite and the *s*-aorist, while separating ties with the *hi*-preterite (Ringe 1990; Kortlandt 1994; Kortlandt 2015a: 51–3). The first study, Chapter 2, concerns this dispute. The question related to aim 1) is whether the formal and functional arguments for reconstructing a precursor of the Indo-European *s*-aorist on the basis of Hittite and Tocharian are strong enough. I compare various arguments for this theory (the presigmatic aorist theory) with arguments from alternative theories with a focus on the active paradigm. From this comparison, I move on to aim 2), which results in a discussion of the fate of the aorist in Tocharian; this consists of a section on possible *s*-aorist relics (2.5) and an excursus on the root aorist in Tocharian (2.6).

The other way in which the presigmatic aorist theory is relevant for the position of Tocharian is in its treatment of a small group of Tocharian verbs that behave in a highly specific way (e.g., ^B*nək*-, ^A*nāk*- ‘perish, disappear; destroy’, verb ^B*pək*-, ^A*päk*- ‘cook, ripen (itr./tr.)’). They show a semantic alternation between inchoative and causative semantics which is expressed partly through voice and partly through stem formation. To express the causative meaning, they employ root subjunctives (class [1]) and *s*-preterites (class [3]), but to express the inchoative meaning, they use subjunctives with a PT suffix **-e-* (class [3]) and root preterites with the PT root vowel **-e-* (Tocharian A class [o]), both of which are not found in verbs outside this small group. An additional oddity is that there is no stem alternation in the present stem for most of the verbs in question; rather the semantic difference is expressed solely through voice. According to Jasanoff, this stem pattern is a subtype of the presigmatic

aorist inherited from Proto-Indo-European; it may therefore constitute an archaism compared with the CIE cognates of the verbs that belong to the group. Additionally, the tendency to express inchoative-causative semantic alternation has been taken as a feature of Proto-Indo-European, preserved in Tocharian (Malzahn 2010: 56–7). In the first part of Chapter 4 (4.2–4.4), I discuss the possible origins of the *e*-subj.[3],⁴⁷ the root prt.[o] and the stem pattern in general to see whether it indeed must continue a PIE archaism.

In Chapter 3, the isogloss in question is the apparent scarcity of inherited simple thematic presents (the type **CéC-e/o-*) in Tocharian. It has been argued that Tocharian only continues three simple thematic presents reconstructible for Proto-Indo-European, **b^hér-e/o-*, **h₂ég-e/o-*, and **g^wih₃u-e/o-*, and that the majority of Indo-European simple thematic presents only developed after the separation of Tocharian (Adams 1978; Jasanoff 1998; Ringe 2000). Since there is positive evidence that Tocharian did inherit the simple thematic present as a category, we know that the formation as a whole cannot be a post-Tocharian innovation. In order for this isogloss to be probative for the position of Tocharian, it must be proven that the CIE languages innovated on a word-for-word basis. In Chapter 3, I compare **e/o*-presents reconstructible for a CIE stage with their cognate stem in Tocharian (3.3–3.7) in answer to aim 1). Some verbs in the data set show a rare correlation between voice and semantics (inchoative-causative alternation) in their present stem; these verbs belong to the group that form *e*-subjunctives of class [3] and root preterites of class [o], many of which show simple thematic presents among the CIE comparanda.

In his treatment of the scarcity of simple thematic presents, Jasanoff (1998) proposes a specific mechanism for the creation of simple thematic presents in CIE, namely that they were former asigmatic subjunctives to the presigmatic aorist. In Tocharian, he proposes that this stem was preserved as a subjunctive, while a newer sigmatic subjunctive was reanalysed as a present. This proposal predicts a stem pattern in Tocharian with a sigmatic present, a simple thematic subjunctive and an *s*-preterite, a pattern which is attested to some verbs. I investigate this proposal in Chapter 4 (section 4.5). The reason why this investigation is placed together with the investigation of the verbs with *e*-subj.[3] and root prt.[o] is that it also relates to semantic alternation between inchoatives and causatives and concerns many of the same stems. One can say that the overarching topic of Chapter 4 is the use of intransitive and *s*-transitive stem patterns and the possible archaisms that they may

⁴⁷ The term *e*-subjunctive is used as a short-hand for the stem class with the non-alternating suffix ^B-*e*-, ^A-*a*- < PT **-e*-, e.g., *e*-subj.[3].3sg. ^B*nketär*, ^A*nkatär* ‘will perish’.

contain. In this chapter, aim 1) and 2) are thus addressed together, as the status of the isoglosses in question cannot be untied from the theories of their development in Tocharian.

Chapter 5 is an investigation into the fate of the PIE **nt*-participle in Tocharian. In Tocharian, the **nt*-participle seems to be continued in certain agent noun suffixes, e.g., ^B-*ñca*, ^B-*nta*, ^B-*ntsa* and ^A-*nt* (NC-forms, for short), but they are missing some of their participial features, a.o. gendered inflection. In addition, the participle with the reconstructed suffix **-mh₁nó-*, which usually has middle reference in CIE, is found in Tocharian without any clear affinity with middle voice (Pinault 2012a; Peyrot 2017). Comparing the Tocharian situation with Anatolian where **-nt-* is subject/patient-oriented and CIE where **-nt-* is affiliated with the active and **-mh₁nó-* with the middle, it is possible that Tocharian inherited these two participial suffixes before they were linked with active and middle voice respectively. In order to test that possibility (aim 1), I look at the NC-forms and *m*-participles attested to verbs that show a semantic difference between active and middle voice (5.3). In 5.4, a new proposal for the development of the NC-forms is presented (aim 2).

The final isogloss treated in this thesis is the problem of the thematic optative in Tocharian (Chapter 6). In several CIE languages that preserve the optative, the formant **-oih₁-* is used with thematic stems. In Tocharian, however, the thematic subjunctive stems, to which the optative is formed, the suffix **-(^h)əy-* seems to reflect the athematic **-ih₁-* which could be an archaism (Ringe 1998: 35–6; Jasanoff 2009; Weiss 2022: 109). To address both aim 1) and 2), I test the possible roads of development of the optative suffix in Tocharian to see if an archaism can truly be proven using internal as well as forward reconstruction. The diachronic discussion moves beyond the confines of the thematic optative in section 6.5.6, where I discuss the discrepancy between the optative suffix to *a*-final roots: TB *-oy-* and TA *-äy-*.

Many of the isoglosses treated in this thesis are intricately linked and the discussion of them can therefore not be fully disentangled, especially in Chapter 2, Chapter 3, and Chapter 4. See Table 1.1 for an overview of the isoglosses. Considering the scarcity of reliable cladistic evidence elsewhere in Tocharian grammar and lexicon, the results of the studies below are vital. If one or more results are positive, they could lend serious credence to the Tocharian Second hypothesis. If, however, the results are negative, the standard view of Tocharian as the second branch balances on a very narrow foundation and ought to be taken up for reconsideration.

Table 1.1: Overview of the verbal isoglosses treated

The partially sigmatic paradigm of the Tocharian <i>s</i> -preterite and the Hittite <i>hi</i> -conjugation preterite compared with the CIE <i>s</i> -aorist.	Chapter 2
The scarcity of inherited simple thematic presents compared with none in Anatolian and many in CIE.	Chapter 3
The use of voice as a marker of inchoative-causative alternation in the present stem in certain verbs, and the origin of the stem pattern with an inchoative middle <i>e</i> -subj.[3] and root prt.[o] next to a functionally causative active root subj.[1] and <i>s</i> -prt.[3] found in these verbs.	Chapter 3, Chapter 4
The pattern of <i>s</i> -preterites with simple thematic subjunctives and sigmatic presents in Tocharian compared with CIE verbs with <i>s</i> -aorists with sigmatic subjunctives and simple thematic presents.	Chapter 4
The lack of voice affinity in the reflexes of the <i>*nt</i> - and <i>*mh₁nó</i> - participles in Tocharian.	Chapter 5
The optative suffix in Tocharian reflecting <i>*-ih₁</i> - compared with the CIE reflex <i>*-oih₁</i> -.	Chapter 6

1.5. The Tocharian verb

For an Indo-Europeanist, the Tocharian verbal system holds both intrigue and promise. It has the basic categories that we expect from an older Indo-European language—number, person, tense, mood, aspect, voice—which are expressed with familiar marking strategies such as suffixation, reduplication and ablaut, but it is as if everything has been configured slightly differently. The verbal system contains many recognisable Indo-European elements, but they sometimes appear in unexpected places or function in an unfamiliar manner. A good example of this was mentioned in 1.3.3, namely the preterite middle endings, e.g., 1sg. ^B-*may*, ^A-*e*, -*we*, 2sg. ^B-*tay*, ^A-*te*. These contain an element **-i* which from a classical Indo-European viewpoint belong in the domain of the present tense. Another example is the optative; it is clearly related to the optative found in other Indo-European branches, but whereas the Indo-European optative can be formed directly on the aspectual stems, the Tocharian optative is formed on the subjunctive stem only; see Chapter 6.

Because of the long time gap between the reconstructed proto-language and the attested Tocharian languages, the path between the two has been obscured.

The work to illuminate the Tocharian verbal system from an Indo-European point of view has been ongoing since the discovery of the Tocharian branch. But it should also be emphasised that it deserves to be studied in its own right for its contributions to our understanding of synchronic and diachronic Tocharian, and by extension our understanding of the Tocharian texts, their context, Silk Road studies and the linguistic typology of Central Asia. In any event, a proper comparative analysis in an Indo-European perspective is not possible without close attention to the synchrony, philology and internal comparison of the Tocharian languages (Winter 1994a: 284–5).

This is not the place for a lengthy introduction of the Tocharian verbal system. It has been treated extensively in handbooks, monographs, and in countless articles since the beginning of Tocharian linguistics; see a.o. Sieg, Siegling & Schulze (1931: 323–484), Krause (1952), Lane (1959), Krause & Thomas (1960: 173–270), Schmidt (1974), Van Windekens (1982), Adams (1988: 49–105), Pinault (1989a: 123–62; 2008: 569–643), Hackstein (1995), Malzahn (2010), and Peyrot (2013a). Together, these cover most of the features, interpretations, problems, and debates of the Tocharian verb, both synchronically and diachronically. In recent years, the philological side of Tocharian studies has taken a massive stride forward with the digitalisation of the editions of Tocharian texts through the CEToM project⁴⁸ at Universität Wien as well as the digitally available photos of manuscripts from TITUS⁴⁹, Gallica⁵⁰ and IDP.⁵¹

In this dissertation, Tocharian stem formation is very much in focus. Like the classical Indo-European verb, the Tocharian verb is polythematic, meaning that each verb forms several stems to express the verbal categories. But whereas the primary function of the stem alternation in Proto-Indo-European is to denote aspectual differences (imperfective, perfective, stative-resultative), the stems of the Tocharian verb denote primarily tense and mood (present, preterite, subjunctive, imperative). Several verbs can be formed to a single root, meaning that we find alternations between stems that are derived often expressing changes in valency or semantics. For instance, the PT root **kars-* ‘know’ (< **kers-* ‘cut off’),⁵² forms a transitive verb with

⁴⁸ *A Comprehensive Edition of Tocharian manuscripts*, <https://cetom.univie.ac.at>.

⁴⁹ *Thesaurus Indogermanischer Text- und Sprachmaterialien*, <https://titus.fkidg1.uni-frankfurt.de/texte/tocharic>.

⁵⁰ *Gallica* (Pelliot Koutchéen D.A), <https://gallica.bnf.fr/>.

⁵¹ *The International Dunhuang Project: The Silk Road Online*, <http://idp.bl.uk/>.

⁵² Compare Hitt. *karš-zi* ‘cut off, separate’ (LIV 2001: 355).

a nasal present and a subjunctive and preterite in *-a-*, e.g., prs.act.3sg. ^B*kärsnaṃ*, ^A*kärsnāṣ* ‘knows’, and a causative verb with sigmatic present-subjunctive and a reduplicated preterite, e.g., *sk*-prs.-sbj.[9]. act.3sg. ^B*śarsäṣṣām*, *s*-prs.-sbj.[8] act.2sg. ^A*śarsäšt* ‘make know(n)’; for my use of the terms ‘root’ and ‘verb’, see below in 1.5.1.

One of the main challenges in understanding the relationship between the two systems is the phonological changes to Tocharian vowel system. All PIE ablaut grades with significance to the finite verb were affected by this:

PIE <i>*e</i> > PT <i>*ə</i>	PIE <i>*ē</i> > PT <i>*’e</i>
PIE <i>*Ø</i> > PT <i>*ə</i> ⁵³	PIE <i>*o</i> > PT <i>*e</i>
(Hackstein 2017: 1310–1, 1313)	

In the resulting ablaut scheme, palatalisation therefore became a relevant morphological marker. In early treatments of the Tocharian verb, this was often used to back-project individual stems back to PIE without the necessary attention to the context, pattern, or function of the stem; in Jasanoff’s words:

“Within Tocharian grammar, this approach is particularly ill-suited to the verbal system, where inherited ablaut and palatalisation patterns were systematically altered in the course of morphological restructuring”
(Jasanoff 2019b: 55)

In Tocharian, palatalisation is a morphological, not phonological, feature and should be treated as such in the diachronic analysis (Winter 1980a; Peyrot 2013a: 69–87). The tense-mood stems do not exist separately from each other, but are configured together in patterns. Even the most irregular patterns have undergone some restructuring; see, e.g., the treatment of the complex pattern of ^B*kəm-*, ^A*k’wäm-* ‘come’ < PIE **g^wem-* ‘come’ (Peyrot 2013a: 422–9). These patterns are fundamental to the structure of the verbal system, and any exploration of the prehistory of a Tocharian verbal category must start with a careful charting of the patterns in which it takes part.

I would like to emphasise function and semantics as an important driver in the reconfiguration of the Tocharian verb. Especially functions related to valency are very important in Tocharian compared to other Indo-European languages. In Proto-Indo-European, we can reconstruct at least one valency-increasing stem, the

⁵³ Zero-grades generally developed a PT **ə* as PIE **i* and **u* became **’ə* and **ə*, mostly with restitution to **əy* and **əw* in verbal roots, **R* became **əR*, and a schwa secundum developed between stops (Hackstein 2017: 1309–10, 1312, 1319).

causative-iterative *CoC-*eje/o-* (LIV type 4, 2001: 22–3). There are several strategies for increasing or decreasing transitivity affecting all stems of a stem pattern in Tocharian (Malzahn 2010: 50–99). To fully understand the development and origin of the Tocharian verb, it is thus not enough to consider formal features alone; the morphological context as well as meaning and function must be taken into account.

1.5.1. Overview of Tocharian verbal stems

In this subsection, I present a very brief overview of the stem classes and how I indicate them. As just described, the Tocharian verb is based on the primary stems, from which all forms are built. These are: the present, the subjunctive, the preterite, the preterite participle and the imperative. Each category contains several stem classes expressed with a variety of morphological markers: suffixation, infixation, prefixation, alternations in ablaut and accent, palatalisation, reduplication and gemination.

Especially the present, subjunctive and preterite play an important role in the studies of this dissertation, as they contain a lot of inherited material from the finite Indo-European verb. I have omitted the imperative stems in this overview, as they play only a miniscule part in the upcoming discussions; for their constitution, see Malzahn (2010: 496–515). Stem classes tend to pattern together, some more strongly than others; see Peyrot (2013a: 138–41, 164–9). I follow Peyrot in calling the collection of stems that one verb has a ‘stem pattern’, rather than an *Averbo* or a paradigm.⁵⁴

In this dissertation, a verbal stem is indicated by a description, a number or both. I use the stem class numbers from the classification system of Krause & Thomas (1960). To describe stems that are common to both Tocharian A and B or stems found in Proto-Tocharian, I generally use the descriptions of the Tocharian B stems, since they provide better clarity than those of Tocharian A; for instance, the present classes [3] and [4] are characterised by the suffixes *-e-* and *-o-*, respectively, in Tocharian B, while both classes show the suffix *-a-* in Tocharian A.

A stem class number is always given between square brackets: []. When discussing stem patterns, I sometimes use the following short hand:

⁵⁴ I reserve paradigm for the inflectional pattern within a single stem, e.g., “the paradigm of the present”, “the paradigm of the optative”, “the paradigm of the imperfect” etc.

[prs. – subj. – prt.]
 e.g., [8 – 2 – 3]
 [6 – 5 – 1]

In Table 1.2, Table 1.3, and Table 1.4, the stem classes of the subjunctive, present, and preterite are given. These are idealised, and some contain subcategories that are not indicated. The comprehensive treatment of the verbal system by Malzahn (2010) and the thorough investigation of the Tocharian subjunctive by Peyrot (2013a) both contain systematic overviews of the stem classes, uses and attestations of the verbs. I refer to these publications for details on the individual stem classes.

On a final note, I use the designation “preterite [o]”, coined by Malzahn (2010: 111), to refer to the Tocharian A preterite stem with *a*-grade in the root, no suffix and middle inflection, e.g., 3sg. ^A*nakät* ‘perished’. This term is not ubiquitous in the scholarship; see e.g., Peyrot (2013a: 141) who designates it “√-prt.[3]” (root preterite [3]). However, the *nakät*-type preterite is morphologically distinct from both the *ā*-prt.[1] and the *s*-prt.[3] in synchronic Tocharian A due the absence of both *-ā*- and *-sā*- in its stem. This should be reflected in the terminology. Although it is unusual to use o as a stem class number, I prefer to use a term already found in the literature rather than coin a new one.

Table 1.2: Subjunctive stem classes

Tocharian B			Tocharian A		
descript.	class	suffix	descript.	class	suffix
root subj.	[1]	-Ø-	root subj.	[1]	-Ø-
ʾə/e-subj.	[2]	-ʾə/e-	ʾä/a-subj.	[2]	-ʾä/a-
e-subj.	[3]	-e-	a-subj.	[3]	-a-
ʾəyə/e-subj.	[4]	-ʾəy-ə/e-	—		
a-subj.	[5]	-a-	ā-subj.	[5]	-ā-
na-subj.	[6]	-na-	nā-subj.	[6]	-nā-
—			ñ-subj.	[7]	-ñä/a-
sk-subj.	[9]	-ššə/ske-	s-subj.	[9]	-šä/sa-
ñ-subj.	[12]	-ññə/e-	äyñ-subj.	[12]	-äy-ññä/a-

Table 1.3: Present stem classes

Tocharian B			Tocharian A		
descript.	class	suffix	descript.	class	suffix
root prs.	[1]	-Ø-	root prs.	[1]	-Ø-
'ə/e-prs.	[2]	-'ə/e-	'ä/a-prs.	[2]	-'ä/a-
e-prs.	[3]	-e-	a-prs.	[3]	-a-
o-prs.	[4]	-o-	a-prs.	[4]	-a-
a-prs.	[5]	-a-	ā-prs.	[5]	-ā-
na-prs.	[6]	-na-	nā-prs.	[6]	-nā-
infix prs.	[7]	INFIX -n-	infix prs.	[7]	INFIX -n-
s-prs.	[8]	-šə/se-	s-prs.	[8]	-šä/sa-
sk-prs.	[9]	-ššə/ske-	—		
nəsk-prs.	[10]	-nə-ššə/ske-	näs-prs.	[10]	-nä-šä/sa-
—			säys-prs.	[11]	-säy-šä/sa-
ñ-prs.	[12]	-ññə/e-	ñ-prs.	[12]	-ññä/a-

Table 1.4: Preterite stem classes

Tocharian B			Tocharian A		
descript.	class	suffix	descript.	class	suffix
—			root prt.	[0]	-Ø-
a-prt.	[1]	-a-	ā-prt.	[1]	-ā-
caus. prt.	[2]	+PAL -a-	caus. prt.	[2]	+RED. -ā-
s-prt.	[3]	-Ø/sa-	s-prt.	[3]	-Ø/sā-
caus. prt.	[4]	-'a-	caus. prt.	[4]	-'ā-
them. prt.	[6]	-'ə/e- +PRS. END.	them. prt.	[6]	-'ä/a-

Chapter 2 The origin of the *s*-preterite

2.1. The Tocharian *s*-preterite

The *s*-preterite, class [3] in the Krause & Thomas classification (1960: 247–50), is the second most common preterite formation in Tocharian.⁵⁵ It is named after the suffix **-sa-*, found in the active 3sg. and the entire middle paradigm, but lacking in the rest of the active and in the associated preterite participle. This peculiar distribution has been the subject of debate since the early days of Tocharian scholarship, and since Pedersen (1941: 188), it has been compared by some scholars to the Hittite *hi*-conjugation preterite, which likewise has an unexplained sigmatic 3sg.; see e.g., Lane (1959: 161), Schmidt (1992: 109). From 1988 onwards, J. Jasanoff has been the leading proponent of the hypothesis that the Hittite *hi*-preterite and Tocharian *s*-preterite go back to the same paradigm, a **h₂e*-conjugation aorist with **o/e*-ablaut, in which the 3sg. has been supplanted by an *ē*-grade sigmatic form (Jasanoff 1988a; 2003: 174–214; 2012; 2019b). This paradigm, which Jasanoff dubs “the presigmatic aorist”, shows the same distribution of sigmatic forms as Tocharian. He proposes that it was fully

⁵⁵ An exact count is difficult, since some forms are contested, some are only inferred from their preterite participle and some are expected due to their stem pattern. According to the verbal index in Peyrot (2013a: 719–847), the *s*-prt.[3] is found in 23 roots in both Tocharian A and Tocharian B, 32 roots just in Tocharian B, and 21 just in Tocharian A, leaving a total of 76 roots in the whole Tocharian corpus; in addition, there are 4 *s*-imperfects attested in Tocharian A. These numbers differ somewhat from the count made by Malzahn (2010: 190), who includes stems inferred from their preterite participle: 35 roots have an *s*-prt.[3] in both Tocharian A and Tocharian B, 38 have an *s*-prt.[3] just in Tocharian B, and 24 just in Tocharian A, adding up to 97 roots.

sigmatised later in the proto-language, becoming the sigmatic aorist as we know it from Brugmannian grammar. If this theory can be substantiated, it would constitute a significant innovation and be a strong piece of evidence for the Tocharian Second hypothesis (Jasanoff 2019b: 15).

Table 2.1: Example paradigm of s-prt.[3]: ^B*prək-*, ^A*präk-* ‘ask’

	TB act.	TB mid.	TA act.	TA mid.
1sg.	<i>prekwa</i> , ^α <i>-uwa</i>	<i>parksama</i> ^α	<i>prakwā</i> , <i>-u</i>	<i>präkse</i> ^α
2sg.	<i>prekasta</i> ^α	<i>parksata</i> ^α	<i>prakāšt</i> ^α	<i>präksäte</i> ^α
3sg.	<i>preksa</i>	<i>parksate</i> ^α	<i>prakäs</i>	<i>präksāt</i> , <i>pärksāt</i>
1pl.	<i>prekam</i> ^α	<i>parksamte</i> ^α	<i>prakmäs</i> ^α	<i>präksāmāt</i> ^α
2pl.	<i>prekas</i> , ^α <i>-so</i>	(<i>parksat</i> ^α)	(<i>prakäs</i> ^α)	<i>präksāc</i> ^α
3pl.	<i>prekar</i>	<i>parksante</i>	<i>prakär</i> ^α	<i>präksānt</i>

(Krause & Thomas 1960: 270; Malzahn 2010: 191–2, 707–8)

^α Form not attested, inferred from other verbs.

Critiques of the presigmatic aorist theory have often focused on the circumstances of the rise of the suppletive paradigm in pre-PIE (Oettinger 2006: 43–4; Melchert 2015: 128; Willi 2018: 469–70; Søbørg 2020: 121) or on the framework of the **h₂e*-conjugation itself (Peyrot 2013a: 497). In the larger arena of the Indo-European verbal system, both types of critique may be valid and in any case important to discuss. Still, when it comes to the position of Tocharian, they do not actually address the heart of the issue, namely that Tocharian, together with Anatolian, may show remnants of an archaic paradigm with endings from the **h₂e*-set and a sigmatic 3sg. Jasanoff (2019b: 56–7) uses the heteroclitic **r/n*-stems as a methodological parallel to show that our reconstruction of PIE already allows for synchronically opaque paradigms. Thus, critiquing the deeper layers of reconstruction does not in itself invalidate Jasanoff’s comparative analysis.⁵⁶ Conversely, if one accepts the **h₂e*-conjugation explanation of the Hittite *hi*-conjugation, it is not a given that its preterite paradigm forms an isogloss with the Tocharian s-preterite.⁵⁷ The point of the current chapter is therefore to evaluate the assumptions, arguments, and

⁵⁶ As also pointed out by Jasanoff himself (2003: 195–6; 2019b: 58–9).

⁵⁷ See, for example, the approach by Melchert (2015).

evidence that inform this comparative analysis—as well as its competitors—from the Tocharian side.

The chapter is structured as follows. First the *s*-preterite itself, its stem formation, ablaut and endings, as well as the hypotheses about its origin are treated (sections 2.1 and 2.2). Then I discuss how these relate to the formal features of the Hittite *hi*-conjugation and the *s*-aorist, respectively (section 2.3). But the *s*-preterite does not exist in a vacuum; it is intricately linked with *s*-presents of class [8], and partly *sk*-presents of class [9], as well as root subjunctives of class [1]. The sigmatic presents will be treated in the following two chapters, but any explanation of the preterite must account for the root *sbj*.[1]; this stem class will be discussed in section 2.4. Finally, if the *s*-preterite reflects a prestage of the *s*-aorist that was only partly sigmatic, it follows that there would be no fully sigmatic verbs in Tocharian that are cognate to *s*-aorists. Such relic formations have, however, been suggested for Tocharian by Kortlandt (1994). Section 2.5 is dedicated to these suggestions. The discussion of the *s*-aorist naturally invites reflection about the status and development of the PIE aorist in Tocharian in general, and the root aorist in particular. In section 2.6, I present a hypothesis about some of the early changes that happened on the path from PIE aorist to Tocharian preterite.

There is a small group of verbs forming *s*-preterites that is central in these discussions, namely the ones that form subjunctives of class [3] with the suffix ^B*-e-*, ^A*-a-*, e.g., ^B*nketär*, ^A*nkatär* ‘will perish’, and root preterites of class [o] in Tocharian A next to *e*-grade *s*-preterites in Tocharian B, e.g., ^A*nakät*, ^B*neksate* ‘perished’, among several other peculiar features. The diachronic interpretation of these verbs reaches beyond the question of the *s*-preterite, and they will therefore be treated separately in Chapter 4, sections 4.2–4.4.

2.1.1. Tocharian stem patterns

In both Tocharian languages, the *s*-preterite is intimately linked with the sigmatic present classes and the non-*a*-final subjunctives. In Tocharian B, the vast majority of *s*-prt.[3] verbs form *s*-presents of class [8] in *-ṣə/se-* and class [9] in *-ṣṣə/ske-* (or exceptionally, *-nə-ṣṣə/ske-*, class [10]), and either a root subjunctive of class [1], a simple thematic subjunctive of class [2], or an *e*-subjunctive of class [3].⁵⁸ In fact, the

⁵⁸ For the frequency of the most common patterns, see the stem pattern count in Peyrot (2013a: 138–41, 164–9). Note that his count is made from the point of view of the subjunctive so, for some verbs, the *s*-prt.[3] is not attested. For instance ^A*ār-* ‘abandon’ has no *s*-prt.[3] attested, but since an *s*-prs.[8] and an *ñ*-sbj.[7] is found in Tocharian A, and Tocharian B

e-subj.[3] is formed exclusively to *s*-preterites of class [3] in Tocharian B; see below 4.2. Within Tocharian B, there is only one verb that has a root subj.[1] next to a preterite of a different class, namely ^B*yam*- ‘will do’ which forms a causative prt.[4] ^B*yamašša*- derived from the present stem *yam-áššə/ske*- with the suffix *-a*-. This preterite must be an innovation as the preterite participle ^B*yāmu* ‘done’ shows the more archaic stem; compare caus.prt.[4] mid.3sg. *yātäššāte* ‘tamed’, prt.ptcp. m.nom.sg. *yayātäššu* (Malzahn 2010: 215–6; Peyrot 2013a: 144–5).

Table 2.2 shows the stem patterns in Tocharian that have both a sigmatic present in either **-šə/se-* or **-ššə/ske-* and an *s*-preterite attested. The stem patterns are given in the following shorthand: [prs. – subj. – prt.]; [8 – 1 – 3] thus means that a verb has an *s*-present of class [8], a root subjunctive of class [1] and an *s*-preterite of class [3]. For an overview of the stem classes and stem pattern shorthand, see 1.5.1.

Table 2.2: Sigmatic stem patterns in Tocharian B and Tocharian A

Tocharian B				
shorthand	example	present	subjunctive	preterite
[8 – 1 – 3]	<i>nək</i> - ‘act. destroy’	<i>nək-šə/se-</i>	<i>nek/nək</i> - act.	<i>nek-Ø/sa-</i>
[8 – 2 – 3]	<i>trəyk</i> - ‘err’	<i>trəyk-šə/se-</i>	<i>trəyk-’ə/e-</i>	<i>treyk-Ø/sa-</i>
[8 – 3 – 3]	<i>nək</i> - ‘mid. perish’	<i>nək-šə/se-</i>	<i>nke</i> - mid.	<i>nek-Ø/sa-</i>
[9 – 1 – 3]	<i>enk</i> - ‘take’	<i>enk-áššə/ske-</i>	<i>enk</i> -	<i>enk-Ø/sa-</i>
[9 – 2 – 3]	<i>laytk</i> - ‘remove’	<i>laytk-áššə/ske</i> - ^α	<i>laytk-’ə/e-</i>	<i>leytk-Ø/sa-</i>
[10 – 1 – 3]	<i>yəp</i> - ‘enter’	<i>yənm-áššə/ske</i> - ^β	<i>yop/yəp-</i>	<i>yop-Ø/sa-</i>
[10 – 2 – 3]	<i>kəm</i> - ‘come’	<i>kənm-áššə/ske</i> - ^β	<i>śə(n)m-’ə/e-</i>	<i>kəm-Ø/sa-</i>
[10 – 3 – 3]	<i>təm</i> - ‘be born’	<i>tənm-áššə/ske</i> - ^β	<i>cme-</i>	<i>tem-Ø/sa-</i>
Tocharian A				
shorthand	example	present	subjunctive	preterite
[8 – 1 – 3]	<i>näk</i> - ‘destroy’	<i>näk-šä/sa-</i>	<i>nak/näk</i> -	<i>ñak-Ø/sä-</i>
[8 – 7 – 3]	<i>tänk</i> - ‘stop’	<i>tänk-šä/sa-</i>	<i>tänk-ñä/a-</i>	<i>cänk-Ø/sä-</i>

^α Unusual initial accent in an *s*-transitive pattern.
^β The nasal of the suffix *-náššə/ske-* has metathesised into the root

attests the full pattern [8 – 1 – 3], we can infer a Tocharian A *s*-prt.[3] with confidence.

The most frequent pattern is [8 – 1 – 3], but most combinations of the three presents and the three subjunctives are found. A minor present type in Tocharian B is the simple thematic presents of class [2]. Most verbs in this group are former **ṣə/se-* or **ṣṣə/ske-*presents in which the consonants of the suffix have been reanalysed as part of the root, e.g., roots in final *-tk-* like ^B*platk-* ‘emerge, overflow’; see Melchert (1977). A similar pattern exists in Tocharian A with some modifications. The *s-* and the *sk-*presents have merged in Tocharian A into the *ṣä/sa-*present, class [8]. The root subjunctives are being supplanted with subjunctives of class [7] with the thematic nasal suffix *-ñä/a-* (Malzahn 2010: 274–5).

Some of the transitive verbs with the patterns [8 – 2 – 3] and [8 – 1 – 3] (TA [8 – 7 – 3]) form oppositional pairs with intransitive verbs of the pattern [3 – 5 – 1] or [4 – 5 – 1]; I call these ‘s-transitives’ after Peyrot (2013a: 30–1).⁵⁹ In all cases, where the subjunctive stem can be positively determined, the *s*-transitive next to intransitives in [3 – 5 – 1] have a thematic subjunctive, while intransitives in [4 – 5 – 1] have an *s*-transitive root subjunctive; see 4.5. There is another type of inchoative-causative alternation in verbs with *s*-prt.[3], expressed through voice in some stems, which will be treated in Chapter 3 (section 3.7) and Chapter 4 (sections 4.2–4.4). There are very few verbs that form *s*-preterites and deviate from the patterns described above. There are some that are suppletive in some or all stems outside the preterite:

prt. ^B <i>wəs-</i> , ^A <i>wäs-</i> ‘give’	prs. and sbj. ^B <i>ay-</i> , ^A <i>āy-</i>
prt., prs. ^B <i>təs-</i> , ^A <i>täs-</i> ‘put’	sbj. ^B <i>tatta-</i> , ^A <i>tā-</i>
TB prt. <i>m-</i> ‘go’	prs., sbj., prt.ptcp. <i>y-</i>
TA sbj., prt. <i>yām-</i> ‘do’	prs. ^A <i>yā-</i> , ^A <i>ypā-</i>

There are three verbs with an *s*-prt.[3] next to a thematic present(-subjunctive) stem of class [2], ^B*ayk-* ‘know’, ^B*tək-* ‘touch’, ^A*cämp-* ‘be able’, and one next to a root present, ^B*kəln-* ‘sound’. Three verbs exhibit a very strange combination of an *e*-prs.[3] (suffix ^B*-e-*, ^A*-a-*) or *o*-prs.[4] (suffix ^B*-o-*, ^A*-a-*), both systemically linked with intransitivity, and an *s*-prt.[3], often linked with transitivity. The verbs are ^B*māyt-* ‘set out’ with the pattern [3 – 5 – 3],⁶⁰ ^A*māsk-* ‘be(come)’ with a regular middle *a*-present

⁵⁹ Krause & Thomas (1960: 174–5) call these “S-Kausativa”, while Malzahn (2010: 50–1) dubs them ‘Antigrundverb’. See also Seržant (2014: 1–4) who analyses the sigmatic stem pattern as the base verb (“Basisverb”) and the intransitive (“Inagentiv”) as the derived pattern.

⁶⁰ Neither the present or the subjunctive is attested for ^A*māyt-* ‘set out’, but there is an *s*-prt.[3], backing up the Tocharian B pattern. For a possible explanation of this aberrant pattern, see 3.4.2.

of class [3], which might also function as a subjunctive stem,⁶¹ and ^A*präskā* ‘be afraid’ which forms the common pattern [4 – 5 – 1], but attests one s-preterite form, act.1sg. *prasku* ‘I feared’ (A230 b3).⁶² A final, peculiar case is ^B*yənm-* [9 – 5 – 3], ^A*yom-* [8 – 6 – 3] ‘achieve’. The nasal in the Tocharian B root and the nasal subjunctive stem in Tocharian A, 3sg. ^A*yomnāš*, could point to a Proto-Tocharian nasal present, which otherwise never pairs with the s-prt.[3]. On ^A*knānat* vs. ^A*kñasäšt*, see 2.5.2.

Finally, there are four verbs in Tocharian A that form s-imperfects. These are past tense forms which belong systemically to the present, but are formed exactly like s-preterites, e.g., 3sg. ^A*crañkäš*, 3pl. ^A*crañkar* next to the root prs.[1] ^A*träñk-* ‘say’; see Lane (1948: 307), Malzahn (2010: 263–4).

2.1.2. Tocharian stem formation

Since the preterite suffix only appears in some forms of the paradigm, one must look at the ablaut and endings to identify the s-preterite. The endings are preceded by ^{*}*-ə-* instead of ^{*}*-a-* as in the *a*-preterite classes. They are identical to the *a*-preterite, except in the 3pl., where we find the ending ^B*-r*, ^A*-r* in the s-preterite and ^B*-re*, ^A*-r* in the *a*-preterite.⁶³ Additionally, Tocharian A shows an ending *-u* next to *-wā*, which must be the regular equivalent of TB *-wa* with apocope (Schmidt & Winter 1992; Malzahn 2010: 196). There are only two active 2pl. forms in the corpus, both found in Tocharian B: *maitas* to *māyt-* ‘set out’ and *lautso* with *o*-mobile to *lāwt-* ‘remove’. There are no instances of middle 2pl. forms in Tocharian B, but since the middle endings are the same as in other preterite classes, we may infer *-t(ə)* with reasonable certainty.

Whether the sigmatic morpheme in the active 3sg. qualifies as a suffix or an ending is a matter of interpretation. From the point of view of the active paradigm, ^{*}*-sa* certainly behaves as an ending marking the person, number and tense, while the root vocalism marks the stem as an s-prt.[3] like in the other forms of the paradigm:

⁶¹ A possible example of subjunctive meaning in ^A*māskatär* ‘will become’ can probably be found in A429 b8 (Malyshev 2022: 147–8). The meaning of the verb ‘become’ makes the use of the present to indicate the future very likely (Peyrot 2013a: 232, 236–7).

⁶² Systemically, it is tempting to set up an s-transitive paradigm next to the *a*-prs.[4] paradigm, but ^A*prasku* seems to be used intransitively: A 230 b3 59 *prasku lyälypuräš mar märka(pal)* ‘I am afraid of karma, (let) not dharma ...’ (Schmidt & Winter 1992: 53).

⁶³ The Tocharian A ending *-r* could in principle be the regular reflex of ^B*-re*, but since we never find a variant [†]*-ra* before object suffixes, it is more likely that the short ending ^A*-r* was generalised in the *a*-preterite as well (Peyrot 2013a: 418).

1sg. **nek-wa*, 3sg. **nek-sa*, 3pl. *nek-ar*. The fact that the *s*-prt.[3] 3pl. **-r* ending differs from the *a*-preterite **-re*, as well as the special TA 1sg. *-u*, supports the notion of a distinct set of *s*-prt.[3] endings. On the other hand, the middle morpheme **-sa-* can only be interpreted as a suffix, so it is attractive to posit the same for the active 3sg., especially if the middle paradigm is based on the active 3sg. Additionally, an analysis **nek-sa-Ø* will allow us to posit only one ending for the preterite 3sg. in Proto-Tocharian: **-Ø*.

Ablauting roots have **e*-vocalism (^B*e*, ^A*a*) in the *s*-preterite active and **a*-vocalism (^B*a*, ^A*ä*) in the middle. There are some verbs that have *e*-grade in the middle in Tocharian B; these will be discussed in detail in 4.3. Two Tocharian B verbs with *a*-vocalism in the root show *o/a*-ablaut between the singular and the plural of the active: 1sg. *orwa*, 3sg.-obj.2sg. *orsa-c*, 3pl.-obj.2sg. *arar-c* to *ar-* ‘leave’, and 3sg. *kowsa*, 3pl. *kawar* to *kaw-* ‘kill’ (Malzahn 2010: 197).

The *s*-preterite in Tocharian B shows a special accent pattern. In all active forms but the 3sg., the accent falls on the *-a-* between the root and the ending. In the 1sg., the accent is retracted to the first syllable in disyllabic forms and remains on the second syllable in trisyllabic forms: ^B*prekwa* /prékwa/, ^B*prekuwa* /prékúwa/ ‘asked’. In the plural, however, the final syllable is accented, e.g., 1pl. *prekam* /prekám/, 3pl. ^B*prekar* /prekár/ ‘asked’. The 3sg. of the active is peculiar, as it shows a steady root accent, even when an object suffix is added, e.g., ^B*preksa* /préksa/ ‘asked’, ^B*preksane* /préksa-ne/ ‘asked him/her/it’. There are two instances where an accented *-a-* appears in the 3sg in roots ending in a complex cluster: ^B*yonmasa* /yonmása/ ‘achieved’, ^B*otkasa* /otkása/ ‘separated’.

In the whole middle paradigm, the accent falls on the root syllable, e.g., 3sg. ^B*neksate* /néksate/ ‘perished’, 3pl. ^B*parkante* /párksante/ ‘asked’. There are some exceptions: 3sg. ^B*tässäte* /tæssáte/ ‘placed oneself’, ^B*wässäte* /wæssáte/ ‘donned’ (Winter 1993: 201; Malzahn 2010: 193; Peyrot 2013a: 100–1).⁶⁴ It is highly likely that this is the archaic state of affairs.

In Tocharian A, there is root-initial palatalisation in the active in most verbs with *a/ä*-ablaut, e.g., 3pl.-obj.pl. *śarkr-äm* to ^A*kärk-* ‘bind’, 3sg.-obj.3sg. *śosā-ŋ* to ^A*käw-* ‘pour’, 1sg. *lyockwā* to ^A*läwtk-* ‘make’. This contrasts with the middle, where there is no palatalisation; compare act.3sg. *casäs*, 3pl. *casär* with mid.2sg. *tsäte*, 3pl. *tsänt* (< **täsa-*) to ^A*täs-/tä-* ‘put’. For the most part, the root-initial consonant is

⁶⁴ Malzahn (2010: 193) cites 1sg. ^B*kälsāmai* ‘endured’ from PKAS13I a7, but the reading should be updated to *kälšamai*, a masculine vocative singular of ^B*kälšamo* ‘enduring’ (Pinault *apud* (Peyrot 2013b: 241; Pinault, Peyrot & Wilkens 2017: 310).

unpalatalised in the entire Tocharian B paradigm, e.g., act.3sg. *tessa*, mid.1sg. *tässāte*⁶⁵ to ^B*təs-* ‘put’. There are some examples of root-initial palatalisation, but with the exception of *ñauskuwa* to ^B*nusk-* ‘squeeze’, all instances involve an *-l-*, e.g., act.3sg. *lye_uksa*, mid.1pl. *lyuksamnte* to ^B*lɔwk-* ‘light up’ (but mid.3sg. *lauksāte*), act.3sg.-obj.1sg. *lyautsa-ñ*, mid.2sg. *lyutstsatai* (but act.2pl. *lautso*) to ^B*lɔwt-* ‘expel; cross (mid.)’; see Malzahn (2010: 201).⁶⁶ Since it is difficult to explain the initial palatalisation in Tocharian A as analogical, whereas the Tocharian B situation could be due to influence from the middle, we should take initial palatalisation as original as most scholars do (Jasanoff 1988a: 54; Ringe 1990: 185–9; Peyrot 2013a: 499); *pace* Lane (1953: 284–5), Malzahn (2010: 202).

The middle seems to have been unpalatalised in Proto-Tocharian, e.g., 3sg. ^B*tässāte* ‘put’, ^B*namtsate* ‘bowed’; note that the two first examples also show the archaic medial accent. From a PIE standpoint, the s-prt.[3] middle stem ^B*təssá-*, ^A*täsā-* is impossible, since the verb derives from **d^heh₁-* ‘put’. No inherited ablaut grade of this root would yield **ə*:

<i>*eh₁</i>	> <i>*e</i>	> ^B <i>e</i> , ^A <i>a</i>	cf. <i>*meh₁nes-</i> → <i>*m’ēnə-</i> > ^B <i>meñe</i> , ^A <i>mañ</i> ‘moon’
<i>*h₁</i>	> <i>*a</i>	> ^B <i>a/ǎ</i> , ^A <i>ā</i>	cf. ptpc. <i>*-mh₁nó-</i> > <i>*-mane-</i> > ^B <i>-mane</i> , ^A <i>-māñ</i>
<i>*oh₁</i>	> <i>*a</i>	> ^B <i>a/ǎ</i> , ^A <i>ā</i>	cf. <i>*Hōmso-</i> > <i>*anse</i> > ^B <i>āntse</i> ‘shoulder’ (^A <i>es</i>) ⁶⁷

(Ringe 1996: 7–8; Hackstein 2017: 1313, 1316–7)

The Tocharian *ə*-grade must therefore have been introduced secondarily. We find the older middle stem in ^B*tasa-*, e.g., 3sg. ^B*tasāte* ‘put’, synchronically an *a*-prt.[1] middle to the root variant *tas-*. This stem seems to support the reconstruction of a zero-grade in the s-prt.[3] middle: **d^hh₁-s-* > **tas-* (Peyrot 2013a: 500), but see 2.5.1.

2.1.3. The root subjunctive of class [1]

As described in 2.1.1, the root subjunctive of class [1] is systemically dependent on the s-preterite. For this reason, some diachronic explanations of the s-preterite include the root subjunctive as a related formation. In this subsection, I will briefly present the formal features of this stem class.

The subjunctive of class [1] is formed with a root stem, characterised by PT **e-*

⁶⁵ With irregular medial accent.

⁶⁶ Malzahn (2010: 201) lists the s-preterite forms to ^B*šərp-* ‘indicate’, 3sg. *šerpsa*, 3pl.-obj.pl. *šerpar-me*, but since all forms of this verb has *š-*, this is a feature of the root rather than a morphological marker in the preterite.

⁶⁷ See Pinault (2008: 449, 458).

grade in the active singular and *ə-grade elsewhere in verbs with gradation (Krause & Thomas 1960: 222–4; Malzahn 2010: 276–80). In Tocharian B, the accent is usually found on the initial syllable, also outside disyllabic forms: act.3sg.-obj.3sg. *tekämne* /tékən-ne/, vn. ^B*takälñe* /tákəlñe/ to ^B*tək*- ‘touch’, act.3pl.-obj.3sg. *parkänne* /párkən-ne/ to ^B*prək*- ‘ask’. In some verbs, the accent is inconsistent, sometimes falling on the second syllable rather than the first: mid.3pl. *enkantär* /enkántär/ to ^B*enk*- ‘seize’, opt.act.2pl. *yamīcer* /yamáytar/ to ^B*yam*- ‘do’, vn. *tränkalyñe* /trənkálñe/ to ^B*trenk*- ‘cling’; see Peyrot (2013a: 508–15).

In Tocharian A, the root *sbj.[1]* is so poorly attested that an example paradigm for an ablauting root would be almost entirely inferred, but from the few forms that we have, it is clear that the ablaut matches Tocharian B, e.g., act.2g. *naküt*⁶⁸ to ^A*näk*- ‘destroy’, mid.1sg. *pärkmār* to ^A*präk*- ‘ask’, 3sg. *tränktär* to ^A*tränk*- ‘cling’.

Table 2.3: Example paradigm of a Tocharian B root *sbj.[1]: prək*- ‘ask’

	active	middle
1sg.	<i>preku</i>	<i>parkmar</i> ^α
2sg.	<i>prekt</i> ^α	<i>parktar</i> ^α
3sg.	<i>prekäm</i>	<i>parktär</i> ^α
1pl.	<i>parkäm</i> ^α	<i>parkämtär</i> ^α
2pl.	—	—
3pl.	<i>parkäm</i>	<i>parkäntär</i> ^α
(Malzahn 2010: 275–6)		
^α Form not attested, inferred from other verbs.		

2.2. Diachronic explanations of the s-preterite

The origin of the s-preterite has occupied Tocharian scholars for a long time, and thus the problems of the formation are well-known. In this section, I will briefly describe the four most common theories surrounding the origin of the Tocharian s-preterite: the syncretism theory, the s-aorist theory, the presigmatic aorist theory, and the

⁶⁸ Formally identical with the 3sg. of the Tocharian A inchoative root preterite of class [o] of the same root: mid.3sg. *naküt* ‘perished’.

desinential theory. The details of these four theories will be elaborated and contrasted with each other in the comparison sections (2.3.1–2.3.10). For further theories, references, and discussion, see Malzahn (2010: 208–214) and Søbørg (2020: 118–28).

2.2.1. The syncretism hypothesis

The traditional view of the *s*-preterite found in several handbooks takes the formation as a blend of the PIE perfect and the *s*-aorist (Krause 1952: 180; Lane 1953: 284; Krause & Thomas 1960: 247; Van Windekens 1982: 160–9; Adams 1988: 82–5; Winter 1994a: 291–4; Rasmussen 1997; Hackstein 2005: 171). Under this hypothesis, the PIE sigmatic aorist provides the basis for the sigmatic suffix as well as the palatalising **e*-vowel (^B*e*-, ^A*a*-) of the root, while the PIE perfect with **o/Ø*-ablaut provides the unpalatalised and asigmatic forms of both the active and middle. A limited version of the syncretism theory was advocated by Watkins (1962: 66–7), who proposes an syncretism of the perfect and the *s*-aorist at a stage before the latter was fully sigmatic; see also Adams (1978: 281–2).

Formally, the theory works well, considering the merger of **ē* and **o* > PT **⁽ⁱ⁾e*. Ringe (1990: 223–4) argues that the reflexes of PIE **ē* and **o* had not completely merged, citing possible examples of rounding of **ē* > PT **e* > *o* in Tocharian A next to unpalatalised Proto-Tocharian **m* and **p*, the best of which is m.obl.sg. ^A*som* ‘one’ (^B*šeme*) < **sēms*. If the conditioning is true, the merger of the root vocalism cannot be used as argument, but the other examples adduced by Ringe are either borrowings or have uncertainties in their reconstruction, so we should be cautious.

Between the *s*-aorist and the perfect, all morphological features of the *s*-preterite are available: all ablaut grades of the PIE verbal system, **ē*, **e*, **o*, and **Ø*, the presence or absence of the sigmatic suffix, and secondary present-aorist endings as well as perfect endings. Formally, we can therefore easily explain the *s*-preterite from these two PIE paradigms. But this in itself can be seen as a weakness. With the grammaticalisation of palatalisation, it is uncertain how much we can rely on the mechanical reconstruction of the ablaut grade of each form. We may mix and match features from the *s*-aorist and the perfect to arrive at the attested paradigm, but without a convincing analysis of the motivation behind the merger, it remains unprovable.

An argument against the theory, adduced by Jasanoff (2003: 177), is that a very similar theory has been proposed for Hittite (Sturtevant & Hahn 1951: 143–4; Kronasser 1956: 191–2; Eichner 1975: 91–2; Kloekhorst 2008: 688; Norbruis 2021: 140–

2). These scholars suggest that the *hi*-conjugation preterite likewise came about through a mixing of the perfect and the *s*-aorist, namely that the active 3sg. of the *s*-aorist replaced the original 3sg. of the perfect, which was deemed defective. Jasanoff argues that it is very unlikely that two such similar developments should have happened in Hittite and Tocharian by coincidence; instead he proposes a pre-PIE suppletion; see 2.2.3.

Jasanoff argues that this scenario of two independent instances of syncretism is uneconomical, especially in these two branches with quite dissimilar verbal systems. In my opinion, the intrusion of an *s*-aorist form in the Hittite *hi*-preterite is made unlikely by the complete absence of other *s*-aorist relics in Anatolian; see 2.5. Since other Anatolian languages do not attest the ending *-s* in the *hi*-preterite 3sg., the proposed suppletion would have to have happened within pre-Hittite which in turn makes a complete loss of the *s*-aorist in all Anatolian languages very late and thus implausible. However, the fact that suppletion in Anatolian is unlikely is not in itself an argument against syncretism in Tocharian. Whether the paradigms of the Hittite *hi*-preterite and the Tocharian *s*-preterite truly are as identical as Jasanoff posits will be discussed in section 2.3.

2.2.2. An origin in the sigmatic aorist

A different approach is to derive the *s*-preterite from the *s*-aorist entirely, asigmatic forms and all. An early suggestion of this nature was made by Van Windekens (1944: 272), and it has since been advocated more elaborately by several scholars, most notably Ringe (1990) and Kortlandt (1994; 2015a: 51–3), supported by Peyrot (2012a: 252; 2013a: 497–8, 503–7), Willi (2018: 470–2), and Søbørg (2020: 122–3, 124–5).

In order to get the *s*-preterite from the *s*-aorist, the suffix **-s-* must have been lost in many forms of the paradigm. Ringe (1990: 191–212) goes through each member of the active paradigm to explain by sound change and analogy how they each lost their suffix. His starting point (1990: 190–2) is the suggestion that the loss of final clusters in pre-Proto-Tocharian happened gradually, leaving the 2sg. and 3sg. of the *s*-aorist sigmatic but endless **prēks*. This caused the 2sg. to be renewed with the perfect ending **-ta*, while the new preterite 3sg. ending **-a* was introduced in the 3sg. Subsequently, perfect endings were introduced in all forms. He proposes two sound laws, **Csm > *Cm* and **Csr > *Cr*, to get rid of **-s-* in some forms and explains the rest by different chains of analogy. The first sound change may be paralleled by the plural object marker ^B*-me*, ^A*-m*, if it belongs with the Hittite enclitic pronoun *-šmaš* (dat.-acc.2pl./dat.-loc.3pl.) (Schmidt 1978: 154; Peyrot 2013a: 505).

Kortlandt's (1994: 61–2) starting point is likewise the loss of final clusters and

interconsonantal loss of *-s-. This led to a paradigm with both sigmatic and asigmatic forms which ultimately resulted in the asigmatic root subjunctive [1] on the one hand and the s-preterite on the other. Kortlandt has to assume that the sigmatic 3sg. was restored in the preterite to disambiguate it from the subjunctive. It is obviously a weakness for the theory that it predicts loss of the *-s- exactly where it is actually found, and it is unclear what the restoration is modelled on. On the other hand, explaining the root *sbj.*[1] together with the *s-prt.*[3] is a clear advantage because of their close relationship. Kortlandt's theory was greatly expanded by Peyrot (2013a: 503–7) who outlines a scenario where the paradigm split exactly because of the introduction of perfect endings to the preterite. The original paradigm with secondary endings, at this point indistinguishable from the primary endings, lost most of its *-s-formants through the sound changes discussed above: loss of final clusters, **Csm* > **Cm* and **Csr* > **Cr*. This paradigm then received new present-subjunctive endings, ousting the final sigmatic forms, and thus the root subjunctive was born.

The s-aorist hypothesis is expensive on the phonological side since we have to accept two sound changes that are not very well substantiated. They are, however, not countered by other evidence, and there are some verbs to vowel-final Proto-Tocharian roots that are attested with a sigmatic suffix running through the paradigm, e.g., ^B*tās-*, ^A*tās* 'touch' and ^A*kñas-* 'know'. These could be the last relics of a complementary distribution, which lend circumstantial support to a phonological solution to this issue. In addition, it is significantly more economical than the syncretism hypothesis on both the structural and functional sides. For these reasons, the s-aorist hypothesis is the more convincing of the two "classical" explanations.

2.2.3. The presigmatic aorist theory

The presigmatic aorist theory starts from the observation that the Hittite *hi*-preterite and the Tocharian s-preterite both have a sigmatic ending in the 3sg. in a paradigm with endings that are cognate with the perfect endings of the rest of CIE. By far, the most prominent hypothesis advocating the archaism of the Tocharian paradigm has been formulated by Jasanoff (1988a; 2003: 174–214; 2019b). Since neither branch shows direct evidence of a fully sigmatic aorist,⁶⁹ and since there are several strong stem cognate pairs between the Tocharian s-preterite and the s-aorist elsewhere, especially in Indo-Iranian, Jasanoff proposes that the two paradigms represent the

⁶⁹ On possible relics in both Hittite and Tocharian, see below (2.5).

precursor of the classical fully sigmatic aorist. The presigmatic paradigm was a **h₂e*-conjugation aorist with **o/e*-ablaut in which a suppletive form **CēC-s-t* has supplanted the original 3sg. form.

As I argued in the introduction of this chapter (Chapter 2), the validity of the pre-PIE suppletion event is not within the scope of this chapter, but I will briefly sketch out the most important tenets here. Jasanoff has continuously updated his proposal⁷⁰ but the basic notion has remained the same: the suppletion happened when an intrusive form from an imperfect of an *s*-present with **ē/e*-ablaut entered some **h₂e*-conjugation aorists in the 3sg. It started in a subset of aorists that formed these *s*-imperfects, e.g., **prek-* ‘ask’, and spread from there in transitive verbs, including the active paradigm of verbs with inchoative-causative semantics, e.g., **nek-* ‘perish; destroy’ (Jasanoff 2019b: 60–2). The presigmatic aorist has the following characteristics (see Table 2.4):

- An acrostatic active paradigm with *o*-grade in the 1st and 2nd person, singular and plural,⁷¹ *e*-grade in the 3pl., and *ē*-grade and a suffix **-s-* in the 3sg. This is reflected in the Tocharian *s*-preterite active and the Hittite *hi*-conjugation preterite. It also emerges as the root subjunctive of class [1].
- A middle paradigm which was sigmatic in all forms if the verb had “true” middle (i.e., autobenefactive) meaning (type 1), e.g., mid.3sg. **préksto* ‘asked (for oneself)’, and asigmatic if the verb had causative alternation (type 2), e.g., mid.3g. **nóke* ‘perished’.⁷² In Tocharian, type 1 is reflected in the regular *s*-preterite middle, e.g., ^B*parksate*, ^A*präksāt* ‘asked’, while type 2 is found in the Tocharian A root prt.[o], e.g., ^A*nakāt* ‘perished’ and the corresponding Tocharian B *e*-grade *s*-preterite middle, e.g., ^B*neksate* ‘perished’. It is also found in the Vedic passive aorist and other relic formations in CIE.
- Two competing subjunctive stems, one sigmatic, **CéC-se/o-*, and one asigmatic, **CéC-e/o-*. In Tocharian, the sigmatic subjunctive was reanalysed as a present and the simple thematic subjunctive continued in the subjunctive function, while the opposite happened in CIE; see 4.5.

⁷⁰ Compare, e.g., Jasanoff (1988a: 62) with his most recent treatment (Jasanoff 2019b: 55–62).

⁷¹ This is an update of the 2003 account, in which he reconstructs *e*-grade in the whole plural (Jasanoff 2003: 178).

⁷² On the suggestion of Villanueva Svensson (2006: 197), Jasanoff (2019b: 59–60) now reconstructs the nondental middle ending as **-e*, rather than **-o*, in the oldest stages of the paradigm; see 4.2.2.

- An asigmatic optative **prék-ih₁-*, directly reflected in the Tocharian optative **p'ark'ay-*; see Chapter 6.

According to Jasanoff, the presigmatic paradigm developed into the fully sigmatic aorist in the proto-language ancestral to the CIE languages. This would have entailed a full sigmatisation of the active indicative paradigm, adoption of secondary endings, and levelling of the ablaut by ousting *o*-grade.

The presigmatic aorist has received both support (García Ramón 2006: 29–31; Fellner & Grestenberger 2018: 63; Weiss 2018: 373; 2020: 437 fn. 13; cautiously, Fortson 2010: 102) and criticism, from both opponents and proponents of the **h₂e*-conjugation framework (Kim 2005: 194; Oettinger 2006: 43–5; Melchert 2015; Willi 2018: 469–70; Søborg 2020: 121). The benefit of the hypothesis from a Tocharian point of view is that it explains several problematic paradigms as inherited, thus eliminating many waves of development otherwise necessary. Explaining the archaic formations of the *e*-subj.[3] (suffix ^B*-e-*, ^A*-a-*) and the Tocharian A root prt.[o] (type *nakät*), as well as the *s*-prs.[8] and the root sbj.[1], which clearly belong together systemically, through one proto-paradigm makes for an attractive possibility. However, outside of the active preterite, the Hittite and Tocharian systems are not very much alike; many features of the presigmatic aorist are not based on comparative analysis, but on single-branch evidence. A recurrent weakness of the hypothesis is that it relies to a large extent on inferred forms and individual paradigms. For instance, Jasanoff (2019b: 22–8) uses the Hittite verb *nai-ⁱ* ‘turn’ as the locus for many sigmatic forms in Hittite, including the sigmatic 2pl. *-šten(i)*.⁷³ This means that if alternative solutions can be found for the forms in question, it directly weakens the basis of the hypothesis.

⁷³ See Kloekhorst & Lubotsky for a competing analysis and a new etymological proposal of Hitt. *nai-ⁱ* ‘turn’.

Table 2.4: Paradigm of the presigmatic aorist according to Jasanoff

	active	middle 1	active	middle 2
	<i>*prek-</i> ‘ask’	‘ask for oneself’	<i>*nek-</i> ‘destroy’	‘perish’
1sg.	<i>*prók-h₂e</i>		<i>*nók-h₂e</i>	
2sg.	<i>*prók-th₂e</i>		<i>*nók-th₂e</i>	
3sg.	<i>*prék-s-t</i>	<i>*prék-s-to</i>	<i>*nék-s-t</i>	<i>*nók-[t]o</i>
1pl.	<i>*prók-me-</i>		<i>*nok-me-</i>	
2pl.	<i>*prók-te-</i>		<i>*nok-te-</i>	
3pl.	<i>*prék-ʀs</i>	<i>*prék-s-nto</i>	<i>*nék-ʀs</i>	<i>*nékro</i>
	root subjunctive	s-subjunctive	optative	
	<i>*prék-e/o-</i>	<i>*prék-se/o-</i>	<i>*prék-ih₁-</i>	

(Jasanoff 2003: 174–214; 2019b)

2.2.4. Desinential *-s

Another hypothesis embedded in the **h₂e*-conjugation theory was proposed by Melchert (2015). He rejects Jasanoff’s suppletion as improbable but accepts the similarity of the Hittite and Tocharian paradigms, projecting both the sigmatic 3sg. and 2pl. endings back to PIE for all **h₂e*-conjugated aorists. This distribution mirrors the distribution of the perfect **h₂e*-present ending **(é)*: Ved. 3sg. *véda*, 2pl. *vidá* < 3sg. **uóide*, **uidé* ‘know’. Thus, Melchert (2015: 130–2) reconstructs three types of aorists: the classical root aorist, the classical *s*-aorist, both with secondary endings, and the **h₂e*-conjugation aorist. He proposes that a blend of the two latter types make up the Tocharian *s*-preterite, attributing the inflexion of the active to the **h₂e*-aorist, but its palatalisation to the *s*-aorist. Likewise, the *s*-preterite middle is traced back to the *s*-aorist. This theory suffers from the same problem as the classical syncretism theory; the two paradigms offer a plethora of forms, but a motivation for the paradigm mix is lacking. There are also many unanswered questions about the formal development of the Tocharian paradigm. For instance, Melchert (2015: 130) reconstructs **é/e*-ablaut for the *s*-aorist, but does not explain why the *s*-prt.[3] middle initial consonant is not palatalised. All in all, this variant of the syncretism theory is very costly in assumptions and reconstructed paradigms.

Melchert is not alone in positing a 3sg. ending **-s* in Proto-Indo-European, however. Already Burrow (1954; 1957) suggested that the desinential 3sg. *-s* found the

Vedic precative is etymologically connected to the Hittite *hi*-preterite 3sg. -š and the Tocharian *s*-preterite. This view was recently expounded by Kümmel (2018), who reconstructs PIIr. 3sg. *-š⁷⁴ as a second aorist ending on the basis of the Vedic precative, the Old Persian preterite 3sg. ending -š and other Indo-Iranian relic forms, alongside a 3pl. *-rš (> Ved. -ur). Connecting these with the Hittite *hi*-conjugation, he (2018: 253) sets up a stative paradigm with primary endings identical to the traditional perfect and secondary endings characterised by 3sg. *-s, 3pl. *-rs, in essence a variant of the **h₂e*-conjugation theory, similar to that of Melchert (2015). Kümmel's reconstruction is based exclusively on the endings. Many aspects of stem formation and function are left open, although he (2018: 251–2) proposes tentatively that their meaning may have been resultative or completive. His account is followed in part by Søbørg (2020: 207–10, 212) who adds the 2pl. ending *-se and sets up an “*s*-perfect” for pre-Proto-Indo-European. These very deep layers of reconstruction are outside the scope of the thesis, but the possibility of sigmatic desinences will be revisited in 2.3.6.

2.3. Comparison of the *s*-preterite, the *hi*-preterite and the *s*-aorist

As discussed in the introduction to this chapter, the crux of the presigmatic aorist theory is the comparison of the Tocharian *s*-preterite and the Hittite *hi*-conjugation preterite. The closeness of these two paradigms is emphasised by Jasanoff as the reason for reconstructing the presigmatic aorist:

“In all structurally significant details, therefore, the Hittite and Tocharian paradigms are identical” (Jasanoff 2003: 176)

The point of this section is to test this statement against alternative solutions. To do this, I will discuss the various formal features of the Tocharian *s*-preterite compared with the Hittite *hi*-preterite and the CIE *s*-aorist. First, I will address the asigmatic endings, 1sg., 1pl. and 3pl., as they form the basis of the **h₂e*-conjugation paradigm, before discussing the individual sigmatic endings in the 2sg., 3sg., and 2pl., the sigmatic middle, as well as the ablaut and function of the paradigms.

⁷⁴ His notation.

2.3.1. The **h₂e*-endings in the preterite

That the asigmatic Hittite *hi*-preterite endings and the PIE perfect endings are cognate is beyond dispute (Eichner 1975: 86–7; Oettinger 1979: 451; Jasanoff 2003: 6–7; Kloekhorst 2008: 137). It is also widely recognised that most of the Tocharian preterite active endings, in both *s*- and *a*-preterites, are related to this set (Krause & Thomas 1960: 258–60; Pinault 2008: 626–8; Malzahn 2010: 41–44; Peyrot 2013a: 418). Whether they derive directly from the PIE perfect, however, is a matter of contention.

Jasanoff (2003: 162; 177) states that there is no direct evidence that the finite perfect developed into a preterite in Tocharian as an argument against the notion that the *s*-preterite received its endings from the perfect. Since the perfect participle, reflected in the Tocharian preterite participle, PT **-wəs-* < PIE **-uos-* (Pedersen 1941: 110–1), is the only non-contested remnant of the perfect, this is in principle true. Still, accepting that the perfect developed into a preterite has more advantages than disadvantages. While the perfect participle is not a finite formation, it was certainly associated with the Tocharian preterite in the prehistory of the branch, and since the preterite is built at least in part on the PIE aorist, the two formations, aorist and perfect participle, must have been associated in pre-Proto-Tocharian. This could have happened independently of the finite perfect, but it must at least be considered a circumstantial piece of evidence in favour of a similar development in the finite forms. Furthermore, a syncretism of aorist and perfect is also attested in Italic (Meiser 2003: 75–87; Weiss 2020: 434–6). From the assumption that the perfect became a past tense, it is quite natural that its endings were deemed more effective as past tense markers than the secondary endings which had merged with the primary endings, at least in some forms. This will be explored further below (2.3.2–2.3.6).

On this point, the **h₂e*-conjugation theory is at a disadvantage, since it must be explained why the **mi*-set was restricted to present-subjunctive use and the **hi*-set to preterite use, if both sets were used in presents as well as aorists in the proto-language. Even Jasanoff's own scenario (2003: 162) for the preterite participles works best if the perfect became a preterite. He proposes that unreduplicated participles such as ^B*wikau*, ^A*wiko* 'disappeared' were secondarily created to **ā*-final preterites and were thus never de-reduplicated. However, if the reduplicated participle was isolated in the system by the time it became productive, we would expect reduplication to be interpreted as a formal feature of the participle along with the suffix. If, on the other hand, the preterite participle existed side by side with a reduplicated preterite, it is understandable why only the suffix would be transferred, as reduplication would still be analysable as part of the preterite stem. In summary, it is unproblematic to assume that the perfect became a preterite in Tocharian, which

challenges Jasanoff's argument against the introduction of perfect endings in the s-preterite.

2.3.2. The asigmatic 1sg.

Since it is mostly the function of the $*h_2e$ -endings that is contested, not the endings themselves, the formal reconstruction is generally uncontroversial, though details vary between scholars. In Anatolian, the 1sg. ending $*-h_2e$ is directly continued in several languages, e.g., Cluw. $-(h)ha$, Pal. $-hha$, Lyc. $-\chi a$, while in Hitt. $-hun$, it appears to have been extended with $-un < *-m$ from the *mi*-conjugation (Kronasser 1956: 188–9; Oettinger 1979: 452, 558, 561; Kloekhorst 2008: 363).

In Tocharian A, the 1sg. shows three variants: $-\bar{a}$ and $-\bar{a}w\bar{a}$ in *a*-preterites, and $-w\bar{a}$ and $-u$ in the *s*-preterite. Tocharian B has just two, $-awa$ in the *a*-preterites and $-wa$ in the *s*-preterite (Krause & Thomas 1960: 258; Malzahn 2010: 39–40). It is very tempting to connect the $*-a$ of the ending with PIE $*-h_2e$ (Pinault 2008: 626; Peyrot 2013a: 418), but the origin of the *w*-element is contested; for a full discussion and references, see Malzahn (2010: 28–30, 39–40).

Since we also find $-w$ - in the Tocharian B present 1sg., Peyrot (2013a: 410–1) opts for the thematic primary ending $*-oH$ as the origin, as originally proposed by Pedersen (1941: 141; see also Lane 1976: 140–1; Ringe 1996: 89; Pinault 2008: 620). Phonologically, this is plausible, since final $*-\bar{o}$ seems to have developed into $*-\bar{u} > *-u$:

PIE $*k_u\bar{o}(n)$ 'dog' > $*kw\bar{u}$ > $*ku$ > ${}^Bku, {}^Aku$ 'dog'

PIE $*d_u\bar{o}h_1$ '2' > $*w\bar{u}$ > $*wu$ > ${}^Awu$ '2'
(Ringe 1996: 89)

However, the distribution of this ending in the present is highly problematic. The ending ${}^B-u$ is found in athematic root stems, whereas thematic presents all show the ending ${}^B-e_u$ (arch.), ${}^B-au$ (cl.) (Stumpf 1990: 80; Peyrot 2008: 42). This is also true for the present-preterites (preterite class [6]) in Tocharian B, originally from the thematic aorist: ${}^Blatau$ 'I left', ${}^Bkamau$ 'I came'. We would therefore have to assume that the original thematic ending was extended to the athematic root stems where it was kept unaltered, while it underwent restructuring in its original environment. This is not impossible, but not particularly attractive either.

As Malzahn (2010: 30) suggests, it would be attractive to derive $*-w$ from the PIE secondary thematic ending $*-om$. Phonologically, however, this is not possible, as

*-om would have given PT *-e with loss of final *-m (> *-n):⁷⁵

PIE **k̑ntóm* ‘100’ > **kānte* > ^B*kante*, ^A*känt* ‘100’
(Ringe 1996: 69–70)

In my opinion, the easiest way to analyse these endings is to take *-w—whatever its origin—as the pre-Proto-Tocharian representation of the secondary ending, which ended up in the present endings when secondary and primary endings merged; similarly Klingenschmitt (1994: 407), Peyrot (2013a: 418), tentatively Pinault (2008: 626). This allows for a unified interpretation of the present and preterite endings, as prt.1sg. *-wa can be understood as the result of stacking: *-w + *-a → *-wa, and it directly explains ^B*latau* ‘I left’ as a relic preterite formation from *(*h*₁*e*)**h*₁*lud*^h*om*. Whether *-m became *-w through sound change or replacement must remain an open question for now.⁷⁶

When it comes to the s-preterite 1sg. specifically, neither the **h*₂*e*-conjugation nor the s-aorist theory can explain the Tocharian outcome easily. Jasanoff (2003: 175) suggests that a specialised outcome of *-*h*₂*e* in *seṭ*-roots, *-o*H*-*h*₂*e* > *-o*h*₂*u* > *-ō*u*, was strengthened to *-ō*u*a and subsequently generalised, but this development is highly speculative. Within the s-aorist theory, the origin of the *-wa ending is less important, since the preterite endings are seen as secondarily introduced. It should be explained, however, how the predicted preform **preksawa* lost its *-s-, when it should have been preserved in that environment according to both Ringe (1990: 208–11) and Peyrot (2013a: 505). In the following sections, we will see that analogical removal is possible with a few assumptions. So, while the facts of the Tocharian s-preterite 1sg. are by no means straightforward, it is reasonably clear that it does not form a direct cognate with the Hittite *hi*-preterite 1sg.

2.3.3. The asigmatic 1pl. and 3pl.

The 1pl. of both the *mi*- and the *hi*-preterite in Hittite is -*wen* (prs. -*weni*).⁷⁷ The origin

⁷⁵ Winter (1990a: 15–9) does propose a phonological solution for the Tocharian B present ending, namely that it came about in position before the 1sg. pronoun ^B*ñās*; see also Adams (1993a: 22–3). Since this explanation is TB-internal, it cannot explain the *w*-element in the preterite 1sg., found in both languages.

⁷⁶ The element -*w*/-*u* is reminiscent of the prs.1sg. ending found in CLuw. -*wi*, HLuw. -*wi*, Lyd. -*w* (but Hitt. -*mi*, -*hi*). Whether this ending is the result of sound change or replacement is likely uncertain (Gérard 2005: 98–9 fn.642; Kloekhorst 2022: 73).

⁷⁷ The allomorph -*men* (prs. -*meni*) is restricted to stems in final -*u*- (Hoffner & Melchert 2008:

is not quite clear; it seems likely that the ending continues the 1du. ending; cf. e.g., Skt. *-va(s)*, OCS *-vě*, Got. *-u/-wa* (Kloekhorst 2008: 1001). In Tocharian, the 1pl. ^B*-m*, ^A*-mäs* are identical to the present-subjunctive 1pl. endings and go back to PT **-mā(s)* from PIE **-me(s)*. Here, the **h₂e*-conjugation accounts straightforwardly for the Tocharian forms: PT **prekmā* ‘we asked’ < **prókme* (Jasanoff 2019b: 54). Within the s-aorist hypothesis, one assumption is necessary: the loss of **-s-* through regular sound change **-Csm-* > **-Cm-*. Ringe (1990: 195) supposes that loss of **-s-* occurs “between a consonant and a (nonvocalic) resonant in pre-PT”. This is plausible, but without examples of **-Csl-* and **-Csn-*, the rule is formulated too broadly. In any case, if the etymology of ^B*ersna* ‘form’ < **h₃er-s-nh₂* by Del Tomba (2023: 213) is correct, **-s-* is not lost between **r* and **n*.

In the 3pl., Hittite and Tocharian disagree on the ending variant. Hittite shows the reflex **-ēr* > Hitt. *-er* (Kloekhorst 2008: 244), while the **-r* of Tocharian must derive from PIE 3pl. **-rs* or **-r*. Like in the 1pl., the **h₂e*-conjugation account of this form is uncomplicated, although it is worth noting that Hittite and Tocharian reflect different allomorphs of the 3pl. ending. It is not clear what has happened to **-ēr* in Tocharian.

The details in Tocharian are not entirely straightforward. In both the 1pl. and the 3pl. in Tocharian B, the final syllable is unexpectedly accented, indicating an underlying final schwa *-rə*: 3pl. ^B*prekar* /prekárə/. For this reason, Ringe (1990: 197–205) argues that the ending could not have been **-r* or **-rs* as these would result in a disyllabic word in which the accent would fall on the first syllable, i.e., †^B*prekär* /prékär/. He refutes the possibility of analogical oxytonesis on the model of the 1pl. due to a lack of parallels and suggests instead that **-rə* is the result of conflation between the perfect ending and the original s-aorist secondary ending, **-r-nt* > **-rənt* > **-rə*. This would be parallel with the *a*-preterite ending **-re*, which he suggests comprised **-r-* plus the thematic 3pl. **-ont*. The outcome of this conflation would result in a loss of **-s-* due to the sound change **Csr* > **Cr* (Ringe 1990: 205; also Peyrot 2013a: 505). However, the preforms **-rnt* and **-ront* should yield PT **-rən* and **-ren*, respectively (Pinault 2008: 628). Additionally, there is no good motivation for the difference in endings, which is also acknowledged by Ringe himself (1990: 234 n. 44).⁷⁸

In the s-preterite 3pl. ending, there is no evidence for final schwa, either in the form of *o*-mobile or final *-ä* (Peyrot 2013a: 419). However, in the survey of *o*-mobile by

181 fn. 14). Other Anatolian languages confirm the *w*-initial ending for Proto-Anatolian: prs.act.1pl. CLuw. *-unni*, Lyd. *-wv*.

⁷⁸ See the brief discussion on **-re* in section 2.6.

Malzahn (2012a), there are no examples of *o*-mobile to final *-r* at all, so its absence in the 3pl. may not be significant. It is therefore possible that ^B*-r*, ^A*-r* actually does reflect **-rə*, in which case **-ə* could be analogical to the rest of the plural: 1pl. **-mə*, 2pl. **-sə*. This means that the suffix **-s-* would find itself in interconsonantal position **-Csrə* in most verbs, much like in Ringe's account. If we accept the proposed sound change **CsrV > *CrV*, the 3pl. would turn out asigmatic. There is unfortunately no supporting evidence for this sound change, but neither are there counterexamples. This is probably due to a general lack of input, i.e., the sequence **CsrV* would have been rare—if not absent—in Proto-Indo-European and pre-Proto-Tocharian grammar.⁷⁹ The sound change is plausible, but since it is unparalleled, we should be cautious accepting it. Alternatively, as proposed by Peyrot (2013a: 506), we may explain the lack of **-s-* in the 3pl. as analogical. If the 2sg., 1pl., and 2pl. of the paradigm had removed the suffix, either by sound change or by resegmentation (see below 2.3.4–2.3.5), it is plausible that **-s-rə* was remade to **-Ø-rə* through analogy with the rest of the plural; cf. 1pl. **-Ø-mə*, 2pl. **-Ø-sə*. From that point, we can also understand how the 1sg. could have been adapted, since it would be the only form of the paradigm with the suffix **-s-* (assuming that the 3sg. was already **-sa-*, which is a likely scenario; see Table 2.7).

To get from the fully sigmatic aorist to the asigmatic forms of the *s*-preterite takes three assumptions: one sound law and two analogies. Each of them is plausible in light of the other changes happening in the paradigm. Getting from the presigmatic aorist obviously takes fewer assumptions, since the 1sg., 1pl., and 3pl. were never sigmatic according to this theory. It is, however, important to note that none of the three endings are directly cognate. The Tocharian 1sg. and the Hittite 1pl. each have an unexplained *w*-element (striking, but coincidental), while the 3pl. reflects different allomorphs in each branch. The comparison between the asigmatic endings in Tocharian and Hittite is therefore not as impressive as it initially appears.

2.3.4. 2sg. TB *-sta*, TA *-št*, Hitt. *-šta*

Usually, the discussion of the sigmatic endings is limited to the 3sg. and 2pl., but since the Tocharian and Hittite 2sg. endings are practically identical on the surface, they are worth discussing too. The general 2sg. preterite ending in Tocharian, ^B*-sta*, ^A*-št*, goes back to PT **-sta*.⁸⁰ The sigmatic element is not expected from the PIE point of

⁷⁹ Our best bet would be a **ro*-adjective to a root in final **-Cs-*, but I am not aware of any such form.

⁸⁰ An early comparison of these two endings was drawn by Petersen (1933: 28) who traces

view, where the traditional perfect ending can be reconstructed as **-th₂e*; cf. Ved. pf.2sg. *-tha*, Gk. *-(σ)θα*.⁸¹ The same ending is also found in the Hittite 2sg. *hi*-ending *-tta*. In Hittite, we find a variant *-šta*, attested both in the 2sg. and 3sg., which looks just like PT **-sta*. These endings cannot, however, be cognate, since *-šta* is attested only in later Hittite in a subset of verbs and must have ended up in the 2sg. due to the conflation of 2sg. and 3sg. in the preterite endings (Kloekhorst 2008: 802; Søbørg 2020: 180–1). In some cases at least, *-šta* can be explained as the *hi*-conjugation 3sg. *-š* with the *mi*-conjugation ending *-tta* stacked on top.

To explain the Tocharian ending, Ringe (1990: 192, 209–11) takes the **-s-* as the suffix of the s-aorist plus **-ta*, which was reanalysed as a new ending because an epenthetic vowel developed in the sequence **-Cs-ta* > **C-as-ta* → **C-asta*; cf. PIE **suekštós* ‘sixth’ > PT **šakaste* > ^B*škaste*, ^A*škäst*. Kortlandt (2015a: 52) rejects the parallel **suekštos* > **šakaste* > ^B*škaste*, ^A*škäst* ‘sixth’ since Gaulish *suexos* rather points to a preform **sueksos*, indicating that **-tos* was reintroduced later. Even if this is true, epenthesis must have occurred to give the attested Tocharian forms. Since **-sta* is the general ending of the preterite active 2sg., Ringe (1990: 211) assumes that **-asta* was created for the *a*-preterites (replacing **-a-ta*) through analogy with the s-preterite 2sg. **-asta* after this was resegmented from **-s-ta*.

Jasanoff (1987b: 178–9; 2003: 176) explains the Tocharian ending as a PIE allomorph to roots in final dentals, **-T-th₂e* > **-Tsth₂e*, to which he also attributes Latin perfect 2sg. *-istī*;⁸² cf. Gk. *οἰσθα*, Got. *waist*, but Ved. *véttha* < **uoid-th₂e* ‘you know’. Here we would have to assume general levelling from *T*-final roots. We may note that Ringe’s and Jasanoff’s explanations are not mutually exclusive. Whether the preterite 2sg. ending was **-th₂e* or **-sth₂e*, the result would be same when added to the s-aorist stem: **-C-s-sth₂e* > **-C-ssta-* > **-C-sta* > **-Casta*. Still, both hypotheses rely on levelling from a subset of forms.

Such a levelling is unnecessary if we follow the scenario presented by Krause (1951: 152–4). He suggests that **-sta* represents the old secondary 2sg. ending **-s* with the pre-Proto-Tocharian preterite ending **-ta* stacked on top. If the s-preterite indeed reflects the s-aorist with secondary endings, we can explain **-sta* for all preterites in a single development, since both root aorists and s-aorists would end in **-s* (< **-s-s* in the s-aorist) simply by positing an addition of **-ta*. The motivation for this would not be the phonological loss of **-s#*, but the merger of secondary and primary endings in

them back to the s-aorist.

⁸¹ For a new proposal on the origin of aspiration in the Greek ending, see Norbruis (2023).

⁸² For references on the Latin linking element *-is-*, see Søbørg (2020: 253–5).

the former present-aorist system. Still, the outcome would be the same for the former s-aorist: stop-final roots would undergo epenthesis and *-s- would no longer be analysable as a suffix, but as part of the ending. Stacking also works in the 1sg., where the ending *-h₂e > *-a could have been added onto the “secondary” 1sg. ending *-w; see 2.3.2. In the 3sg., however, a stacking of endings is hardly likely, as *-t-e would yield *-t’ə rather than the ubiquitous *-Ø. This strongly suggests that something had already happened in the 3sg. to mark it adequately for past tense; see below (2.3.6).

The presigmatic aorist theory does not claim that the Hittite and Tocharian endings are related, and it is clear that they are not. However, the two endings, TB -*sta* and Hitt. -*šta*, show that formal identity can arise through coincidence, which weakens the argument that the 3sg. ^B-*sa*, ^A-*s*, Hitt. -*š* must be related; see also the discussion of the 2pl. below.

2.3.5. 2pl. TB -*sə*, TA -*s*, Hitt. -*šten*

In the Hittite *hi*-conjugation plural, the endings are identical to the *mi*-conjugation, except in the 2pl., where an additional ending -*šten* is found in the *hi*-conjugation. The same is true in the present: -*šteni* alternates with -*tteni* in the *hi*-verbs. Kloekhorst (2007: 493–5) has shown that in the cases where -*š*- is not phonologically expected between the root and the ending, -*šten(i)* is exclusively found to vowel-final, primarily diphthongal, *hi*-conjugated verbs. He also shows that -*šten(i)* precedes -*tten(i)* chronologically in the verbs where it is found. While this ending is quite dissimilar to the Tocharian ending *-*sə* on the surface, it is a likely assumption that -*šten(i)* comprises *-*s*- and *-*tten(i)*, the 2pl. *mi*-ending, widely found in the *hi*-conjugation. Such a comparison was made by Petersen (1933: 29) who proposed that both the Tocharian and Hittite endings go back to the s-aorist 2pl. *-*s-te*. The phonological developments he needs to arrive at the Tocharian ending can no longer be maintained, but the connection with the Hittite ending has recently been revitalised by several scholars (Kloekhorst 2007: 499; Melchert 2015: 129; Søbørg 2020: 143–4; 191). These three scholars argue that the sigmatic ending is without internal motivation in both Hittite and Tocharian, and thus must go back to a common preform *-*se* or *-*sV*. Such an ending would be in conflict with the archaic-looking perfect 2pl. ending found in Vedic -*á* (in *vidá* ‘know’, as if from *-(*H*)é) in our reconstruction of the **h₂e*-set of endings.

In Jasanoff’s view, the 2pl. endings of Hittite and Tocharian do not continue the same preform. To explain the *hi*-conjugation -*šten(i)*, he (2012; 2019b: 46–7) proposes that the suffix -*s*- intruded into the preterite from the imperative and subsequently into the present. He argues that the sigmatic imperative can be traced back to a

subjunctive in **-se/o-*.⁸³ The locus of this intrusive *-š-* is supposedly the verb *nai-/nē-* ‘turn tr./itr.’ (< PIE **neh₁/3-*) which shows an unexpected *-š-* in the imperative middle: 2sg. *nešhut/ nišhut*, 2pl. *naišdumat* (both MH/MS) from ipv.act.2sg. **nēsi*, cognate of Vedic *neṣi* ‘lead!’ (Jasanoff 2012: 118–9).⁸⁴ From there, it spread to verbs of similar structure. This hypothesis is vulnerable as it relies on an inferred form to a single verb. Kloekhorst (2007) has shown that *-šten* and *-šteni* are older than the *nešhut*-forms, and since 2pl. *naišdumat* and the 2sg. variant *naišhut* (OH/NS) have the irregular vocalism *-ai-* (for expected *-e-*), it is probably more likely that these middle imperatives were based on the imperative 2pl. *naišten* rather than the other way around (Kloekhorst 2008: 600; Søborg 2020: 193).

In the Hittite version of the syncretism theory, the sigmatic 2pl. has of course been attributed to the s-aorist **-s-te*. Norbruis (2021: 140–1) proposes that the ending was introduced to solve the homophony between the 3sg. and the 2pl. **-(é)*. It is difficult to understand why the *s*-suffix was transferred along with the *mi*-ending; presumably **-tten(i)* would be able to mark the 2pl. sufficiently. Nonetheless, the homophony pointed out by Norbruis could explain the introduction of **-s-* into the 2pl., if it was already there in the 3sg.:

$$\begin{array}{l} hi\text{-}prs.3sg. \text{ } *{-}e\text{-}i : hi\text{-}prs.2pl. \text{ } *{-}e\text{-}i :: hi\text{-}prt.3sg. \text{ } *{-}s : hi\text{-}prt.2pl. \text{ } x \\ x = *{-}s \end{array}$$

Subsequently, 2pl. **-s* received **-tten* from the *mi*-conjugation, and since this ending would have been much better marked, it was extended to the present, eliminating **-eḫ vel sim*.

In Tocharian, the mechanical reconstruction of ^B*-sə*, ^A*-s* is PT **-sə* < **-su*, due to the lack of palatalisation. Malzahn (2012a: 48–9) has shown that the so-called mobile *o* in Tocharian B is exceptionally common in the preterite and imperative 2pl. In the imperative, ^B*-so* only alternates with ^B*-s*, never ^B*-sə*, while all three variants are found in the preterite. She takes this as an indication that the ending contained a stronger vowel than **ə* originally and reconstructs **-sas* ← **-sh₂e*. Jasanoff (2019b: 28–30)

⁸³ On the **si*-imperatives in Indo-Iranian from sbj.2sg. **-sesi*, see Szemerényi (1966). By asserting their existence in Anatolian, e.g., in Hitt. ipv.act.2sg. *paḥsi* ‘protect!’, Jasanoff (e.g., 1987a; 2012) pushes them into Proto-Indo-European. Against this view, see Oettinger (2007) who argues that the imperative formant is *-i* rather than *-si*.

⁸⁴ This is the most common reconstruction for the Hittite and Sanskrit verbs (Oettinger 1979: 460–1; LIV 2001: 450–1). For an alternative etymology **nh₁-oi/i-*, connected to **(s)neh₁-* ‘spin’, see Kloekhorst & Lubotsky (2014).

rejects Malzahn's reconstruction, but accepts the proposal of an ending $^B\text{-s}V$ with a full vowel. Connecting $^B\text{-so}$ with the Tocharian A imperative active 2pl. *päklyossū* (A370 b4), he reconstructs a possible preform $^*\text{-su}ō/\bar{a}$ which could give $^B\text{-so}$ with loss of $^*\text{-w-}$. For $^A\text{-su}$, he sets up a Sievers variant $^*\text{-su}uō/\bar{a}$. This form is reminiscent of the Vedic imperative middle 2sg. ending *-sya*, but that this should have ended up in the active 2pl. is highly unlikely.

The prevalence of $^B\text{-so}$ and the occurrence of $^A\text{-su}$ are curious and deserve some explanation, but that explanation does not necessarily have to affect the preterite 2pl. Since facultative apocope is not otherwise found in Tocharian B and since the locus of the full vowel is the imperative, it seems likely that it originated there and subsequently infiltrated the preterite 2pl. The reconstruction of the preterite 2pl. $^*\text{-sə}$ can therefore be maintained. Still, its deeper origin is not easy to ascertain.

Pinault (2008: 627) proposes a proportional analogy to the preterite middle:

$$\begin{array}{l} \text{prt.mid.2sg. } ^*\text{-ta} : \text{2pl. } ^*\text{-tə} :: \text{prt.act.2sg. } ^*\text{-sta} : X \\ X = ^*\text{-stə} > ^*\text{-st} > ^*\text{-s.} \end{array}$$

However, the sequence $^*\text{-stə}$ does not seem to be reduced in this manner. Final *-t* is lost after consonants in Tocharian B, e.g., $^B\text{päst}$ 'after, away' > *päs*, but that is a colloquial and late feature (Peyrot 2008: 67).

The s-aorist theory offers a more straightforward solution, namely that the ending is a combination of the s-aorist suffix and the perfect ending $^*\text{-e}$ as in Vedic *vidá* 'know' (Klingenschmitt 1994: 410; Peyrot 2013a: 418): $^*\text{-s-e} > ^*\text{-s-ə} \rightarrow ^*\text{-sə}$.⁸⁵ We would have to assume depalatalisation of the ending, which could have been analogical to the 2sg. $^*\text{-sta}$, the 3sg. $^*\text{-sa}$ or both.⁸⁶ Additionally, this explanation of the 2pl. requires the assumption that the s-preterite ending was extended as the general preterite ending. Unlike in the 2sg., there is an internal motivation for such a spread. If the 2pl. ending indeed was $^*\text{-e}$, it would develop into pre-PT $^*\text{-ə}$ which in an *a*-final stem would become nil. This would mean that the 3sg. and the 2pl. would have been identical in the *a*-preterite. After resolution of the clusters in the 2sg. ($^*\text{-Csta} >$

⁸⁵ The Paelignean 2pl. form *lexe* 'you have read' has been cited either as a possible parallel in $^*\text{-s-e}$ (Weiss 2020: 415) or a cognate of the ending $^*\text{-se}$ (Adams 1993b: 32; Søbørg 2020: 83–4), but the interpretation of this form is quite uncertain; see Weiss apud Jasanoff (2019b: 42 fn. 60) and the discussion in Søbørg (2020: 83–4).

⁸⁶ A more speculative option would be to reconstruct the ending $^*\text{-h}_e$, which is sometimes also done for Vedic. If it is true that $^*H$ had a blocking effect on Tocharian palatalisation, then the ending $^*\text{-sə}$ would be regular; see Ringe (1996: 18–9), and below 6.6.1.

-Casta) and 1pl. (-Csme > *-Cme), the interpretation of *-s- as a suffix would have been significantly weakened; in this situation, *-sa could have been interpreted as the 2pl. ending and introduced into the *a*-preterite to disambiguate it from the 3sg. In combination with the evidence from 2sg. *-sta and 3sg. *-sa, this explanation of the 2pl. is quite compelling.

From the point of view of the presigmatic aorist theory, 2pl. is the second example of coincidental sigmatisation in both Hittite and Tocharian. Together with the 2sg., this heightens the chance that the sigmatic ending in the 3sg. of both branches is likewise coincidental. Furthermore, it is possible to find language-internal motivations for the 2pl. ending, and it is therefore not necessary to posit a 2pl. desinence *-sV for PIE (contra Kloekhorst 2007: 499; Melchert 2015: 129; Søbørg 2020: 143–4; 191).

2.3.6. 3sg. TB -sa, TA -s, Hitt. -š

The crux of the comparison between Tocharian and Hittite is the 3sg. The *hi*-conjugation present 3sg. -i < *-e-i shows that the expected 3sg. ending *-e (cf. Ved. -a, Gk. -e) was continued into Anatolian, so the preterite -š has long been a diachronic mystery. Many scholars take *-st as the starting point for the Hittite ending with loss of final *-t (Sturtevant & Hahn 1951: 144; Eichner 1975: 91; Jasanoff 2003: 178, 192; 2019b: 36–7; Norbruis 2021: 140).⁸⁷ This is the regular phonological outcome, but, as was pointed out by Søbørg (2020: 182), it would mean that final *-st was treated differently in the *hi*- and *mi*-conjugations respectively, since the postconsonantal *mi*-ending *-t was strengthened to -tta (as if from mid.3sg. *-to, Kloekhorst 2008: 800–1). Such a scenario is not impossible, since the *hi*-form would still be marked with an *-s not belonging to the stem, but it implies a period of divergence between the *mi*- and *hi*-endings which otherwise only show convergence in Hittite. If the ending was *-s rather than *-st, this assumption can be avoided.⁸⁸

In the traditional view, *-st was taken over from the s-aorist within pre-Hittite because the inherited perfect ending *-e was lost. I find this scenario quite unlikely since there is no evidence for the s-aorist in Hittite otherwise; see 2.5. Other sources of *-st or *-s that could have supplied the *hi*-paradigm within Anatolian are difficult

⁸⁷ Even Melchert (2015: 129), who posits desinential 3sg. *-s, proposes a renewal to *-s-t already in Proto-Indo-European.

⁸⁸ The suggestion that 3sg. -š was originally transferred from the *mi*-conjugation 2sg., as per Dunkel (1977: 147) cannot be correct as the attestations show that it is the 3sg. that encroaches on the 2sg., not the other way around (Kloekhorst 2008: 687–8, 802).

to come by, indicating that the ending is an archaism of some kind. Suggested possibilities in the literature are either a paradigm with a suppletive sigmatic form (see 2.2.3) or a sigmatic desinence (see 2.2.4). Jasanoff (2019b: 39–42), who contends a desinential **-s*, bases his arguments primarily on the account by Melchert (2015). He rightly argues that Melchert's system is costly and inconsistent from the point of view of the **h₂e*-conjugation theory. However, Jasanoff (2019b: 42–3 fn. 62) also argues against the evidence for **-s* in Indo-Iranian adduced by Kümmel (2016; 2018), attributing it to various results of analogy. This rebuttal is less convincing; especially the explanation of Old Persian *-š* as a former optative **-īšt*, itself rebuilt from **-īt*, is problematic.

As in Hittite, there is no trace of **-t* in the Tocharian 3sg. ending ^B*-sa*, ^A*-s*, but it must be assumed at an earlier stage on structural grounds in both the presigmatic aorist and the *s*-aorist theory. The obvious phonological problem with this assumption is that **-st* (as well as **-s* for that matter) should be lost completely in final position in Tocharian. Kortlandt (1994: 61–2) proposes that the whole cluster was lost and then reintroduced from vowel-final verbs, e.g., **wəs-* 'give', **təs-* 'put'. Similarly, Peyrot (2013a: 506) suggests that **-s-* was reintroduced from the other forms of the paradigm. It is unattractive to assume that the sigmatic element was lost and reintroduced in the one form, the 3sg., where we actually find it in the active paradigm. A much simpler solution is presented by Ringe (1990: 191–2), namely that the loss of the cluster was gradual: pre-PT **prek-s-t* > **preks*. This preform must have been deemed insufficient at a certain point, leading to the introduction of **-a-* from the *a*-preterite.⁸⁹

The relative chronology of the introduction of **-a-* is tricky. In Peyrot's (2013a: 506–7) scenario, **-a* is introduced after the ending lost its final **-t*.⁹⁰ However, I do not see how **-a* on its own could have been interpreted as a desinence when it so clearly functions as a suffix in the *a*-preterite. Rather, at the time **-t* was lost in **-at*, the 3sg. ending must have been analysed as **-∅* as it still was synchronically in the Tocharian languages. And if the 3sg. was **-∅*, the 3sg. **preks* could also have been analysed as **preks-∅*, in which case there would be no point in renewing it. The conclusion must be that final **-t* was lost at different times, depending on whether it was preceded by a consonant or a vowel, and that **-at* was introduced from the *a*-preterite to the *s*-preterite between these two sound changes, when the 3sg. ending was not yet **-∅*.

⁸⁹ This type of development is also implicitly assumed by Jasanoff (2019b).

⁹⁰ This possibility is also entertained by Ringe (1990: 192).

Figure 2.1: Transfer of *-at to the s-preterite

root aor.3sg.	<i>*tér(h)h₁t</i> ⁹¹	>	pre-PT <i>*t'arkat</i> ‘emitted, let out’
			↓
s-aor.3sg.	<i>*prékst</i>	>	pre-PT s-prt <i>*preks</i> → <i>*preks-at</i> ‘asked’

The possibility that **t* > Ø/C_# happened before **t* > Ø/V_# is mentioned briefly by Ringe (1996: 75) without a definitive conclusion. With the present documentation of Tocharian, we will probably not be able to find conclusive evidence to support this supposition. However, it is a likely scenario that final clusters would be reduced before single final consonants were deleted. In other words, the gradual reduction of clusters from the right would result in forms with up to two final consonants, e.g., 3sg. **preks*, **wayk* (< root aor.3sg. **(h₁é)-ueigt* ‘moved away’; see below 2.6 and 3.4.3). At this stage of development, it would be reasonable to assume that final **-t* after a vowel would not yet be deleted; the presence or absence of a final cluster would be the deciding factor. A neat parallel to the reconstructed stage proposed here is found in Vedic, where the imperfect of root presents of consonant-final roots receives a “connecting *-ī-*” in the 2sg. and 3sg., extracted from *set*-root forms: e.g., ipf.act.2sg. *āsīs*, 3sg. *āsīt* ‘were, was’ next to expected 3sg. *ās* < **h₁eh₁est* ‘was’ (Macdonell 1910: 340).⁹²

The sigmatic 3sg. of the Tocharian s-preterite is formally consistent with all three possibilities proposed: the s-aorist 3sg. (Ringe 1990; Kortlandt 1994; Peyrot 2013a: 505–6), the s-imperfect 3sg. (Jasanoff 2019b: 58), or a form with the desinential 3sg. **-s(t)* (Melchert 2015). However, if **-s(t)* indeed was a 3sg. desinence in a paradigm of **h₂e*-endings from the earliest stage, it is unclear why the 3sg. needed remodelling to **-s-at* to begin with. A similar criticism can be levelled at Jasanoff’s theory: if the sigmatic suffix **-s* (< **-s-t*) was isolated in the active paradigm, why was it not reanalysed as a desinence within Tocharian? Solutions to this problem are conceivable so it is not devastating to either theory, but within the s-aorist theory, there is an explanation readily available: 3sg. **-s* could not have been analysed as an ending because the suffix was present in all forms of the paradigm at that point.

While the enigmatic Hittite *-š* in the *hi*-preterite 3sg. may reflect an archaic ending **-s* together with the Indo-Iranian endings **-s*, from a Tocharian point of view, it is easier to explain the 3sg. ending as a part of a fully sigmatic paradigm—i.e. the s-aorist—than from an isolated sigmatic form.

⁹¹ Reconstruction according to Kloekhorst (2008: 847); see below p. 68 fn. 132.

⁹² I would like to thank B. Nielsen Whitehead for reminding me of these Vedic forms.

2.3.7. The middle suffix **-sa-*

The *s*-prt.[3] middle has received relatively little attention in the diachronic treatments, probably because the suffix **-sa-* looks so overtly secondary. In the syncretism theory, the sigmatic middle can be accounted for directly from the *s*-aorist, with the initial accent found in most forms taken over from the perfect (Krause & Thomas 1960: 247). It is exactly here that the syncretism theory shows its weakness. The perfect had closer ties to the middle both semantically and formally,⁹³ so it is hard to understand why the sigmatic forms would have been employed in the middle in the first place. The functional motivation is missing.

According to Jasanoff (2019b: 45, 62–5), Tocharian is the branch that most faithfully preserves the presigmatic middle situation. He reconstructs two types of middles, an asigmatic type to the verbs with inchoative middles and a fully sigmatic type to verbs with self-benefactive middles; see Table 2.5.

Table 2.5: Middles in Tocharian A and PIE according to Jasanoff

active	self-benefactive middle (1)	inchoative middle (2)
<i>ñakäs</i> ‘destroyed’ ← <i>*nékst</i>		<i>nakät</i> ‘perished’ ← <i>*nóko</i> (← <i>*-e</i>)
<i>prakäs</i> ‘asked’ ← <i>*prékst</i>	<i>präksät</i> ‘asked for’ ← <i>*préksto</i>	

(Jasanoff 2019b: 45, 59, 62)

Within this framework, Anatolian only shows the outcome of the asigmatic middle. The CIE languages have generally extended the sigmatic middle to all verbs, but Jasanoff (2019b: 65) points to possible asigmatic remnants such as the Vedic passive aorist, e.g., *áhāvi* ‘is poured’, and Greek intransitive root aorist middles found in opposition to transitive *s*-aorists, e.g., act.3sg. ἔχευα ‘poured’, mid.3sg. χύτο ‘flowed’. Jasanoff discusses the possibility of the sigmatic pattern existing already before the split of Anatolia, but is hesitant to conclude anything due to the lack of evidence.⁹⁴

⁹³ Consider, e.g., the endings: PT mid.1sg. **-ay* ← **-a-y* < PIE **-h₂(e)*, 2sg. **-tay* **-ta-y* < PIE **-th₂e*, prt.1sg. PT **-w-a* ← **-a* < PIE pf.1sg. **-h₂e*, 2sg. **-s-ta* ← **-ta* < PIE pf.2sg. **-th₂e*.

⁹⁴ It seems that increasing involvement of the agent was not a primary function of the Hittite middle (Luraghi 2010: 149–50). Rather, reflexive and autocausative middles seem to have been reinforced with the particle *za* from OH onwards (Inglese 2020: 224–5). Whether this

Ringe (1990: 214–18) also points to this Greek pattern in his discussion of the Tocharian middle. He advocates that the s-aorist did not form a middle at all in PIE and that the Tocharian middles are either restructurings of old root aorists or late neologisms; likewise, Hackstein (1995: 246–7). This works well with the zero-grade of the middle paradigm but meets several issues with regard to the introduction of **-sa-*. Ringe suggests that the suffix was extracted analogically from the active 3sg., spreading first in transitive middles, while intransitive middles remained asigmatic. While it may be true that Greek root aorists and s-aorists are found in inchoative-causative alternation pairs, we also find middle s-aorists with “true” middle meaning (increasing the involvement of the agent) in Greek as well as Indo-Iranian; see also Malzahn (2010: 213). In addition, the fact that no single sigmatic middle form is reconstructible for PIE does not necessarily mean that such forms did not exist; it may be an artefact of attestation.

To explain the introduction of **-sa-* in the middle, Ringe (1990: 216–7) proposes a proportional analogy on the basis of the *a*-preterite, motivated by “a need to introduce active suffixal **-s-* into the mediopassive”. This hypothesis is quite problematic, especially in the relative chronology. The introduction of suffixal **-s-* could not have happened after the widespread loss of **-s-* in the active. If the active 3sg. was the only sigmatic form of the paradigm, and the middle was fully asigmatic, it is quite implausible that **-s-* would be analysed as either the marker of transitivity, as argued by Ringe (1990: 218), or, more generally, as a marker of the s-preterite. Rather, an asigmatic middle would have suited the active paradigm admirably: act.1sg. **prek-əwa*, 3sg. **prek-sa* ‘asked’, mid.1sg. **prək-ay*, 3sg. **prək-te* ‘asked for oneself’. The only time **-s-* could have been introduced into the transitive middle would be before the loss of **-s-* in the active. This, in turn, makes it less likely that **-a* from the 3sg. was transferred at the same time, because **-s-* on its own would still be clearly analysable as a suffix.

It follows from Ringe’s scenario that the development of a sigmatic middle paradigm to the s-aorist happened independently in Tocharian, Greek, and Indo-Iranian; what is more, it seems to have happened precisely in verbs with self-benefactive middles. Setting aside what the active may have looked like, a scenario like those of Jasanoff (2019b: 45, 62–5) and Kortlandt (1994: 63) must be considered much more likely for the middle, namely that some verbs formed fully sigmatic middles already in the proto-language. It is conceivable that there was a gap specifically in verbs with labile semantics, causing the suppletive behaviour observed

is an archaism or innovation of the Hittite middle is beyond the scope of this chapter.

in Indo-Iranian, Greek, and Tocharian. Whether the asigmatic middle forms in these branches truly reflect the same proto-formation will be discussed in subsection 4.3.5.

From a fully sigmatic middle, we can begin to understand how the s-prt.[3] middle developed. The first and perhaps most important observation is that the expected middle 1sg. contains a sequence *-sa-:

$$*prék-s-h_2(e)^{95} > \text{pre-PT } *pr'æk-s-a \rightarrow *pr'æk-s-ay$$

Secondly, we can note that the paradigm would preserve *-s- in all forms of the paradigm; see Table 2.6. In the 1pl. and 3pl., the heavy cluster *-Csmte and *-Csnte would certainly cause the nasals to vocalise: *-Csəmte and *-Csānte. This means that we would have the same distribution of allomorphs in the paradigm as in the thematic conjugation: 1sg., 1pl., and 3pl. with *-sV-, 2sg., 3sg., and 2pl. with *-əs-. It is at least plausible that levelling took place first in the forms with *-sV-: 1pl., 3pl. *-sə- → *-sa-. Likewise, the active 3sg. *prek-sa-Ø could have exerted some influence, especially on the middle 3sg. In the active, I have argued that the *-s was most likely reanalysed as part of the ending in the 2sg. Such a reanalysis is less likely in the middle than in the active, since the *a*-preterite middle 2sg. would not be sigmatic: *-a-tay (unlike the *a*-preterite active 2sg. *-as-ta). It is possible that the *a*-preterite middle was instrumental in the spread of the *-sa-formant as well, since all middle endings are preceded by an *-a- in that paradigm.

Table 2.6: Preservation of *-s- in the s-preterite middle

	pre-PT		levelling		levelling
1sg.	*præk-s-ay	>	*praksay	>	*praksay
2sg.	*præk-s-tay	>	*præk-əs-tay	→	*præk-sa-tay
3sg.	*præk-s-te	>	*præk-əs-te	→	*præk-sa-te
1pl.	*præk-s-ṃte	>	*præk-sə-mte → *præk-sa-mte	>	*praksamte
2pl.	*præk-s-t(ʾə)	>	*præk-əs-t(ʾə)	→	*præk-sa-t(ʾə)
3pl.	*præk-s-ṇte	>	*præk-sa-nte → *præk-sa-nte	>	*praksante

⁹⁵ On the reconstruction of the middle 1sg. ending, see, e.g., Kortlandt (1981), Yoshida (1985), Jasanoff (1994). The Tocharian reflex *-a can reflect either *-h₂ or *-h₂e.

There are thus several mechanisms by which **-sa-* would develop as a suffix in the middle, if we assume that the paradigm was already sigmatic. While I do not agree with his reconstruction of the asigmatic s-aorist middle, it is certainly a point in favour of the sound changes proposed by Ringe (1990) that they end up predicting why the middle is sigmatic, while the active is not.

2.3.8. Ablaut

The most common ablaut in the Hittite *hi*-conjugation is $\bar{a}/\emptyset$, e.g., *au-ⁱ/u-* ‘see’, *dā-ⁱ/d-* ‘take’, *wai-ⁱ/wi-* ‘cry’, calling to mind the ablaut of the PIE perfect **-ó/∅-*. However, it was already noticed by Sturtevant (1933: 239–40) that some verbs show $\bar{a}/e$ -ablaut as if from **-o/e-* instead. This is an foundational observation for the **h₂e*-conjugation hypothesis (Jasanoff 1979: 85–7; 2003: 69). For several of these verbs, Kloekhorst (2012: 153–6) has shown that the *e*-grade progressively replaces the former *a*-grade from OH to NH, e.g., prt.act.3pl. *a-re-er* (OH), *e-re-er* (MH, NH) ‘arrived’, prs.act.2pl. *ša-ak-te-e-ni* (OH), *še-ek-te-e-ni* (MH, NH) ‘know’. This leaves a fairly limited amount of verbs, for some of which the *e*-grade, written either *e* or *i*, may express an anaptyctic vowel [i]; see Kloekhorst (2012; 2014). The evidence for **o/e*-ablaut is thus not assured in Anatolian.

Another feature of the **h₂e*-conjugation aorists is that the ablaut scheme differs from that of the **h₂e*-present. Melchert (2013: 143–4) argues on structural grounds that the strong stem of the **h₂e*-aorist is found in the 1pl. and 2pl. as well as the singular, since such a pattern is found in the Vedic root aorist. Jasanoff (2019b: 44 fn. 63) follows Melchert by reconstructing this type of ablaut for the presigmatic aorist—with the important addition of an $\bar{e}$ -grade sigmatic form in the 3sg; see Table 2.4. It is important to note, however, that the strong stem is limited to the singular in ablauting verbs in the Hittite *hi*-conjugation, and is thus not found in the 1pl. and 2pl. In order to arrive at the Hittite ablaut scheme in verbs from **h₂e*-aorists, Melchert (2013: 142–3) is forced to assume that the aorist was altered by analogy with **h₂e*-presents.⁹⁶

The mechanical reconstruction of the Tocharian ablaut shows **ē/∅*-ablaut in s-prt.[3] with the strong stem of the entire active and **o/∅*-ablaut in the root sbj.[1] with the strong stem limited to the singular. From the reconstruction in Table 2.4 (p. 57), it is not trivial to get to the Tocharian paradigm. We must assume that $\bar{e}$ -grade

⁹⁶ There is no evidence of 3sg. $\bar{e}$ -grade, but the elimination of it could be considered trivial, since it is so isolated in the paradigm; see Table 2.4.

has spread from a single form—albeit an important one—to every form of a paradigm that is dominated by **o*-grades. The motivation for this would be to distinguish the preterite from the emerging root subjunctive which kept the *o*-grade (Jasanoff 2019b: 54). This is plausible, but we should keep in mind that the two categories were already distinguished by endings. Furthermore, we have to assume that the levelling of *ē*-grade happened independently in the Tocharian *s*-preterite and the CIE *s*-aorist.

Strictly speaking, there is no evidence for *ē*-grade limited to the 3sg. This reconstruction is based on the fact that the 3sg. is sigmatic and thus special in the paradigm, combined with the observations that there is evidence of *o*-grade in Hittite and both *o*- and *ē*-grade in the Tocharian root *sbj*. [1] and *s-prt*. [3]. Additionally, the ablaut of the **h₂e*-conjugation aorist with *o*-grade in all forms of the active except the 3rd person is not directly attested in any Indo-European language.

From the point of view of the *s*-aorist theory, the active paradigm of the *s*-preterite is in complete agreement with the Indo-Iranian *s*-aorist indicative, reflecting PIE *ē*-grade throughout. In the middle paradigm, however, the Tocharian reflex of a zero-grade is found, i.e., non-palatalising **-ə-*. This flies in the face of both the *s*-aorist and the **h₂e*-conjugation theory, where the middle is reconstructed with *e*-grade (→ Tocharian palatalising *ʾə*-grade), and has recently prompted Søborg (2020: 125) to suggest that a zero-grade weak stem was original in the “Indo-Tocharian” *s*-aorist. This elegantly accounts for the discrepancy in ablaut between Tocharian and the CIE languages. However, Søborg (2020: 4) employs a cladistic approach, that is, he uses the position of Tocharian itself to argue for the antiquity of the ablaut pattern of the *s*-preterite; see 1.2.5 on the cladistic approach to reconstruction. Without the assumption that Tocharian was the second branch in the family tree, it is difficult to see why the ablaut of the Tocharian *s*-preterite should be weighed heavier than, e.g., that of the Greek or Avestan *s*-aorists.

The ablaut of the *s*-middle in Vedic is rather complicated with 30 forms showing full-grade and 27 showing zero-grade, e.g., aor.ind.act.1sg. *avitsi* to *vid-* ‘find’, *ābhutsi* to *budh-* ‘awaken’ (Macdonell 1910: 379; Narten 1964: 23). In some cases, however, the zero-grade middle *s*-aorists are isolated, found next to root aorists (active and middle), and they are overrepresented in the 3pl. They are therefore unlikely to be archaic, compared to the full-grade middle *s*-aorists, which are more often found next to active *s*-aorists (Narten 1964: 23–36; Søborg 2020: 10–2). Rasmussen (2002: 380) also argues that the zero-grade in the middle is more likely to have been introduced secondarily from other athematic middle paradigms. Due to the distribution of the zero-grade in Vedic, it seems unlikely that Rasmussen is right in projecting this

analogy back to Proto-Indo-European. Rather we may consider these Vedic middles a useful parallel to the Tocharian situation, which could also be secondary. In that case, we should consider when the zero-grade was introduced in the s-preterite.

First, let us examine the evidence provided by s-prt.[3].mid.3sg. *tasāte* ‘put’ to ^B*tes-/təs-/tas-* ‘put’ (< PIE **d^heh₁-*). If we take the form at face value, it places the zero-grade in the middle at an extremely early date before the vocalisation of the laryngeals: (post-)PIE **d^hh₁-s-* > PT **ta-s-*. However, despite the many archaic features of this verb in Tocharian, ^B*tasāte* cannot continue an original s-aorist middle. The root **d^heh₁-* certainly formed a root aorist in Proto-Indo-European, e.g., Ved. aor.ind.act.3sg. *ádhat* ‘put’, Gk. 1pl. *ἔθεμεν* ‘put’,⁹⁷ Arm. *ed* < **d^héh₁-/d^hh₁-* (LIV 2001: 136–7), which in Tocharian should have resulted in **tē-/ta-* > PT **ce-/ta-*. We do not find either of these stem variants attested, but they do reflect the exact ablaut of the s-preterite in this verb. In accordance with Harðarson (1993b: 79), I think it is highly likely that the root aorist was remade into an s-preterite at an early stage in the language, because the vocalism of the strong stem of the root aorist and the s-aorist merged in roots with final **h₁* like **d^heh₁-*. From there, the **-s-* could spread to the weak stem in the middle.

Figure 2.2: Development of the active and middle stem of **d^heh₁-* ‘put’⁹⁸

act.sg./pl.	<i>*pēk^w-s-</i>	→	<i>*pēk-s-</i>	>	<i>*p’ek-s-</i>	
					↓	
act.sg.	<i>*d^héh₁-</i>	>	<i>*tē-</i>	→	<i>*t’e-s-</i>	> <i>*t’es-</i> > <i>*t’es-</i>
					↓	↓
act.pl.	<i>*d^hh₁-</i>	>	<i>*ta-</i>		→ <i>*ta-s-</i>	→ <i>*t’es-</i>
					↓	
mid.sg./pl.	<i>*d^hh₁-</i>	>	<i>*ta-</i>		→ <i>*ta-s-</i>	

⁹⁷ Greek mostly show the *k*-extended aorist; cf. 1sg. *ἔθεξα* ‘put’. See Harðarson (1993b: 146–7) for the compound *ἀνέθῃ*.

⁹⁸ **pek^w-* ‘cook’ is used as an example of a root forming an s-aorist.

The outcome of the sigmatisation in Figure 2.2 does not fully account for the attested paradigm of ^B*tes-*, ^A*cas-*, as the **-s-* is a part of the root, not the suffix of the preterite stem: s-prt.[3] act.3sg. ^B*tessa*, ^A*casäs* ‘put’ < PT **t’es-sa*. We must therefore assume that the original sigmatic suffix was reanalysed as part of the root, and that the 3sg. was subsequently renewed with an overt s-preterite ending **-sa*. Both these changes can be understood as the result of the phonological structure of the root **d^{he}h₁-* > pre-PT **tē-*. Since the root was vowel-final, the sigmatic suffix would not be lost phonologically in any forms, unlike most roots of the structure **CeC-* > **CaC-*. Another matter which must be addressed is the motivation for the rebuilding of the stem in the first place. In subsection 2.5.1, I will return to these two issues in more detail.

For the time being, we may conclude that the admittedly very early zero-grade of **tas-* does not testify to the ablaut of the s-aorist, but rather shows the expected reflex of a Proto-Indo-European root aorist middle. An important base-line assumption of this proposal is of course that the active paradigm of the s-preterite was fully sigmatic when **t’e-/*ta-* adopted its morphology.⁹⁹

This proposal also widens our possibilities to have a non-palatalising *ə*-grade introduced in Tocharian, since it no longer needs to happen before vocalisation of laryngeals. If we place it after the grammaticalisation of palatalisation, there are several models which could have contributed to the loss of palatalisation in the s-preterite middle: the *a*-preterite with *ə*-grade in the active singular and *ə*-grade elsewhere including the middle,¹⁰⁰ reflecting PIE **e/Ø*-ablaut, and the inchoative-causative verbs with an s-preterite with *e*-grade in the active and a root preterite with non-palatalising *e*-grade in the middle (class [o]). Additionally, the s- and *sk*-presents with original zero-grade could have put pressure on the s-preterite middle to depalatalise its root initial.

The discussion in this section has shown that the s-preterite and the *hi*-conjugation preterite hardly agree on any aspect of ablaut. Rather, the s-preterite ablaut is much closer to the s-aorist ablaut attested in Indo-Iranian. The evidence from the subjunctive of class [1] has not been discussed in this section, but will be considered in section 2.4.

⁹⁹ We can thus explain the *a*-grade in the prs.-sbj.[2] **tas-ə/e-*, e.g., 3pl. ^B*tāseṃ*, ^A*tāse* ‘put’, quite neatly as analogical to the middle, without needing to assume an original athematic s-present; *pace* Kortlandt (1994: 63–4).

¹⁰⁰ Preterite class [1] subclass 4, according to Malzahn’s (2010: 122) classification.

2.3.9. Function

It is well established that the Hittite *mi*- and *hi*-conjugations are not distributed according to function, but are lexically or morphologically determined (Oettinger 1979: 39 *et passim*; Hoffner & Melchert 2008: 175; Kloekhorst 2008: 118). For Jasanoff (e.g., 2003: 8–9), this is one of the pivotal reasons for rejecting the perfect theory as an explanation for the Hittite *hi*-conjugation, and it follows that projecting the conjugation back to PIE fixes this problem. This is not the case for the presigmatic aorist theory, where function plays a central role. The theory predicts two different preterite active 3sg. endings distributed according to function: stative-intransitives with 3sg. **-e*, and transitives (of both the **prek*- and **nek*-type) with 3sg. **-st*. There is, however, no evidence for this distinction in Hittite, where we find 3sg. *-š* in all *hi*-preterites.¹⁰¹

On the other hand, the Tocharian s-preterite is associated with transitivity. While there are intransitive verbs that form s-preterites, the majority are transitive, and it is found in the oppositional s-transitive pattern; see 2.1.1. In the Indo-European languages that preserve the s-aorist, it also seems to have been connected to transitivity; we even find oppositional pairs of aorists in some verbs:

	intransitive root aorist	transitive s-aorist
<i>*pleh₁</i> -	Gk. πλήτο ‘became full’ Ved. <i>aprās</i> ‘has filled’	Gk. ἐπλήσα ‘filled’
<i>*steh₂</i> -	Ved. <i>ásthāt</i> ‘has stepped’ Gk. ἔστην ‘stepped, placed myself’ Arm. <i>er-ṭ’a</i> ‘walk’	Gk. ἔστησα ‘put’

This obviously does not contradict the presigmatic aorist theory which also posits a common origin for the s-preterite and the s-aorist, but we can conclude that with respect to function Tocharian fits better with the CIE s-aorist than the Hittite *hi*-conjugation.

¹⁰¹ Regardless of the origin of the *hi*-conjugation, it is unlikely that the ending **-e* was supplanted by **-s(t)* until after prs.3sg. **-eḷ* > **-i*, since **-e* and **-eḷ* would have been in a completely regular primary/secondary relationship; cf. *hi*-prs.1sg. **-h₂eḷ* ~ *hi*-prt.1sg. **-h₂e*, *mi*-prs.3sg. **-ti* ~ *mi*-prt.3sg. **-t*.

2.3.10. Discussion

At this stage, it might be useful to tally up the conclusions of the previous sections and compare the advantages and disadvantages of the competing explanations of the *s-prt*. [3]. The strong suit of the presigmatic aorist hypothesis is the formal similarity found in the endings of the Hittite *hi*-preterite and the Tocharian *s*-preterite. Especially the asigmatic endings, 1sg., 1pl. and 3pl. are easily derived from the presigmatic proto-paradigm. Still, there are a few formal discrepancies that need to be explained: the mysterious **w*-element in the Tocharian 1sg. and the different allomorphs in the Hittite and Tocharian 3pl. There is also the more structural question of how the **h₂e*-conjugation endings became preterite endings in Tocharian, if the perfect did not become a preterite.

The comparison between the Hittite and the Tocharian sigmatic 3sg. is fairly straightforward, although the derivation from a preform **prēkst* is easier in Tocharian than in Hittite. The only assumption needed is that **-a(t)* was introduced from the *a*-preterite in Tocharian (which any theory that does not want to propose a suffix **-sH-* for Proto-Indo-European has to assume). The Hittite form is more difficult: firstly, the ablaut reflects **o*-grade, and secondly, it is curious that **prēkst* was treated differently from other 3sg. forms in **-st*, which surface as *-šta* in Hittite. When it comes to the 3sg., it is also worth investigating the argument by Jasanoff (2003: 177), that it is too much of a coincidence that the 3sg. turned up sigmatic in both languages. Importantly, we can see in the 2sg. and the 2pl. how forms of a paradigm can come to look like each other in very specific ways by coincidence; especially Hitt. *-šta*, TB *-sta* illustrate this point well. It is impossible to derive these two endings from the same source, yet they are identical. If the likeness of the 2sg. and 2pl. is coincidental, why not that of the 3sg.?

As argued by Jasanoff (2019b: 45), the easiest way to explain the sigmatic middle in Tocharian, e.g., ^B*parksate*, ^A*präksāt*, is to assume that it descends from a fully sigmatic paradigm; *pace* Ringe (1990: 214–18). The evidence from Tocharian seems to back up the proposed functional difference between the inchoative middle and the self-benefactive middle, although it is important to note that it is not supported by comparison with Hittite, but rather with CIE languages such as Vedic and Greek. There are also other ways to interpret the asigmatic middle forms, e.g., 3sg. ^A*nakāt* ‘perished’ as I will argue for below; see 4.3.5. The ablaut paradigm reconstructed by Jasanoff (2019b: 44) cannot be confirmed by the comparative data in either branch, but is structurally inferred. Likewise, there is no particular overlap between the function of the *hi*-conjugation and the *s*-preterite.

On the two latter points, the *s*-aorist hypothesis works better; the Proto-

Tocharian s-preterite and the Indo-Iranian s-aorist actually agree exactly on the steady $\bar{e}$ -grade of the active paradigm, which can either be taken as common inheritance or parallel developments from $*\bar{e}/e$ -ablaut. The function of the s-preterite as an oppositional transitive formation is also paralleled in other CIE branches. To get to the asigmatic endings, the s-aorist hypothesis obviously entails more assumptions. Especially the sound change $*Csr > *Cr$ is without parallel and must be considered very speculative. However, there does not seem to be any direct counterevidence to them and we know that $*s$ in clusters can be reduced, e.g., in $*tsk > *tk$ (Melchert 1977 [1978]). As I mentioned above (2.3.7), it is an advantage that these sound changes predict that the middle would remain sigmatic. One important caveat is that not all verbs were consonant-final in pre-Proto-Tocharian; there should be vowel-final roots which would keep their suffix $*-s$ - into attested Tocharian. In 2.3.8, I argued that the root $*d^heh_1-$ $> *t'e-$ ‘put’ could have been sigmatised analogically in pre-Proto-Tocharian, which of course requires the assumption that there was a fully sigmatic paradigm in the active at that time; see 2.5.1.

All in all, the features of the CIE s-aorist can explain the facts of the Tocharian s-preterite better than those of the Hittite *hi*-conjugation preterite, with some important changes to the original hypotheses of Ringe (1990), Kortlandt (1994; 2015b), and Peyrot (2013a: 503–8). The first is the proposal that $*-t$ was lost at different times in pre-Proto-Tocharian depending on whether the preceding sound was a consonant or a vowel. This is an assumption which cannot at present be substantiated, since both were eventually lost, but it does allow us to explain how the s-preterite 3sg. emerged as PT $*preksa$ ($\leftarrow *preks-at \leftarrow *preks < *prekst$) instead of expected $*prek$. Below, I will argue that the same assumption can explain the productivity of the suffix $*-a-$ as a preterite marker more generally; see 2.6. Furthermore, if we accept that the perfect did become a preterite in pre-Proto-Tocharian, some of the preterite endings can be explained as the result of stacking, which became necessary when the eventive primary and secondary endings merged: 1sg. $*-w-a$, 2sg. $*-s-ta$. In the plural, they rather seem to have been replaced. I think it is quite likely that the 2pl. $*-sə$ continues the s-aorist suffix, which became interpretable as an ending because the inherited perfect 2pl. $*-é > *-ə$ was too weak. See Table 2.7 for an overview of the developments proposed in this section

One very important factor has not been discussed so far is the stem pattern associated with the Tocharian s-preterite, in particular the root subjunctive of class [1], and how this fits in with the current discussion. This will be the topic of the following section.

Table 2.7: Proposed development of the s-preterite

	1. PIE	2.	3.	4.	5.	6.
1sg.	<i>*h₁e-préksm̥</i>	>	<i>*pr'eksam</i>		→ <i>*pr'eksə-w-a</i>	
2sg.	<i>*h₁e-préks</i>	>	<i>*pr'eks</i>		→ <i>*pr'eks-ta</i>	
3sg.	<i>*h₁e-prékst</i>	>	<i>*pr'ekst</i>	> <i>*pr'eks</i>	→ <i>*pr'eks-at</i>	> <i>*pr'eksa</i>
1pl.	<i>*h₁e-préksme</i>	>	<i>*pr'eksm'a</i>		> <i>*pr'eksm'a</i>	
2pl.	<i>*h₁e-prékste</i>	>	<i>*pr'ekst'a</i>		→ <i>*pr'eks-'a</i>	
3pl.	<i>*h₁e-préksnt</i>	>	<i>*pr'eksant</i>	> <i>*pr'eksan</i>	→ <i>*pr'eks-ar</i>	
	7.	8.	9.	10.	11.	12. PT
1sg.				> <i>*pr'eks-awa</i>	→ <i>*pr'ek-awa</i>	> <i>*pr'ekawa</i>
2sg.	> <i>*pr'ek-asta</i>			> <i>*pr'ek-asta</i>		> <i>*pr'ekasta</i>
3sg.				> <i>*pr'ek-sa</i>		> <i>*pr'eksa</i>
1pl.		> <i>*pr'eksmə</i>	> <i>*pr'ekmə</i>	> <i>*pr'ek-mə</i>		> <i>*pr'ekmə</i>
2pl.		→ <i>*pr'ek-sə</i>		> <i>*pr'ek-sə</i>		> <i>*pr'eksə</i>
3pl.		→ <i>*pr'eks-rə</i>	> <i>*pr'ekrə</i>	> <i>*pr'ek-rə</i>		> <i>*pr'ekrə</i>
1.	PIE s-aorist indicative active			7.	Epenthesis in the 2sg.	
2.	Initial phonological changes into pre-PT			8.	2pl. suffix and ending <i>*-s-'a</i> reanalysed as ending and depalatalised <i>*-sə</i>	
3.	<i>*t > Ø/C_#</i>			9.	<i>*s > Ø/C_m</i> , possible <i>*s > Ø/C_r</i>	
4.	Introduction of <i>*-at</i> in the 3sg.			10.	Reanalysis of the stem <i>*pr'eks-</i> → <i>*pr'ek-</i> outside the 1sg.	
5.	Stacking of pf. endings in the 1sg., 2sg.; replacement of prs.-aorist endings by pf. endings in the 2pl., 3pl.			11.	Analogical loss of <i>*-s-</i> in the 1sg.	
6.	<i>*t > Ø/V_#</i>			12.	PT s-preterite active	

2.4. The root subjunctive [1]

It is not really possible to compare the stem pattern of Tocharian with Hittite because their verbal systems are so different. The Hittite verb is monothematic, meaning that all forms of a given verb are expressed with a single stem. New verbs, e.g., imperfectives, factitives, and causatives, can be derived from this stem through suffixation (Hoffner & Melchert 2008: 173, 175). Still, the tight relationship between the Tocharian root *sbj.[1]* and *s-prt.[3]* really speaks in favour of a shared origin of the two, making this stem highly relevant to the present discussion.

The more traditional interpretation of the root *sbj.[1]* is that it should be identified historically as the Proto-Indo-European perfect (Adams 1988: 78–80; Winter 1994a: 305–9; Rasmussen 1997: 145–6; 2002: 379; Hackstein 2004c: 92–3; Kim 2007a: 188; 2009b: 26 fn. 30).¹⁰² The strongest argument in favour of this theory is the root gradation, **CeC-/ *CəC-*, which is identical to that of the *a-sbj.[5]*, **CeC-a-/ *CəC-a-* (Cowgill 1967), and is a formal match with the ablaut of the Proto-Indo-European perfect **o/∅*. Winter (1994a: 306) suggests that the initial accent of the subjunctive was the result of a reduplication syllable, given up after the accent was fixed.

While these are certainly formal advantages of the perfect origin, there are also some significant disadvantages, discussed in detail by Peyrot (2013a: 403–4). Firstly, lack of palatalisation and initial accent are both morphologically dependent in Tocharian B and could have been regularised secondarily. Secondly, the function of the subjunctive is quite far removed from the function of the perfect, so one would have to assume that the perfect merged in function with the aorist; thus Rasmussen (1997: 146). But in that case, it is unclear why exactly it was the former perfect stem that was chosen as the base for the subjunctive and not other preterite stems from the former aorist. If the perfect is also reflected in the non-palatalised forms of the *s-preterite*, this development becomes even more incomprehensible. There is also the issue that if the perfect endings became preterite endings, while the present-aorist endings marked the present and subjunctive, the perfect theory essentially posits that aorists and perfects end up in Tocharian with their endings swapped: i.e., the preterite was the aorist stem with perfect endings and the subjunctive was the perfect stem (missing its reduplication) with present-aorist endings. It is preferable to connect *sbj.[1]* etymologically with the *s-prt.[3]* as former aorist forms (Jasanoff 2019b: 50; Kortlandt 1994: 63; Peyrot 2013a: 407–8, although from different proto-

¹⁰² See Malzahn (2010: 306) for further references.

formations).¹⁰³ See Pinault (2008: 571) for a position in between.

One option is to derive the root *sbj*. [1] and *s-prt*. [3] from a single paradigm. Malzahn (2010: 267–8) proposes that secondary presents were created to former aorists in analogy with the relationship between Indo-European presents and imperfects, a process she calls “the *tēzzi* principle”.¹⁰⁴ She proposes that after the Proto-Indo-European subjunctive had been lost, these new present indicatives as well as other inherited presents were employed to fill its gap. There are some issues with this proposal in the deeper levels of development in the Tocharian verbal system. First of all, the verbal systems of Hittite and Tocharian are quite different. Instead of the monothematic system of Anatolian, Tocharian keeps stem alternation as way to distinguish present and preterite, so there was not the same need for new presents formed to aorists. Malzahn’s assumption (2010: 267) that the imperfect and aorist merged in Tocharian is debatable; verbs like PT **pər-* ‘carry’ and **ak-* ‘lead’ testify against this by using suppletion to express their preterite, rather than simply using their old imperfect. Finally, it is worth asking why we do not find any *tēzzi*-presents (which turn into the root *sbj*. [1] and the *a-sbj*. [5], according to Malzahn) with their original indicative meaning.

Jasanoff (2019b: 50, 54) proposes that the root subjunctive reflects the asigmatic *o*-grade forms that split from the presigmatic aorist. This fits the strong ablaut **e < *o* and lack of reduplication, although levelling of *ə*-grade in the weak stem has to be assumed, and of course the lack of a sigmatic suffix. However, a major necessary assumption is that the **h₂e*-endings of this stem were replaced with primary **mi*-endings.¹⁰⁵ This could be attributed to influence from subjunctives from **mi*-conjugated aorists, but since these, according to Jasanoff (2019b: 51–2), became entangled with subjunctives from **h₂e*-conjugated aorists of the stative-intransitive

¹⁰³ Likewise, the *a-sbj*. [5] should share its origin with the *a-prt*. [1], although admittedly some special pleading is necessary to get the attested ablaut **e/ə* and the initial accent; see, e.g., Peyrot (2013a: 531–2, 548–53).

¹⁰⁴ The term is inspired by Anatolian where verbs forming root aorists in other Indo-European languages exhibit no present tense restriction. Thus the Hitt. *prs.act.3sg. tēzzi* ‘puts’ may be a neologism formed on the original non-presentic aorist **d^heh₁-t* ‘put’ > Hitt. *prt.act.3sg. tēt* (Eichner 1975: 81; Jasanoff 2003: 3). It is also possible to view the presents of these verbs as original and the lack of presentic forms in the aorist as a post-Anatolian innovation (Friis 2018: 100–1; Søbørg 2020: 147).

¹⁰⁵ This relates to a more general critique of the **h₂e*-conjugation theory, namely the apparent volatility of the **h₂e*-set. If the two conjugations were more or less symmetrical in Proto-Indo-European, it is striking that only the **mi*-conjugation remained stable in the ancient Indo-European languages, such as Vedic, Avestan and Greek.

type, it is not clear why the **mi*-endings would be the dominant endings in this category. This touches on the problem that **h₂e*-conjugation theory in Tocharian does not explain why the **mi*-set ended up as present endings, while the **h₂e*-set became preterite endings in Tocharian, as mentioned above (2.3.1).

Kortlandt (1994: 62–3) and Peyrot (2013a: 407–8, 503–7) also argue for an aorist injunctive origin, but from the fully sigmatic aorist. This paradigm would not have been marked with the new preterite endings but retained the inherited present-aorist endings. Assuming that the primary and secondary endings merged before **Csm* > **Cm* and loss of **-s(C)* in final position, most forms would lose their suffix by regular sound change (Peyrot 2013a: 505); see Table 2.8. The 2pl. and 3pl. are the only forms that would keep the suffix, 2pl. **prākstə* > **prākastə*, 3pl. **prāksant* > **prāksan*, which can reasonably be explained away by analogy.

Table 2.8: Loss of **s* in s-aorist injunctive

	pre-PT	<i>*t</i> > Ø/C_#	<i>*s</i> > Ø/_#	<i>*s</i> > Ø/C_m
2sg.	<i>*preks</i>		>	<i>*prek</i>
3sg.	<i>*prekst</i>	> <i>*preks</i>	>	<i>*prek</i>
1sg.	<i>*prāksma</i>			> <i>*prekmə</i>
1pl.	<i>*prāksma(sə)</i>			> <i>*prekmə(sə)</i>

There are two drawbacks with the Kortlandt-Peyrot account. The first is that it presupposes the existence of the augment. Structurally, this would be advantageous since it would give a straightforward explanation for the distinction between preterite and subjunctive, namely that it was inherited. However, there is little to no evidence for the augment in Tocharian, which can be mechanically projected as a prefix **yā-* < **h₁e-*; cf. PIE **h₁ésh₂ōr* ‘blood’ > PT **yāsar* > ^B*yasar*, ^A*ysār* ‘blood’ (Hackstein 2017: 1310). Rasmussen ([1992] 1999a: 568–70; 2002: 378) and Kortlandt (1996: 172) have suggested that the augment can be indirectly retrieved from Tocharian A lengthened grade imperfects such as ipf.mid.3sg. *pārat* ‘gave’, *śālpāt* ‘obtained’, act.3sg. *lyāka* ‘saw’, from augmented Proto-Indo-European imperfects to **h₁-*initial root presents, either **h₁eh₁és-* ‘was’ or **h₁eh₁éj-* ‘went’.

Neither account is unproblematic. Kortlandt’s (1996) proposal relies on the interpretation of the imperfect ^B*yey-*, ^A*ye-* ‘went’ < PT **yey-* as a former Proto-Indo-European imperfect, which lent its lengthened grade first to ^B*sey-*, ^A*še-* ‘was, were’ < **sey-*, then to the Tocharian A lengthened grade imperfects. However, Pedersen’s

(1941: 207) interpretation of PT **šey-*, **yey-* as old optatives is preferable; see the discussion in 6.4.1. Rasmussen ([1992] 1999a: 569–70) proposes that imperfects of the type *^pārat* received their lengthened grade directly from the imperfect of **h₁es-* ‘be’: **h₁e-h₁és-* > **ēs-* > PT **yes-*. The mechanism of this analogy is somewhat anachronistic; he suggests that the inherited present **pār’ə/e-* < **b^here-* ‘carry’ was interpretable as a root present in Tocharian A and could therefore be modelled on the root present **h₁és/*h₁s-*, ipf. **h₁e-h₁és/h₁s-*. This, however, was probably never possible, as **pār-* ‘carry’ still inflects as a thematic present in Tocharian A. It is also important to note that neither the full-grade nor the lengthened grade outcome of **h₁es-* is attested in Tocharian. The evidence for the augment is thus quite speculative.

For the injunctive hypothesis to work, we must find a reason why the distinction between the preterite from the aorist indicative and the subjunctive from the aorist injunctive went from one marking strategy to another: the presence or absence of the augment → the use of preterite and present endings. We may note that prefixation is a very limited phenomenon in Tocharian; in the verbal domain, it is only found in the imperative **pə-*, e.g., ipv.sg. *^Bpyām*, *^Apyām* ‘do!’.¹⁰⁶ Thus it is possible that Tocharian went through a period of ousting inherited prefixes, in which the augment could have been lost. The lack of prefixes can be considered an areal feature, as many East-Eurasian languages lack prefixation (Peyrot 2019b: 73). This makes the loss of the augment rather trivial as we would probably never expect it to survive.

The other issue with the injunctive hypothesis is the ablaut. In the example **prək-* ‘ask’, the issue is not visible since PT **pr* is not prone to palatalisation, but it is clear from other forms that the Proto-Tocharian root sbj.[1] alternated between non-palatalising **e-* and **ə-* grade, pointing to PIE **o/Ø*-ablaut: TB act.1sg.-obj.pl. *neku-me* ‘I will destroy us/you/them’, 3pl. *nakām* ‘we will destroy’, 1sg. *kelu* ‘I will bear’, 3sg.-obj.pl. *tekām-me* ‘(s)he will touch us/you/them’, TA act.2sg. *nakät* ‘you will destroy’, 3sg. *koš* ‘(s)he will extinguish’.¹⁰⁷ If we want to derive sbj.[1] from the s-aorist, both the expected inherited ablaut and the lack of palatalisation must be investigated.

Peyrot (2013a: 500) argues for a unified ablaut for both the root sbj.[1] and the s-prt.[3], **ē/ə* (as if from **ē/Ø* and with **ē*-grade limited to the active singular), as the

¹⁰⁶ The origin of **pə-* is uncertain. It may be connected to the PIE preverb **pe/po-* (Hackstein 2001: 17–8) or the Tocharian B particle *pi* ‘please’ (C. Bernard, *p.c.*).

¹⁰⁷ There is one example of initial palatalisation in Tocharian B: act.3sg.-obj.1sg. *plyewä-ñ* (PKAS17C a5): *katkauñaisa arañce po ñke plyewäñ* ‘out of joy, my heart will float completely indeed’ (trsl. CEToM, ed. G.-J. Pinault & M. Malzahn, accessed 25 May 2023). Since it involves *l*, it is uncertain whether it constitutes an archaism (Peyrot 2013a: 501).

most economical explanation. From this stage, it takes two assumptions to get to the Proto-Tocharian paradigms: levelling from $*ə$ to $*e$ in the *s*-preterite active plural after the singular and depalatalisation of the root subjunctive singular after the plural. While the latter may be rather trivial, it is not as easy to get levelling from $*ə$ to $*e$ in the preterite plural as it may seem. If both the active paradigms of the root subjunctive and the *a*-preterite have ablaut alternating between the singular and the plural, what would the motivation be for the *s*-preterite active to innovate?

Table 2.9: Lack of motivation for levelling in the *s*-prt. act. pl.

	act. sg.	act. pl.	mid. sg.	mid. pl.
root subjunctive	* ₋ ^(ʔ) <i>e</i> -	* ₋ ^(ʔ) <i>ə</i> -	* ₋ ^(ʔ) <i>ə</i> -	* ₋ ^(ʔ) <i>ə</i> -
<i>a</i> -preterite	* ₋ ^(ʔ) <i>ə</i> -	* ₋ <i>ə</i> -	* ₋ <i>ə</i> -	* ₋ <i>ə</i> -
<i>s</i> -preterite	* ₋ ^(ʔ) <i>e</i> -	* ₋ ^(ʔ) <i>ə</i> -	* ₋ ^(ʔ) <i>ə</i> -	* ₋ ^(ʔ) <i>ə</i> -
	↳	* ₋ ^(ʔ) <i>e</i> -?		

As mentioned above (2.3.8), however, the ablaut of the Vedic *s*-aorist agrees with the Tocharian *s*-preterite, so it would be attractive to posit this for a common proto-stage. Due to the discrepancies in especially Indo-Iranian and Greek, there are competing theories about the reconstruction of the CIE *s*-aorist ablaut. Some scholars take the Indo-Iranian situation with lengthened grade in the indicative and injunctive active as original (Jasanoff 2003: 205; Weiss 2020: 437), others prefer to reconstruct a full-grade throughout as in Greek (Watkins 1962: 25–6; Strunk 1985). It has also been proposed that the lengthened grade was limited to the indicative and injunctive active singular, thus showing a similar distribution between the strong and weak stem as other ablauting stems (Harðarson 1993b: 95–6).¹⁰⁸ Yet another option was proposed by Kortlandt (1987; 2004), namely that the *s*-aorist lengthened grade originated through monosyllabic lengthening in the 2sg. and 3sg. of the injunctive, from which it spread to the indicative. According to him, the lengthened grade was levelled throughout the indicative active, while the injunctive remained alternating. Evidence for full-grade injunctive forms can be found in Vedic where the 1st person injunctive forms predominantly take *guṇa*: e.g., aor.inj.act.1sg. *jeṣam* ‘conquer’, *stoṣam* ‘praise’, 1pl. *jéṣma* ‘conquer’.¹⁰⁹

¹⁰⁸ On the difficulties of reconstructing the ablaut of the root aorist, see Malzahn (2004).

¹⁰⁹ The interpretation of these forms is controversial. Hoffmann (1967a; 1967b: 254–5),

Considering the discrepancy between Indo-Iranian and Greek, I think it is preferable to reconstruct an alternation between $\bar{e}$ - and e -grade in the *s*-aorist vocalism. The question is what the distribution of the lengthened grade was in the proto-language. If it was found only in the indicative and injunctive active singular, this would reconcile the branch-specific facts with a minimal number of innovations. In Indo-Iranian, we only have to posit a levelling from the active singular to the plural in the indicative, while in Greek, the complete elimination of $\bar{e}$ -grade could have happened through levelling from roots in final *-VRC*, in which a lengthened grade would be regularly shortened due to Osthoff's law (Simkin 2004: 88–92). However, ablaut alternation is not attested in the indicative anywhere. Similarly, while Kortlandt's suggestion of a monosyllabic lengthening is an elegant way of getting the required lengthened grade into the *s*-aorist, it faces some issues. It is quite difficult to get rid of $\bar{e}$ -grade in the root aorist injunctive where it is equally as expected as in the *s*-aorist.¹¹⁰

If we accept the hypothesis that the *s*-prt.[3] and the root sbj.[1] derive from the *s*-aorist, we can now look at what Tocharian offers as evidence for its ablaut; see Table 2.10. For the sake of the exercise, I assume depalatalisation in the subjunctive. What is noteworthy is how close the ablaut is to that of Vedic: stable lengthened grade throughout the preterite (← indicative) and ablaut in the subjunctive (← injunctive). The 1sg. of the subjunctive does not support the distribution predicted by monosyllabic lengthening, but it would be a fairly trivial innovation to level it in analogy to the 2sg. and 3sg.

followed by Jasanoff (2003: 186–7), interprets them as sigmatized precatives.

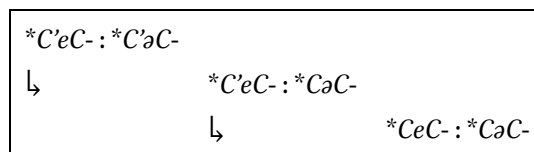
¹¹⁰ Kortlandt's proposal (2004: 14) that it was eliminated in the root aorist due to the lengthened grade root present, e.g., 3sg. *táṣṭi* 'fashions', is not entirely convincing.

Table 2.10: The *s*-aorist indicative and injunctive active from the point of view of Tocharian

	PIE ind. act.		PT <i>s</i> -prt.[3] act.		PIE inj. act.		PT sbj.[1] act.
1sg.	* <i>h₁éCēCsm</i>	→	* <i>pr'ekāwa</i>		* <i>CéCsm</i>	→	* <i>prekāw</i>
2sg.	* <i>h₁éCēCs</i>	→	* <i>pr'ekāsta</i>		* <i>CéCs</i>	→	* <i>prektā</i>
3sg.	* <i>h₁éCēCst</i>	→	* <i>pr'eksa</i>		* <i>CéCst</i>	→	* <i>prek</i>
1pl.	* <i>h₁éCēCsme</i>	→	* <i>pr'ekmā</i>		* <i>CéCsme</i>	→	* <i>pārkām</i>
2pl.	* <i>h₁éCēCste</i>	→	* <i>pr'eksā</i>		* <i>CéCste</i>	→	* <i>pārkā</i>
3pl.	* <i>h₁éCēCsnt</i>	→	* <i>pr'ekrā</i>		* <i>CéCsnt</i>	→	* <i>pārkān</i>

The question is now how palatalisation was removed. As mentioned above, palatalisation is a grammaticalised phenomenon in Tocharian. Peyrot (2013a: 502) suggests that the root subjunctive weak stem was levelled in analogy to the zero-grade of the corresponding *s*-present which he derives from the Indo-European **ske/o*-present; see 3.6. Such a change would be fairly natural as it decreases the amount of morphological markers between the present and subjunctive stems which are already distinguished by the present suffix. Once the weak stem was depalatalised, the strong stem of the subjunctive could be analogically altered as well; see Figure 2.3.

Figure 2.3: Levelling of sbj.[1] root ablaut



Conversely, there are two verbs with a root sbj.[1] and an *s*-prt.[3] that have palatalising lengthened grade in the present, ^B*tək-*, ^A*tāk-* ‘touch’ and ^B*tānk-*, ^A*tānk-* ‘hinder’; here removing the palatalisation in the subjunctive would increase morphological clarity (Table 2.11). Thus it appears that there are several mechanisms that could have caused the root subjunctive to depalatalise.

Table 2.11: Depalatalisation in sbj.[1]

PT		TB and TA	
prs.[2]	*t'ek-ʾə/e-	>	act.3sg. ^B ceśäm
sbj.[1]	*t'ek/t'ək- → *tek/tək-	>	act.3sg.-obj.pl. ^B tekäm-me
prs.[2]	*t'enk-ʾə/e-	>	act.3pl. ^B cenkem
sbj.[1]	*t'enk/t'änk- → *tenk/tänk-	>	act.3sg.-obj.2sg. ^B tenkän-, vn. ^A tänklune

If there never was an ^(ʼ)ə-grade in the preterite paradigm, it would explain why the *s*-preterite active did not depalatalise until after Proto-Tocharian (as evidenced by Tocharian A, e.g., 3sg. *ñakäs*, 3pl. *ñakär*). It thus seems likely that the spread of depalatalisation was carried by the *ə-grade; starting from the *s*- and *sk*-presents, it could spread to the weak stem of the root subjunctive and the *s*-preterite middle, but not the *s*-preterite active.

Accepting the injunctive as the origin of the root subjunctive entails the two assumptions that the augment was lost and the paradigm was secondarily depalatalised. With those two assumptions that are internally motivated in Tocharian, we are able to bring the *s*-preterite fully into the fold of the CIE *s*-aorist.

2.5. Possible *s*-aorist relics

One premise of both the *s*-aorist hypothesis and the presigmatic aorist hypothesis is that the Tocharian *s*-preterite corresponds systematically to *s*-aorists in CIE languages. This is backed up by several stem cognates; compare e.g., TB 3sg. *preksa* ‘asked’ and Ved. aor.ind.act.3sg. *áprāt* ‘asked’; TB 3sg. *reksa*, TA 3sg.-obj.3sg. *raksā-ṇ* ‘covered’, Lat. pf.ind.act.1sg. *rēxī* ‘directed, conducted’ and Gk. aor.ind.act.1sg. ὤρεξα ‘stretched’, TB 3sg. *plye_usa* ‘floated’, Skt. aor.ind.mid.3sg. *aploṣṭa* ‘has swum away’ (Jaiminiyabrāhmaṇa), and Gk. aor.ind.act.1sg. ἔπλευσα ‘floated, swam’; see Adams (2012: 44–5). This correspondence, however, does not tell us which paradigm is more original. If it is correct that the *s*-preterite derives from the fully sigmatic aorist, we would expect to find relics of old *s*-aorists that avoided loss of the suffix by having reanalysed it as part of the root. We see this happening to a fairly large extent with old *sk*-presents in Tocharian, and there is no reason why it could not happen in the preterite under the right circumstances.

A similar argument can be made for Hittite. Proponents of the so-called *Schwundhypothese* have identified several possible s-aorist relics, including both lexical items and stem formants (Eichner 1975: 83; Oettinger 1979: 212, 435).¹¹¹ I have treated these in detail myself (Friis 2018: 40–59), as has Søbørg (2020: 148–173). These surveys have shown that practically none of relevant verbs show evidence of an s-aorist origin, such as *ē*-grade and s-aorist cognates. Instead, several verbs exhibit behaviour related to s-extensions, such as Schwebelaut and sigmatic forms outside the aorist; see also Cohen (2017), Willi (2018: 475–9), Lubotsky (2021). The function of the s-extension in some of the verbs seems to have been to add telicity to the meaning of the basic root, e.g., **peh₃*- ‘drink’ → **peh₃s*- ‘take a sip’ ⇒ ‘swallow’; see 1.3.1.¹¹² In my opinion, there is no conclusive evidence for relics of s-aorists in Hittite.

There are four promising candidates which show an etymologically unexpected root-final s and ^(j)e-vocalism in all or some forms: ^B*tes*-/tās-, ^A*cas*-/tās- ‘put’, ^A*kñas*- ‘know’, ^B*klyews*-, ^A*ktyaws*- ‘hear’, ^B*mens*- ‘be sad’. This is a heterogeneous group, which undoubtedly has various origins, but common to at least three of them is their secure Indo-European etymology: **d^heh₁*- ‘put’, **ǵneh₃*- ‘know, recognise’, and **kleu-* ‘hear’ (LIV 2001: 136–8, 168–70, 334–5; Malzahn 2010: 609–10, 632, 643–4).

2.5.1. TB *tes*-, TA *cas*- ‘put’

As I argued above (2.3.8), the best way to explain the -s- of ^B*tes*-, ^A*cas*- ‘put’ is through secondary sigmatisation due to the merger of PIE **ē* and **eh₁*, aligning the ablaut of the inherited root aorist with the s-aorist (Harðarson 1993b: 79). In this section, I will discuss in more detail the mechanism and motivation for this change, as well as the accompanying present and subjunctive stems.

The motivation for the transfer of pre-PT **tē/ta*- ‘put’ to the early s-preterite inflection cannot be explained by the similarity of their ablaut alone. To find the motivation, we must ask, what would have happened to **tē/ta*- if it was not renewed? First of all, it would have developed into a sort of root preterite with a rare ablaut **e/a*; see Table 2.12. This would probably not be an issue in itself, since this word has a basic meaning which is more likely to retain archaic inflection (as it in fact does in Tocharian). An issue arises when the 3sg. ending is lost due to the sound change **t* > Ø/V_#. The resulting form **t’e* is very short and practically unmarked by any grammatical features other than ablaut. That ablaut, however, agrees with the s-

¹¹¹ See also Sturtevant (1932) who argues for a number of s-aorist relics, although he is—famously—not a proponent of the *Schwundhypothese*.

¹¹² I suggested this in my MA thesis at Københavns Universitet (Friis 2018: 56–8).

preterite. I would suggest that the suffix **-sa-* was analogically transferred from the *s*-preterite in order to mark the form more strongly as a preterite 3sg.¹¹³ We may also note that the 2sg. looks identical to an *s*-preterite after the introduction of the perfect ending. If both the 2sg. and 3sg. were sigmatic at this point, it would be rather trivial to introduce the suffix **-s-* in the 1sg. as well. From that point on, **-s-* could spread into the weak stem of both the active plural and the middle; see Figure 2.2, p. 76.

Table 2.12: The early developments of **tē/ta-*

	PIE		Pre-PT		pf. end.		<i>*t > Ø/V_#</i>
	‘put’		‘put’				
1sg.	<i>*dʰéh₁m</i>	>	<i>*t'em</i>	→	<i>*t'e-w-a</i>	→	<i>*t'e-s-wa</i>
2sg.	<i>*dʰéh₁s</i>	>	<i>*t'es</i>	→	<i>*t'es-ta</i>	>	<i>*t'e-s-ta</i>
3sg.	<i>*dʰéh₁t</i>	>	<i>*t'et</i>	>	<i>*t'et</i>	> <i>*t'e</i>	→ <i>*t'e-sa</i>
1pl.	<i>*dʰh₁mé</i>	>	<i>*tam'ə</i>	>	<i>*tam'ə</i>		
2pl.	<i>*dʰh₁té</i>	>	<i>*tat'ə</i>	→	<i>*ta-sə</i>		
3pl.	<i>*dʰh₁ént</i>	>	<i>*tənt</i>	→ <i>*tan</i>	→ <i>*tar</i>		

As mentioned in 2.3.8, the secondary sigmatisation of **tē- → *t'e-s-* does not explain the paradigm as it is attested in Tocharian. The 3sg. forms ^B*tessa*, ^A*casās* clearly exhibit a geminate **-ss-* comprising one **-s-* from the root and one **-s-* from the ending **-sa*. This is understandable under the conditions of the hypothesis that the fully sigmatic aorist is the precursor of the Tocharian preterite. The hypothesis explains the absence of the *s*-suffix in most forms of the active paradigm as the result of phonological change and subsequent analogy; see 2.3.2–2.3.6. However, the conditions for the phonological changes are not met in pre-PT **t'e-*, since the root is not consonant-final. The sigmatic suffix of the 1pl. and 3pl. would therefore not be lost phonologically. After the **-s-* had been lost in most other *s*-preterite verbs outside the 3sg., it was no longer in effect as a preterite formation suffix and the **-s-* of the fully sigmatic paradigm of the preterite **t'es-* could be reanalysed as part of the root.

¹¹³ A possible second motivation could be that the demonstrative pronoun PT m.obl.sg. **ce* < **t'e* is formally identical and that the verbal form **t'e* was renewed to disambiguate them. The pronominal form, however, was not originally palatalised: PIE **tom* > **te* → **t'e* (Pinault 2009: 231). Whether the verbal form **t'e* would have existed simultaneously as the pronominal **t'e*, is therefore speculative.

After this reanalysis, the 2sg. and 3sg. were in need of renewal as they were no longer properly marked: $*t'e-s-ta \rightarrow *t'es-ta \rightarrow *t'es-sta$ and $*t'e-sa \rightarrow *t'es-a \rightarrow *t'es-sa$.

Besides the unusual s-preterite middle, the stem pattern of this verb is highly unusual in both Tocharian A and Tocharian B. The s-final root is found in three ablaut variants in both languages, ${}^Btes/tas/təs-$, ${}^Acas/tās/täs-$ 'put', and it alternates with an asigmatic root, which is reduplicated in Tocharian B; see Table 2.13.¹¹⁴ The reduplicated stem must be derived from the well-attested reduplicated present; cf. Ved. *dádhāti* 'puts', OAv. *dadāiti* 'puts', Gk. *τίθημι* 'put', Lat. *re-ddō*, Lith. *desti* 'puts' (LIV 2001: 136–7). The regular outcome of the zero-grade $*d^hé-d^h_1-$ would be PT $*cəta-$,¹¹⁵ so the unpalatalised initial PT $*t-$ must have been reintroduced. In addition, the internal gemination in ${}^Btətta-$ is unexpected. Hackstein (1995: 63 fn. 57) suggests that it reflects the original reduplication syllable undergoing regular syncope of $*-ə-$ in open syllable: $*d^hed^h_1- > *t'əta- > *tta-$. This would be found directly in the Tocharian A stem $tā-$, while in Tocharian B, the reduplication syllable was restored. This is an elegant way of getting rid of the reduplication in Tocharian A, but it does mean that the restoration in Tocharian B would be extremely late considering the general lack of reduplication in the subjunctive. Alternatively, the reduplication could have been strengthened in Proto-Tocharian and then lost once more in Tocharian A. Importantly, this inherited present proves that the $*-s-$ of $*ces/tas/təs-$ was originally a suffix rather than a part of the root.

Another aberrant feature of the verb is the *a*-grade in the present, act.3pl. ${}^Btāseṃ$ 'put', 3sg. ${}^Atāṣ$ 'puts'. In Tocharian A, we also find a fossilised *m*-participle $tāskmām$ 'compared' that shows a stem $tāsk-$. This stem is isolated, not only within this verb, but generally as a stem formant in Tocharian A, in which PT $*sk$ -presents (TB *sk*-prs.[9]) have merged with *s*-presents (prs.[8]). This *s*-present must have been created to fit the *s*-present ~ *s*-preterite pattern; since the middle of the *s*-preterite matches the ablaut grade of the *s*-present in this pattern, the unexpected *a*-grade of

¹¹⁴ Hackstein (1995: 62), following Krause (1952: 245), sets up a second subjunctive stem matching the 'ə/e-prs.[2] . Peyrot (2013a: 431–2), however, argues that all forms of this supposed subjunctive, e.g., ${}^B(asau)$ (THT85 a6), ${}^Btāsträ$ (THT559 b1), can just as well be interpreted as present forms, thus eliminating the pattern of a 'ə/e-prs.-sbj.[2] next to the *s*-prt.[3], which by Hackstein's own admission is "ein morphologisches „Hapax“" (1995: 60).

¹¹⁵ If not $*śata- < *ts'əta- < *ded^h_1-$ with Grassmann's law; see Winter (1962a: 24–5), Ringe (1996: 47), but Peyrot (2022b: 92 fn. 10). The exact reconstruction of the reduplication vowel can be debated, as Indo-Iranian points to $*d^hé-d^heh_1/d^h_1-$ or $*d^hé-d^hoh_1/d^h_1-$ (also and OCS *deždq* 'put' < $*ded-je-$), while Greek points to $*d^hí-d^heh_1/d^h_1-$ (LIV 2001: 137–8). The result would be the same in Tocharian in any case.

**tas-’ə/e-* is suddenly expected. The new present pushed the original archaic reduplicated present into the subjunctive. This could have happened at any point within pre-Proto-Tocharian. With Malzahn (2010: 437–8, 645), it is likely that ^A*tāskmām* is no relic, but rather a hypercorrect inner-Tocharian A form; see 5.3.3.

The aberrant paradigm of ^B*tes/tas/təs-*, ^A*cas/tās/täs-* ‘put’ and the numerous stem variants can thus be explained as inherited forms, established through Indo-European comparanda, which underwent quite extensive analogical repair within Tocharian.

Table 2.13: Stem pattern of ^B*təs-/tätta-*, ^A*tās-/tā-* ‘put’ according to root variants

^B <i>təs-</i>			^A <i>tās-</i>		
prs.[2]	<i>tas-’ə/e-</i>	act./mid.	prs.[2]	<i>tās-’ä/e-</i>	act. ^β
prt.[3]	<i>tes/təs-</i>	act./mid.	prt.[3]	<i>ces/tās-</i>	act./mid.
ipv.	<i>p-tes/təs-</i>	act./mid.	ipv.	<i>p-tas/tās-</i>	act./mid.
prt.[1]	<i>tasá-</i>	mid. ^α			
prt.ptcp.	<i>tatāsa_u</i>				
ipv.	<i>p-tasa-</i>	mid. ^α			
^B <i>tätta-</i>			^A <i>tā-</i>		
sbj.[5]	<i>tättá-</i>	act./mid.	sbj.[5]	<i>tā-</i>	act. ^β
prt.ptcp.	<i>tättā_u</i>		prt.ptcp.	<i>to</i>	
			foss. <i>m</i> -ptcp.	<i>tāskmām</i>	

(Malzahn 2010: 641–2; Peyrot 2013a: 757)

^α Only middle forms attested. This may be a coincidence of attestation as most other stems form both actives and middles.

^β Only active forms attested. See previous note.

2.5.2. TA *kñas-* ‘know’

One verb which is central to the question of the chapter is ^A*knā-/kñā-/knas-* ‘know’, due to its cognate in Hittite *gani/ešš-* ‘know’, since it has been proposed for both forms that they directly continue an *s*-aorist **ǵnēh₃/ǵneh₃-s-*. The equation between TA *kñas-* and Hitt. *gani/ešš-* ‘know’ is likewise important for Jasanoff (1988b; 2019b: 16–20) as it exemplifies the Narten inflected athematic *s*-present that he posits as a

donor paradigm to the suppletive presigmatic aorist: **ǵnēh₃/ǵneh₃-s-*. According to him, this type of present was formed to inherently punctual roots and had inchoative or desiderative meaning. On these grounds, he argues that it merged in meaning with the punctual **h₂e*-conjugation aorist. Before delving into the diachronic discussion, there are some synchronic facts that need to be established.

Table 2.14: Forms of [^]*knā-/kñāññ-/kñas-* ‘know’

<i>knā-</i>	<i>kñāññ-</i>	<i>kñas-</i>
act.2sg. <i>knānat</i> (α)	act.1sg. <i>kñasu</i> (β)	mid.3sg. <i>kñāñtär</i> (α)
act.3pl. <i>knāneñc</i> (α)	act.2sg. <i>kñasäšt</i> (β)	mid.3sg. <i>kñ[ā]ññā[t]</i> (β)
prs.ptcp. <i>knānmām</i>		mid.3pl. <i>kñāññānt</i> (β)
		prt.ptcp. <i>kākkñāññu</i>
(α) = present-subjunctive ending		
(β) = imperfect-preterite ending		

The Tocharian A verb exhibits very irregular stem alternations and the analysis of its stem pattern is therefore debated; see Table 2.14.¹¹⁶ Hackstein (1993: 156) demonstrated that all forms of the stems [^]*knā-/kñāññ-/kñas-* can be integrated into one paradigm, but one particular issue remains: how to classify the two sigmatic forms [^]*kñasäšt* (A340 b5, ex. 1) and [^]*kñasu* (YQII.2 a1, ex. 2), both meaning ‘know, recognise, be familiar with’. The first form is definitely an active 2sg. form, but it can either be analysed as an *s*-present class [8] *kñas-äš-t* or a preterital form, either an *s*-preterite or an *s*-imperfect *kñas-äšt* (Sieg, Siegling & Schulze 1931: 435).¹¹⁷

¹¹⁶ In TB, the cognate of [^]*knā-* has simplified the initial cluster to *n-* and generalised the nasal suffix: ^B*nanā-* ‘appear, recognise’ with the pattern [9 – 5 – 1]. The *sk*-prs.[9] is a recent creation replacing an earlier *a*-prs.[5], indicated both by the non-initial accent, e.g., in the sbj.mid.3sg. *nanātrā* (PKAS12D a2), as well as the *mo*-adjective *nanāmo* ‘recognising’ (Peyrot 2013a: 440; 2022a: 170–1). This verb provides no insight into the Proto-Tocharian stem pattern except to confirm the antiquity of the nasal present.

¹¹⁷ The present analysis was favoured for many years (Krause & Thomas 1960: 98; Jasanoff 1988b; Hilmarsson 1991a: 98–9). Pinault (1990: 131) suggests [^]*kñasu* as a preterite participle m.nom.sg. and thus identifies [^]*kñasäšt* as a preterite.

1 A340 b5

*weñā-ṇi oṇk sām kñasāṣṭu*_{prt/1pf.act.2sg.+pers.pron.2sg.nom.} *vāsavagrām śūkṣaṃ (te)*
 “That man said to him: **Are you familiar** with the village Vāsavagrāma?”¹¹⁸

2 YQII.2 a1

*(namo buddha namo buddha weñlune klyosāmṣā)wā*¹¹⁹ *tām nu mā kñasu*_{prt/1pf.act.1sg.}
kus taṃ buddhaṃ māskatrā
 “I kept hearing the saying ‘Reverence to the Buddha, reverence to the Buddha’
 (*namo buddha*), but **I did not know** who this Buddha was”¹²⁰

Since Schmidt & Winter (1992) and Hackstein (1993), a *communis opinio* has formed to interpret both ^A*kñasu* and ^A*kñasāṣṭ* as finite preterite forms, 1sg. and 2sg. respectively (Harðarson 1993b: 77–9; Ji, Winter & Pinault 1998: 271; Carling, Pinault & Winter 2009: 129; Malzahn 2010: 609–10; Peyrot 2011: 39–40; 2013a: 762; Carling & Pinault 2023: 158).¹²¹ Recently, a new analysis by Itkin (2014: 38–40) flips the imperfect and preterite. The benefit with this analysis is that the subjunctive, preterite and preterite participle stems would follow a comparable pattern to that of ^A*weñ-* ‘say’, with an *’ä/a*-subj.[2] (Peyrot 2013a: 762). It would also mean that we can posit a root *kñāññ-* in a suppletive relationship with the present stem *knānā-* and an s-imperfect *kñas-Ø/sā-* to a root ^A*knās-*.

’ä/a-subj.[2] *weñ-’ä/a-*, *ā*-prt.[1] *weñā-*, prt.ptcp. *wewñu*
 prs.[1] *trāñk-*, s-ipf. *crañk-Ø/sā-*

¹¹⁸ See Sieg (1952: 38): “Es sprach zu ihm der Mann: ‘Bist du bekannt im Dorfe Vāsavagrāma?’”. There is a close Chinese parallel attested: “L’homme dit : « Connaissez-vous le bourg de *Wang-sa-po* (Vāsava) dans le royaume de *A-che-mo-kia-a-p’an-li* (açmaka avanti) ? »” (Chavannes 1911: 246).

¹¹⁹ Restoration based on the parallel in A214 b6.

¹²⁰ See Ji, Winter & Pinault (1998: 75): “/// I (kept hearing) that ‘Reverence to the Buddha’ [*namo buddha*] was said), but I did not know what *buddha* referred to.” There is a parallel in the Maitrisimit (MaitrHami II, 2a10–12, Pinault (1999: 195): ¹⁰*ara namo but qilmis unlär išidür ärdim*(.) ¹¹*anī adīra uqmaz ärdim .. kim ärki ol buta* ¹²*yarlay* (.). „Darunter hörte ich Stimmen, die ‚Verehrung dem Buddha!‘ sagten. (11 ff) Ich kann nicht unterscheiden, wer nun diesen Ausruf ‚Oh Buddha!‘ (tat) (?)” (Geng & Klimkeit 1988: 119).

¹²¹ Carling, Pinault & Winter (2009: 129) posit a verb ^A*kāms-* ‘recognise’ with preterite ^A*kñas-*, but see Peyrot (2011: 39). It is not included in Carling & Pinault (2023).

ʾä/a-sbj.[2] *kñāññ-ʾä/a-*, ā-prt.[1] *kñāññā-*, prt.ptcp. *kākñāññu*
nā-prs.[6] knānā-, s-ipf. *kñas-Ø/sā-*

Semantically, however, analysing ^A*kñasäšt* as a preterite, as per Hackstein (1993: 153–6), is more attractive, since it appears to have present tense stative reference in A340 b5 (ex. 1). This is a feature of the preterite, not the imperfect, in Tocharian; see Thomas (1957: 209–18). A close semantic parallel is found in A305 b3 (ex. 3), in which prt.act.1sg. *śārsā* ‘knew’ must be translated with present tense reference (Thomas 1957: 216; Hackstein 1993: 156). Whether the forms to *kñas-* are to be analysed as preterites or imperfects, it is clear that this stem is more archaic than the past tense forms to the nasal stem *kñāññ-*.

3 A305 b3

/// (*śaṇ*)*kh(e) śamaṇ trāṅkāṣ śārsā*_{prt.act.1sg.} *ñom-kälywāts śārsā*_{prt.act.1sg.}
 “The monk Śaṅkha says: **I know**, O famous one, **I know**”¹²²

The origin of some of these forms is relatively clear. The nasal stem underlying both ^A*knā-na-* and ^A*kñāññ-* has several stem cognates: Ved. *jānāti* ‘knows’, YAv. *paiti-zānəṇti* ‘recognise’,¹²³ OIr. *ad-gnīn* ‘recognises’, Got. *kunnan* ‘know’, Lith. *žinóti* ‘know’ (LIV 2001: 168).¹²⁴ Greek attests a root aorist, ἔγνων ‘realised’, the zero-grade of which is probably found in ^B*aknātsa*, ^A*āknats* ‘fool(ish)’ < **ṇ-ḡnh₃-(n)tīh₂*.¹²⁵

Returning to ^A*kñasu*, ^A*kñasäšt* and the *s*-present suggested by Jasanoff (1988b), the reinterpretation from *s*-prs.[8] to *s*-imperfect does not change the basic argument. However, the comparative evidence for this formation faces some difficulties. Jasanoff (2019b: 17–19) adduces evidence for the stem in the various sigmatic desiderative and future stems of the Indo-European languages, but the

¹²² See Thomas (1957: 216): “Der Mönch (Śaṅkha) spricht: ,Ich weiß (Prät.), o Erhabener, ich weiß (Prät.)...’.

¹²³ It seems that **h₃* was restored in the root already in PIE: **ḡn-n-h₃-* → **ḡnh₃-n-h₃-* (Derksen 2008: 519–20; Kroonen 2013: 250).

¹²⁴ Many Indo-European languages also attest a **ske/o*-present, e.g., Arm. *čanač'em* ‘recognise’, Gk. γιγνώσκω ‘recognise’, Lat. (*g*)*nōscō* ‘recognise, know’. The Tocharian A verb *kām̐tsā-* ‘confess’ has been derived from this present by Adams (1988: 32) and Hilmarsson (1991a: 99–101).¹²⁴ Semantically, this link is fine (consider Gm. *bekennen* ‘confess’), but the other zero-grade forms of this verb show that from **ḡnh₃-*, we would expect **ḡnh₃-* > **kna-*, not **ḡnh₃-* > **kən-*. Hackstein (1995: 100–1) instead suggests an internal denominative origin; see also Malzahn (2010: 570–1).

¹²⁵ Either a **ti*-abstractum or a feminine **nt*-participle; see Hackstein (2012: 156–7), Pinault (2012b: 187), Friis (2021: 18–20) and below 5.4.2.

evidence for Narten ablaut is almost exclusively inferred. The descendent forms of **ǵnēh₃s-* are the only place where a lengthened grade sigmatic stem seems to be directly attested outside Tocharian: Hitt. 3sg. *ka-né-e-eš-zi*, 3pl. *ka-né-e-eš-ša-an-zi* (NS), next to other non-plene spellings, e.g., *ga-né-eš-zi* (OS).¹²⁶ However, it was noticed by Kloekhorst (2009: 250) that all plene occurrences are found in only one text; what is more, Søbørg (2020: 156) shows that they occur in repetitive phrases in consecutive lines and that the forms have been stretched out for aesthetic reasons. The lengthened grade in the Hittite verb must therefore be considered a late inner-Hittite development. For this reason, the connection between *gani/ešš-* and the Indo-European *s*-aorist must also be given up; *pace* LIV (2001: 460).

Whether TA *kñas-* continues an *s*-aorist is another matter. Formally, *^kñas-* can derive directly from **ǵnēh₃s-*,¹²⁷ which fits with the *s*-aorist attested in Ved. *ajñāsam* (JB), *ajñāsthās* (AV) ‘recognised’ next to a precative 2sg. *jñeyās* (RV) ‘may you learn’ (LIV 2001: 168). Structurally, however, there are several reasons to doubt an original *s*-aorist. There is the strong evidence for a root aorist, including *^aknātsa*, *^ākñats* ‘fool(ish)’, the punctual Aktionsart of the root ‘recognise, understand’ as well as the chronology of the Vedic forms (Harðarson 1993b: 101–2; Jasanoff 2019b: 16–7). The *s*-imperfect inflection of *^kñasu*, *^kñasāst* does not in itself support an *s*-aorist origin, because it does not explain the root-final *-s-* which must be interpreted as part of root: *^kñas-Ø/sā-*. The morphological structure of this verb is thus practically identical to *^cas-Ø/sa-*, *^tes-Ø/sa-* < **ces-Ø/sa-* ‘put’.

So if *^kñas-* cannot go back to an inherited *s*-present nor an inherited *s*-aorist, how can the sigmatic element be explained? Unlike in **ces-* < **t'e-* < **dʰéh₁-*, the root aorist to **ǵnēh₃-* ‘recognise’ would not merge in ablaut with the *s*-aorist. It is noteworthy, however, that direct descendants of aorists of Proto-Indo-European **CeH*-roots in Tocharian do not seem to be attested. Kim’s (2022: 153–5) survey of roots with PT **a* from PIE **(C)CeH-* shows that for the most part the roots have been extended with consonantal elements, mostly **-sk-* or **-k-*, e.g., **peh₂-* → **pask-* ‘protect’, **(s)neh₁-* → **naska-* ‘spin’, **pieh₂-* ‘scare’ → **pyak-* ‘strike’.¹²⁸ We find

¹²⁶ Against Armenian *caneaw* ‘recognised’ as another instance of **ǵnēh₃s-*, see Klingenschmidt (1982: 283–4); *pace* Eichner (1973: 72), Jasanoff (2019b: 16–7).

¹²⁷ There is to my knowledge no evidence from Tocharian that laryngeals coloured long vowels. We should not assume a phonetic effect of one phoneme onto another without positive evidence, and I will therefore *a priori* assume that they did not; see the evidence for Eichner’s law discussed in Pronk (2019).

¹²⁸ See Hackstein (1992) on **pyak-* ‘strike’. Potentially, the *k*-less Tocharian A subjunctive forms 3sg. *tāš*, 3pl. *teñc*, etc. to *^tākā-* ‘be’ could reflect the original root stem **tā-* <

laryngeal-final unextended stems in three, maybe four cases: **d^heh₁-* ‘put’ and **ǵneh₃-* ‘recognise’, both under scrutiny here, as well as **ǵeh₂-* ‘drive’, in the reduplicated present **ǵi-ieh₂-* > **yāya-* > prs.-sbj.act.3sg. ^B*iyam*, prt.act.3sg. ^A*yā* (Hackstein 1995: 23 fn. 27), and possibly **deh₃-*, if indeed reflected in the Tocharian B imperative singular *pete* ‘give!’ (Kim 2022: 155 fn. 18).

It seems that root preterites of this type were discontinued in different ways in the prehistory of Tocharian. In this case, the root aorist to PIE **ǵneh₃-* seems to have been treated the same way as **d^heh₁-* and received the sigmatic suffix throughout the paradigm. This likely happened in analogy to s-aorists to *CeH*-roots, but since we do not have any such attested, this must remain speculative. If we project the expected root aorist into Tocharian, the result would be a non-ablauting root stem **kna-* (> ^A*knā-*), since the reflexes of the full-grade and zero-grade merge:

PIE <i>*ǵnéh₃-</i>	>	<i>*knō-</i>	>	PT <i>*kna-</i>
PIE <i>*ǵnh₃-</i>	>	<i>*kna-</i>	>	PT <i>*kna-</i>
(Hackstein 2017: 1317)				

This is the formant that we find in the fossilised participle ^B*aknātsa*, ^A*āknats* ‘fool(ish)’. In principle, it could have been continued as an *a*-preterite, but that would probably be difficult since the **-a-* is also found in the non-preterite stems as well; it may not have been analysable as the preterite-marking **-a-* at all. Thus, in order to form an adequately marked preterite tense, there may have been no other option than to transfer it to the s-preterite.

One path for the transfer could have been through **h₁-*final roots like **d^heh₁-*. As we saw above, they would merge in ablaut in the strong stem with the s-aorist and from there receive the s-suffix. Since the weak stem of all **CeH*-roots would merge as the laryngeals vocalised (**d^hh₁-* > **ta-*, **ph₂-* > **pa-*, **ǵnh₃-* > **kna-*), that could have been the point of convergence, causing the **h₂-* and **h₃-*final roots the sigmatise as well: **ǵneh₃-*, **ǵnh₃-* > **kna-* → **kna-s-*. From there, the ablaut of the active preterite could have been levelled to the regular ablauting s-preterite: **knas-* → **kn’es-* → ^A*kñas-*. Being vowel-final rather than consonant-final, the verb was spared the phonological loss of **-s-*, forcing a reanalysis of **-s-* from suffix to radical.

The root final **-s-* of ^B*təs-*, ^A*cās-* and ^A*kñas-* as well as their s-preterite inflection can thus be understood as repairs to important basic verbs whose preterites became too aberrant in the system due to their phonological structure. Without more

^{*}*steh₂-* ‘stand’ (Hackstein 1992: 160–1), but they are more likely contracted from ^{*}*tākā-* (Pinault 2008: 640–1; Kim 2022: 154 fn. 16).

examples of *CeH*-roots in Tocharian, it will be difficult to prove definitively, but I think it is a reasonable hypothesis that this was the regular treatment of root aorists of this root type.

2.5.3. *e*-grade presents: TB *klyews*-, TA *klyaws*- ‘hear’ and TB *mens*- ‘be sad’

The situation with ^B*klyews*-, ^A*klyaws*- ‘hear’ and ^B*mens*- ‘be sad’ is different from the preterite stems ^B*tes*-Ø/*sa*-, ^A*cas*-Ø/*sā*- and ^A*kñas*-Ø/*sā*-. In these verbs, the -s- is found in all stems, no *s*-preterite is attested, and the *e*-grade belongs to the present rather than the preterite.

Starting with ^B*klyews*-, ^A*klyaws*- ‘hear’, there is evidence from both languages of a prs.-subj.[2] ^B**kľews*-ə/*e*-, e.g., act.3sg. ^B*klyaušäm*, mid.3sg. ^A*klyoštär* ‘hear’, and a derived prt.[1] with palatalising -*a*- ^B**kľewša*-, e.g., act.3sg. ^B*klyauša*, ^A*klyoš* (Malzahn 2010: 631–2; Peyrot 2013a: 748).¹²⁹ Tocharian A also attests an innovative *näs*-prs.[10], e.g., act.3pl. *klyosämseñc* (Hackstein 1995: 320). This verb is obviously etymologically tied to PIE ^B**kleu*- ‘listen’ (LIV 2001: 334–5), which is also found in two other verbs, ^B*kəln*-, ^A*käln*- ‘resound’ (from the Proto-Indo-European nasal present) and ^B*klawā*-, ^A*klāwā*- ‘be called’, as well as the compound ^B*ñem-kälywe*, ^A*ñom-klyu* ‘fame’ (Hackstein 1995: 320–2). In this case, the *e*-grade (from Proto-Indo-European ^B**ē*-grade) and the sigmatic suffix indicate an original *s*-aorist.

It is also a possibility that PT ^B**kľews*- reflects an *s*-extended root ^B**kleus*-. Such a root is posited by the LIV (2001: 336) on the basis of, e.g., Ved. prs.inj.act.3pl. *śróšan* ‘heed’, Lith. *kláusti* ‘ask’, Mess. ipv.2sg. *klaohi* ‘listen!’, OCS *shýšati* ‘hear’, and OHG *lōsen* ‘listen’. The simple thematic stem found in Vedic, Lithuanian and possibly Messapic *klaohi* ‘listen!’ aligns with the Proto-Tocharian thematic present-subjunctive ^B**kľews*-ə/*e*- being the basis of the Tocharian paradigm. If this reconstruction is correct, the Tocharian lengthened grade is unexpected and would need to be explained as secondary; see below.

Other explanations take the lengthened grade as inherent to the verb. Jasanoff (2019b: 21) takes it as another example of a Narten-ablauting *s*-present: ^B**klēu*/*kleu*-*s*-. The issue is the same as in ^B**ǵneh*₃-. Tocharian is the only branch to attest the lengthened grade. This proto-paradigm certainly explains the Tocharian verb, but it comes at the expense of reconstructing a present formation on a very narrow foundation.

¹²⁹ Peyrot (2008: 45) shows that the oldest stages of Tocharian B has -*ew*- rather than *au*-vocalism.

The other option is to assume that the root aorist **kléu/klu-* was transferred to the s-aorist/preterite in the prehistory of Tocharian (Hackstein 1995: 324; Peyrot 2013a: 579; Søbørg 2020: 146). This either entails that the thematic present was the original subjunctive formed to the s-aorist or that it was secondarily created to the s-preterite through the s-transitive pattern. In either case, this idea faces the serious issue that there is no structural motivation for the replacement of a (quasi-)inherited s-aorist by a productive 'a'-preterite, if **kléw-s-* followed the pattern of a regular s-transitive. Assuming that the s-aorist origin of the s-preterite is correct, we know what a Proto-Indo-European **Ceu-* root with an inherited s-aorist should look like (see the introduction of this section 2.5 for cognates):

TB s-prs.[8] *plaw-s'ə/e-*, sbj.[1] *plyew-/plaw-*, s-prt.[3] *plyew-sa/Ø-* to *plaw-* 'float'

I can see no reason why **kléw-s-* should have been treated any differently if the core of the paradigm truly was an s-aorist; it should have lost the sigmatic suffix outside the 3sg. just like **plēu/plu-s-*. It is safer to give up the idea that there ever was an s-aorist/preterite attested to this verb and instead assume that the present stem is the paradigmatic nucleus that it appears to be. This takes us back to the s-extended root set up by the LIV (2001: 336).

If *^Bklyews-ə/e-*, *^Aktyos-ä/a-* reflects the thematic present to this root, the lengthened grade should be explained. I think it is likely that it was introduced analogically from *s'ə/e-* presents with *e*-grade. Specifically, I think the present **preks'ə/e-* 'ask' could have been the donor, considering the closeness of the meanings 'hear, listen' and 'ask'; cf. Lith. *kláusti* 'ask', Dan. *høre nogen* 'lit. hear someone; ask someone their opinion'. Mutual influence on morphological features between semantically related verbs seems to be a relatively common occurrence in Tocharian; see e.g., 3.7 and 4.4.2. The thematic present also explains why the verb is sigmatic in all forms, since **-s-* would never appear in interconsonantal position.

The *e*-grade in **preks'ə/e-* 'ask' cannot be original itself, but must have come about through restoration of the root, due to the heavy cluster in **prk-ske/o-*,¹³⁰ see Hackstein (1995: 75), Peyrot (2013a: 519 fn. 106). This restoration certainly precedes PT (cf. *^Bprek-şə/se-*, *^Aprak-şä/sa-*) and is potentially much earlier than that; this stem did not undergo epenthesis like other **ske/o-* presents to roots in **Cark-*, e.g., **kark-əşşə/ske-* to **kark-* 'bind', indicating that **pərk-sk'ə/e-* did not exist in that form at that time. Instead, the attested stem seems have to have provided an input for the

¹³⁰ The **k* of the root was probably lost and restored already in Proto-Indo-European; see the LIV (2001: 491 fn. 4), Peyrot (2013a: 519 fn. 106).

sound change $*Vksk > *Vks$ proposed by Peyrot (2013a: 516–20). The e -grade in $*preks\text{'}\partial/e-$ would thus be available relatively early to provide a model for $*kl\acute{a}ws\text{'}\partial/e- > *kl\acute{e}ws\text{'}\partial/e-$.

It is unclear whether ${}^Bmens-$ ‘be sad’ can be explained the same way. The verb has competing stems in the present, a prs.-subj.[2] $mens\text{'}\partial/e-$, mid.3sg. $mem\acute{s}t\acute{a}r$, and na-prs.[6] $mants\acute{o}na-$, mid.3sg. $mantsanat\acute{a}r$. Accompanying these are an a -subj.[5] $m\acute{a}ntsa-$ and an a -prt.[1] $mants\acute{a}-$ (Malzahn 2010: 748; Peyrot 2013a: 565, 791). Four other verbs inflect in this pattern with e -grade $\text{'}\partial/e$ -prs.[2] and a -grade a -subj.[5] and a -prt.[1] in Tocharian B: $klep-$ ‘touch’, $tresk-$ ‘chew’, $p\acute{a}nn-$ ‘stretch’ and $r\acute{a}ss-$ ‘tear out’, meaning that the prt.[6] is most likely innovative (Peyrot 2013a: 169, 565). The etymology of this verb is not fully assured. It has been connected to PIE $*menth_2-$ ‘stir’ by Adams (1999: 454; 2013: 504) and Malzahn (2005: 397), but this cannot account for the t -less present stem. The more promising alternative is PIE $*men-$ ‘think’ (LIV 2001: 435–6). This root is reflected in Ved. $\acute{a}mata$ ‘has thought of’ and OAv. $man\acute{t}\acute{a}$ ‘contemplate’, but there is also an s -aorist attested: Ved. aor.ind.mid.3sg. $\acute{a}ma\acute{n}sta$ ‘remembered’, OAv. aor.inj.mid.1sg. $m\acute{a}n\acute{h}\bar{i}$ ‘regarded as’. Narten (1964: 187–8) and Harðarson (1993b: 104) take the s -aorist as secondary, but the two formations show a difference in meaning also found in the present: Ved. prs.ind.mid.3sg. $m\acute{a}nyate$ ‘think’, $manut\acute{e}$ ‘remember, respect’ (Böhtlingk & Roth 1868: 508–9). It is thus possible that the s -aorist is fairly old. Whether it can underlie PT $*mens-$, however, is more uncertain, as the semantic development ‘remember, respect’ $\Rightarrow$ ‘be sad’ is more difficult than ‘think, contemplate’ $\Rightarrow$ ‘be sad’. Rejecting the etymology and searching for a new origin of PT $*mens-$ is not appealing either; perhaps we must recon with a secondarily sigmatised stem from $*men-$: $*men-$ ‘think, contemplate’ $\rightarrow$ PT $*men-s-$ ‘be contemplative (?)’ $\Rightarrow$ ‘be sad’.

2.6. Excursus on the root aorist in Tocharian

In the previous sections, I have argued that several structural changes in the early Tocharian verbal system were instigated by the gradual drop of final consonants, in particular $*-t$. This can explain why the s -preterite 3sg. ending turns up as $*-sa$ ($< *sat \leftarrow *-s < *-st$) and why, later, the s -suffix was introduced into the paradigms of “long-vowel” roots like $*d^heh_1-$ ‘put’. Yet I think there is even a third realm where the drop of $*-t$ drove important changes.

Since Pedersen (1941: 185–6), it has become *communis opinio* that the Proto-Indo-European root aorist, at least to some extent, is continued in the a -final prt.[1] in transitive *set*-roots with a Proto-Indo-European nasal present and root aorist

(Schmidt 1982: 368–71; Pinault 2008: 597–8; Kim 2009b; Peyrot 2013a: 546–7). While many of the *a*-prt.[1] forms found in the intransitive patterns are unpalatalised and probably innovative (Kim 2009b: 21–2), it must be considered at least likely that some of them continue inherited root aorists in a similar fashion to their transitive counterpart. The broad strokes of the creation of the *a*-preterite are clear enough: the vocalised laryngeal in root aorists to *seṭ*-roots spread to root aorists to *aniṭ*-roots. This led to the creation of the suffix **-a-* as the near ubiquitous marker of the preterite in Tocharian. With the suggestion that **t > Ø/C_#* happened before **t > Ø/V_#*, we are able to explain why this suffix became so successful.

In Table 2.15, I outline the expected development of a **CeCH*-root aorist before the introduction of the perfect endings. The example paradigm is more or less faithfully preserved in Tocharian A: prt.act.3sg. *cärk*, 3pl. *tarkar* ‘emitted’.¹³¹ We only need to assume two minor changes in the 3pl.: the loss of final **-t* after a consonant and the levelling of stem-final **-a-*. We find the result of the first change in the TB prs.-sbj.act.3pl. ending *-m* and the present-preterite 3pl. ^B*latem* ‘went out’, ^B*kamem* ‘came’. The latter change is trivial, and unnecessary in roots with final **-h₂-*, since the ending **-ent* would regularly be coloured to **-ant*.

Table 2.15: Development of a **CeCH*-root preterite

post-PIE ¹³²	pre-PT	<i>*t > Ø/C_#</i>	levelling
‘let go’	‘emit’		
<i>*térkHm</i>	<i>> *t’arkam</i>	<i>> *t’arkam</i>	
<i>*térkHs</i>	<i>> *t’arkas</i>	<i>> *t’arkas</i>	
<i>*térkHt</i>	<i>> *t’arkat</i>	<i>> *t’arkat</i>	
<i>*trkHme</i>	<i>> *tarkam’ə</i>	<i>> *tarkam’ə</i>	
<i>*trkHte</i>	<i>> *tarkat’ə</i>	<i>> *tarkat’ə</i>	
<i>*trkHent</i>	<i>> *tarkənt</i>	<i>> *tarkən</i>	<i>→ *tarkan</i>

The expected development of **Ce(R)C*-roots is different. Here, no final

¹³¹ The plural stem has been levelled in Tocharian B: prt.act.3sg. *carka*, 3pl. *cärkäre*, but the reflex of the original zero-grade can still be found in the middle: prt.mid.3sg. *tärkäte*, 3pl. *tärkānte*.

¹³² The only cognate of ^B*tarka-*, ^A*tärkā-* ‘emit, release’ is Hitt. *tarna-* ‘let (go), allow’, making it difficult to determine the stops. The LIV (2001: 635) reconstructs this root **TerKh₂-*, but

*-a- developed, resulting in a cluster of at least two consonants in the 2sg. and 3sg. After the loss of *-t in the 3sg., this form would have been considered undermarked. The easiest way to fix this would be to import the well-marked 3sg. *-at from the *CeCH*-roots, just as in the s-preterite (2.3.6). The two paradigms, **Ce(R)C*-root preterite and s-preterite, were not treated the same from that point forward, however. In the **Ce(R)C*-root preterite, the *-a-suffix was extended to the rest of the paradigm, whereas it remained isolated in the 3sg. in the s-preterite; see Table 2.7. From there, *-a- could be levelled to the rest of the paradigm. The pressure to level the suffix *-a- would naturally be greater in the **Ce(R)C*-root preterite than in the s-preterite, since it shared its ablaut pattern, **é/Ø* > **ə/ə*, with the **CeCH*-root aorist. In addition, the s-preterite was still marked with the suffix *-s- at this point.

Table 2.16: Development of the **Ce(R)C*-root preterite

	PIE ‘moved away’		Pre-PT		*t > Ø/C_#		renewal		levelling
1sg.	*u̯éig̃m̥	>	*w’aykam					→	*w’ayk-a-w
2sg.	*u̯éigs	>	*w’ayks					→	*w’ayk-a-s
3sg.	*u̯éigt	>	*w’aykt	>	*w’ayk	→	*w’ayk-at	>	*w’ayk-a-t
1pl.	*u̯igme	>	*w’akm’ə					→	*w’ayk-a-m’ə
2pl.	*u̯igte	>	*w’akt’ə					→	*w’ayk-a-t’ə
3pl.	*u̯igent	>	*w’akənt	>	*w’əkən			→	*w’ayk-a-n

Table 2.17: Further developments of the a-preterite

		stacking		substitution		*t > Ø/C_#		PT ‘dwindled’
1sg.	* <i>w’aykaw</i>	→	* <i>w’aykaw-a</i>			>		* <i>w’aykawa</i>
2sg.	* <i>w’aykas</i>	→	* <i>w’aykas-ta</i>			>		* <i>w’aykasta</i>
3sg.	* <i>w’aykat</i>				>	* <i>w’ayka</i>	>	* <i>w’ayka</i>
1pl.	* <i>w’akam’ə</i>					>		* <i>w’akam’ə</i>
2pl.	* <i>w’akat’ə</i>			→	* <i>w’əka-sə</i>	>		* <i>w’əkasa</i>
3pl.	* <i>w’əkan</i>			→	* <i>w’əka-r</i>	→		* <i>w’əkare</i>

Kloekhorst (2008: 847) adduces convincing arguments from both Hittite and Tocharian that we should reconstruct **ter’(k)h_{1/3}*-. I give the form in “Post-PIE” here, because it makes it easier to read the paradigm and because the exact phonological details of the Proto-Indo-European root are irrelevant to the problem at hand.

As in the *s*-preterite, I think we can explain the attested 1sg. and 2sg. endings as the result of stacking; see Table 2.17. The 2pl. and 3pl. endings must have been replaced with the perfect endings entirely. However, the perfect 2pl. ending $*-é > *-ʾ$ would have been weak, especially after the full-vowel $*a$. It is therefore understandable that it was the *s*-preterite 2pl. $*-sə$, not $*-ʾ$, that was taken over by the *a*-preterite. At some point, the final $*-t$ was lost after vowels in the 3sg. Both *s*- and *a*-preterite would be susceptible to this change, causing the preterite active 3sg. ending to be interpretable as $*-Ø$: *a*-prt. $*-a-Ø$, *s*-prt. $*-sa-Ø$.

The final development before we arrive at the attested *a*-preterite is the change from $*-r$ to $*-re$ in the 3pl. This change is somewhat of a mystery, since the final ^B-e is a feature of the middle rather than the active; cf. TB prt.mid.3sg. *-te*, 1pl. *-mte*, 3pl. *-nte*. In Tocharian B, it sometimes drops before an object marker in late texts: *a*-prt.[1].act.3pl. *lyakāre* ‘saw’, but 3pl.-obj.3sg. *lyakār-ne*, 3pl.-obj.pl. *lyakār-me* (Peyrot 2008: 134–6). In Tocharian A, the final vowel never appears before an object clitic in *a*-preterites, indicating that the vowel-final ending is innovative (Pinault 2008: 628; Peyrot 2013a: 419; *pace* Malzahn 2010: 43–4). Peyrot tentatively suggests that homonymy with the ipv.mid.sg. ending $*-r$ could have played a part. This would explain why only the *a*-preterites received the $*-e$, since the imperative to *s*-preterites is marked with the suffix $*-sa-$ and thus differ from the prt.3pl., but it is difficult to understand why it was the preterite active and not the imperative middle that was altered in analogy with the preterite middle. This ending must remain a mystery for the time being.

With the majority of inherited preterites marked with stem-final $*-a-$, it is no wonder that it continued to gain productivity. The point of this excursus is not to account for the development of all individual root aorists into Tocharian. I think the mechanism sketched out in Table 2.16 above goes a long way in explaining the majority of cases. In Chapter 4, the stem patterns of some specific verbs will be revisited.

2.7. Chapter conclusions

The survey of formal features and functions in section 2.3 shows that, despite the surface resemblance of the Hittite *hi*-preterite and the Tocharian *s*-preterite, many assumptions are needed in both branches in order to connect the paradigms. Rather, the Tocharian *s*-preterite is in closer agreement with the CIE *s*-aorist than the Hittite *hi*-conjugation on most structural parameters, such as stem cognates and function, as well as formal features like the ablaut and the sigmatic middle; see 2.3.10. It is

therefore much more likely that the Tocharian *s*-preterite descends from the fully sigmatic aorist formation, also reconstructible for, e.g., Greek and Indo-Iranian, than from the proto-paradigm underlying the Hittite *hi*-conjugation preterite. The *s*-preterite with its limited *s*-suffix in Tocharian therefore cannot be used as an argument for the Tocharian Second hypothesis.

The *s*-aorist can also account for the accompanying root subjunctive of class [1] with some base assumptions, such as depalatalisation and loss of **-s-* in most forms of the paradigm. Whether the subjunctive and the preterite were separate formations from the earliest stage, reflecting the injunctive and the indicative *s*-aorist, respectively, is a likely possibility, but it is also possible that both grew from a single paradigm; see 2.4. At least, it is too uncertain to be used as evidence for the augment in Tocharian.

s-aorist stems do not seem to have become reanalysed as roots to a very large extent. This is understandable since the suffix was lost in many environments. There are, however, four verbs which end in a non-etymological **-s-* in Tocharian: **t'es/tas/tās-* 'put' (suppl. **tatta-*) from **d^heh₁-*, the *s*-imperfect *^Akñas-* < **kñes-* 'know' from **gneh₃-* 'recognise', and the presents **kléws-* 'hear' and **mens-* 'be sad'. The easiest way to account for the two former verbs is to assume that they were transferred to the *s*-preterite in the pre-stages of Tocharian when the paradigm was still fully sigmatic; see 2.5.1 and 2.5.2. After the loss of interconsonantal **-s-*, their suffix was reanalysed as part of the root, and they were readapted to the *s*-preterite paradigm. The two *s*-final verbs with *e*-grade in the present, **kléws-* 'hear' and **mens-* 'be sad', cannot easily be accounted for this way.

Finally, I presented a hypothesis about some of the early, defining developments of the Proto-Indo-European aorist in Tocharian. The distribution of known inherited root aorists and *s*-aorists in the preterite classes of Tocharian indicate that root structure played an important role. Some root aorists with the root structure **CeH-* merged in the ablaut with inherited *s*-aorists and were transferred to the *s*-preterite, while root aorists to verbs with the structure **Ce(R)C-* were incorporated into the *a*-preterite because they had lost their 3sg. **-t* and needed better marking (by *a*-prt. 3sg. **-at*). This scenario is quite probable given the available facts and shows what we may accomplish with a combination of internal, comparative and forward reconstruction.

Chapter 3 The simple thematic present

3.1. The paucity of simple thematic presents

In his 1978 treatment of the development of the Tocharian verbal system, Adams notes that simple thematic root stems, i.e. presents and subjunctives of class [2] that do not derive from earlier complex thematic stems, are infrequent in Tocharian. In many other Indo-European branches, this stem type with acrostatic inflection, stable *e*-grade, and the suffix **-e/o-* (LIV type 1n) is common, deriving from both demonstrably inherited stems and from branch-internal productivity. About this discrepancy, Adams writes:

“The paucity of such forms, inherited or otherwise, in Tocharian B (or A) contrasts markedly with their extension in most Indo-European dialects and is certainly to be accounted another archaism of the verbal system of Common Tocharian” (Adams 1978: 280)

Around the turn of the current century, the theory that the low degree of inherited **e/o*-presents in Tocharian represents an archaism was developed in detail by Ringe (1998: 34–5; 2000) and Jasanoff (1998; 2003: 224–7) independently. They both argue that there are very few inherited **e/o*-presents in the Tocharian lexicon and that this represents an archaism; see Table 3.1. Clackson (2007: 154–5), Kim (2010: 191–2), and Lundquist & Yates (2017: 2162–3) also belong to the supporters of the theory.

The Tocharian situation, combined with the complete lack of the simple thematic verbal suffix in Anatolian, led Jasanoff (1998: 313–4) and Ringe (2000: 137–8) to suggest that the history of the simple thematic present mirrors that of the Indo-European family tree; see Figure 3.1. Ringe interprets the lack of the simple thematic

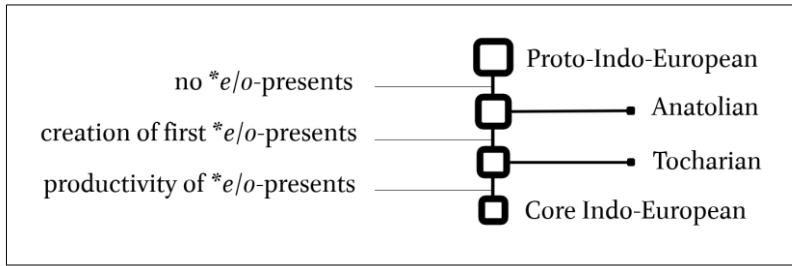
stem as an indication that the earliest Proto-Indo-European formed neither simple thematic presents nor subjunctives. He takes these as innovations of post-Anatolian Indo-European, starting in the subjunctive, since this has more cognate stems in the Tocharian data. According to his theory, the simple thematic present only became productive after Tocharian split off, starting with widespread reanalysis of subjunctive stems as present stems. This group includes **kléje/o-* ‘lean’, **léǵhe/o-* ‘lie down’, **gʷéme/o-* ‘step’, **ǵénh₁e/o-* ‘be born’, **léuke/o-* ‘get light’, **uéige/o-* ‘yield’, **bʰélge/o-* ‘blaze’, and **spérǵhe/o-* ‘hurry (vel sim.)’,¹³³ which all show cognates in Tocharian (Ringe 2000: 136).

Table 3.1: Inherited **e/o-*presents according to Jasanoff and Ringe

Tocharian			PIE	
prs.	TB <i>pər-’ə/e-</i> TA <i>pär-’ä/a-</i>	‘carry, take’	<i>*bʰér-e/o-</i>	‘carry’
prs.	TB <i>ak-’ə/e-</i> TA <i>āk-’ä/a-</i>	‘lead’	<i>*h₂eǵ-e/o-</i>	‘drive’
prs.-sbj.	TB <i>śay-’ə/e-</i> TA <i>śāw-’ə/e-</i>	‘live’	<i>*ǵʷih₃u-e/o-</i> ^α	‘live’
(Jasanoff 1998: 313–4; Ringe 2000: 125–6)				
^α Included by Ringe, but not by Jasanoff who analyses it as a characterised present <i>*ǵʷih₃-ue/o-</i> .				

Jasanoff’s (1998) hypothesis differs to some degree. He proposes that the stem **CéC-e/o-* was the regular way to form subjunctives in Proto-Indo-European to stems with Narten ablaut, i.e. acrostatic **é/é-*ablaut; he divides these stems into two morphological categories. Updating the proposal for the emergence of the simple thematic present by Watkins (1969), Jasanoff (1998: 305–6) suggests that the first type, exemplified by **bʰéreti*, was an emergent present category in Proto-Indo-European based on roots forming Narten presents: **bʰérti*, **h₂éǵti*, and **léǵti*. He proposes that the new **bʰéreti*-type present ousted the original acrostatic stem as a present in the proto-language before the separation of Tocharian. The second type, the **uéǵheti*-

¹³³ Reconstructions and meanings, according to Ringe (2000: 136).

Figure 3.1: Emergence of the **e/o*-presents according to Jasanoff and Ringe

type,¹³⁴ consisted of original asigmatic subjunctives of presigmatic **h₂e*-conjugation aorists; see Jasanoff (2003: 174–214; 2019b) and section 4.5 below. These were not employed as presents until after the Tocharian branch had separated from the family unity. For both Jasanoff and Ringe, the emergence of the simple thematic stem **CéC-e/o-* as a present stem formant is thus correlated with the Indo-European family tree according to the Indo-Anatolian and the Tocharian Second hypotheses; see Figure 3.1.

The question relevant to the current thesis is whether the simple thematic present can be used as a cladistic argument in favour of Tocharian Second.¹³⁵ This leads to a methodological issue. There can be no doubt that simple thematic presents were inherited into Tocharian from its Indo-European predecessor. The existence of the *ʾə/e*-prs.[2] stems in Table 3.1 shows definitively that the existence of the simple thematic present can be posited to an Indo-European prestage which included Tocharian. Instead, it is the productivity of the stem class that is meant to be innovative.

However, CIE ‘productivity’ is not a concrete state that can be compared with another state, but rather a cover term for several parallel innovations in individual lexemes. Strictly speaking, ‘productivity’ cannot be used as a cladistic argument in its own right; innovation of the CIE languages must be proven on the lexical level. If no innovation can be proven for the individual words, it is more likely that the few simple thematic presents that we find are relics. In that case, the Tocharian situation would be due to innovation on the Tocharian side; as Rasmussen puts it:

¹³⁴ Also dubbed the **néġHeti*-type in Jasanoff (2003: 227).

¹³⁵ I presented the data and main points of this chapter at the Arbeitstagung der Indogermanischen Gesellschaft “The Secondary homelands of the Indo-European languages” at Universiteit Leiden, 6 September 2022.

“They [**pər-’ə/e-*, **ak-’ə/e-*] could also be the only ones remaining out of a greater number of old thematic presents which were otherwise replaced by secondary formations in Tocharian.” (Rasmussen 2002: 180)¹³⁶

In order to use the simple thematic present for the branching of Tocharian, we must go through the data, lexeme by lexeme, to determine whether Tocharian shows evidence of archaism or secondary replacement.

3.1.1. Data collection

The goal of this chapter is to test the idea that the lack of simple thematic presents reflects an archaic state in Tocharian. Adams (1978: 279–80), Ringe (2000) and Jasanoff (1998) use what we may call a stem cognate approach, pairing simple thematic class [2] stems, both present and subjunctive, in Tocharian with simple thematic presents elsewhere.

In this chapter, I will take a root cognate approach, matching Tocharian verbal roots to verbs which seem to have a reconstructible simple thematic present elsewhere. The goal is to examine verbal roots which are attested in Tocharian in any stem class and have a securely reconstructible simple thematic present in CIE. I used the LIV (2001) to identify verbal roots attested in at least two Indo-European branches that do not form a higher order subnode with one another, i.e., excluding stems solely found in Indic and Iranian, Baltic and Slavic, or Italic and Celtic, respectively. This resulted in more than 100 roots, which were filtered once more to find the ones attested in at least three branches or more. Subsequently, I matched as many as possible with Tocharian cognates to answer the question: What type of stem formation does Tocharian show in verbs with CIE **e/o*-present cognates? In order to prove that the bulk of productivity happened after the split of the Tocharian branch, we would expect at least some Tocharian verbs to show morphological archaisms.

In Table 3.2, there is an overview of the 16 Proto-Indo-European roots which form **e/o*-presents in at least three Indo-European branches and have a Tocharian root cognate. They are ordered according to their present stem in Tocharian. The verbs that have several present stems attested are listed under their traditional ‘Grundverb’ present. In addition to these 16 roots, I include discussions on two verbs: **klej-* ‘lean (against)’ and **dem(H)-* ‘build, grow’. The simple thematic presents to both verbs are only attested in two branches, but there are other indications that the **e/o*-present is

¹³⁶ See also Malzahn (2010: 364–5) and Villanueva Svensson (2021: 267). The addition in brackets is mine.

old. In 3.5.2, I discuss the root **sek^w*- ‘follow’ which has been connected to the Tocharian A verb *sākā-*; however, recent findings suggest that this connection should be abandoned (Kremmer 2022: 130).

Table 3.2: Roots with CIE **e/o*-presents according to their Tocharian present formation

ʾə/e-prs.[2]	root prs.[1, 5]	Tocharian present formation		
		<i>na</i> -prs.[6]	<i>e</i> -, <i>o</i> -prs. [3, 4]	<i>s</i> -, <i>sk</i> -prs. [8, 9]
<i>*b^her-</i>	<i>*h₁leng^{wh}-</i>	<i>*uert-</i>	<i>*b^heud^h-</i>	<i>*pek^w-</i>
‘carry’	‘move (easily)’	‘turn’	‘be aware’	‘cook’
<i>*h₂eǵ-</i>	<i>*nes-</i>		<i>*der-</i>	<i>*d^heg^{wh}-</i>
‘lead’	‘escape’		‘tear (apart)’	‘burn’
<i>*g^wieh₃-u-</i>	<i>*lēǵ-</i>		<i>*ueiǵ-</i>	<i>*pleu-</i>
‘live’	‘gather’		‘move away’	‘swim’
<i>*leg^h-</i>			<i>*meith₂-</i>	<i>*ueg^h-</i>
‘lie down’			‘exchange’	‘drive’

3.2. Stem cognates with Tocharian simple thematic presents

3.2.1. **b^her-*, **h₂eǵ-*, and **g^wieh₃u-*

The three verbs that indisputably show inherited **e/o*-presents in Tocharian are ^B*ak-*, ^A*āk-* ‘lead’, ^B*pār-*, ^A*pār-* ‘carry, bring’ and ^B*śay-/śaw-*, ^A*śāw-* ‘live’; see Table 3.3. In Tocharian, the two first verbs are attested only in the present and are supplied by different roots in all other stems. ^B*ak-*, ^A*āk-* is supplied with ^B*waya-*, ^A*wā-* outside the present. The suppletion is more complex with ^B*pār-*, ^A*pār-*. In Tocharian A, the verb *kāmā-* ‘bring’ supplies the non-present forms, but in Tocharian B, only the preterite and preterite participle is expressed with *kama-* ‘carry, bring’. Subjunctive and imperative forms from the verb ^B*as-* ‘fetch’ as well as subjunctive and optative middle forms from the verb ^B*ay-* ‘A give; M take’ are used to expressed the remaining forms (Malzahn 2010: 519–20, 706–7; Peyrot 2013a: 721, 724, 773). This appears to reflect the inherited state of affairs for **b^her-* and **h₂eǵ-*, the underlying Proto-Indo-European roots of ^B*pār-*, ^A*pār-* ‘carry, bring’ and ^B*ak-*, ^A*āk-* ‘lead’; no aorist or perfect stems can

be securely reconstructed to either root (LIV 2001: 76–7, 255–6).

There are more stems found to the verb ^B*śay-/śaw-*, ^A*śāw-* ‘live’, which employs the thematic stem as a subjunctive as well as a present and forms an *a*-preterite which can be reconstructed to Proto-Tocharian: **śāwa-*. In both languages, a morphologically causative verb with the same meaning is also attested (Malzahn 2010: 916–9; Peyrot 2013a: 825).

Table 3.3: Example forms and comparanda for **pər-* ‘carry’, **ak-* ‘lead’, and **śaw-* ‘live’

Tocharian prs.[2]		Indo-European comparanda
TB <i>ak-’ə/e-</i>	act.3sg. <i>āsām</i> , 3pl. <i>ākeṃ</i>	Ved. <i>ájati</i> , YAv. <i>azaiti</i> , Gk. <i>άγω</i> , Arm. <i>acem</i> , Lat. <i>agō</i> , OIr. <i>-aig</i> ‘drive (tr.); lead’ ON <i>aka</i> ‘drive (itr.)’
TA <i>āk-’ä/a-</i>	act.3pl. <i>ākeñc</i> , mid.3sg. <i>āštär</i>	
TB <i>pər-’ə/e-</i>	act.3sg. <i>parām</i> , m-ptcp. <i>premane</i>	Ved. <i>bhárati</i> , OAv. <i>baraitī</i> , Gk. <i>φέρω</i> , Arm. <i>berem</i> , Lat. <i>ferō</i> , OIr. <i>-beir</i> , Got. <i>bairan</i> ‘carry, bring’, OCS <i>berq</i> ‘gather’
TA <i>pär-’ä/a-</i>	mid.3sg. <i>pärtär</i> , 1pl. <i>pramtär</i>	
TB <i>śaw-’ə/e-</i>	act.3sg. <i>śaim</i> , 3pl. <i>śāyem</i>	Ved. <i>jívatī</i> , YAv. <i>juuaiti</i> , Gk. <i>ζώω</i> , Lat. <i>vīvō</i> , Latv. <i>dzīvu</i> , OCS <i>živq</i> ‘live’
TA <i>śāw-’ä/a-</i>	act.3sg. <i>śoš</i> , 3pl. <i>śāweñc</i>	

(Ringe 2000: 125–6; LIV 2001: 76, 215–6, 255–6; Malzahn 2010: 519–20, 706–7, 916–8)

It was noted by Ringe (1996: 142) that the expected palatalisation in the Tocharian B present *pər’ə/e-* is missing: **b^here/o-* should have given †^B*pír-’ə/e-*; cf. **pénk^we* ‘5’ > **piñśə* > **piś* ‘5’. Kim (2010) argues that there is no model on which the stem could have depalatalised within Tocharian and consequently reconstructs zero-grade in the pre-Proto-Tocharian paradigm. He argues that this reflects an original alternation between accented full-grade and unaccented zero-grade, which was levelled in separate ways in Tocharian and “Nuclear Indo-European”, respectively. The lack of initial palatalisation in the Tocharian *’ə/e-prs.[2]*—as well as the **šə/se*-present class [8]—should therefore be taken as an archaism, according to Kim (2010: 200–2). This view was since retracted by Kim (2018b), who now explains the zero-grade reflex as the result of conflation between the simple thematic present and a Narten present, proposed by Jasanoff (1998: 313); see above in Chapter 3. It is possible that the expected palatalisation was eliminated in pre-Proto-Tocharian due to forms with

suffix stress which would undergo syncope in the first syllable: **p'arán-ne* > **prán-ne* (Peyrot 2013a: 466). It is in any case worth noting that another inherited thematic present with evidence of full-grade is found in ^B*lak-* 'lie (down)'; see 3.2.2.

The simple thematic present to **g^wíeh₃-u-* 'live' shows a root extension **-u-* which is absent in other iterations of the root, e.g., in the noun Ved. *gáya-*, Av. *gaiia-* 'life' < **g^wóih₃-o-*,¹³⁷ and has zero-grade in the root. In light of the well-attested adjective **g^wih₃uó-* 'alive' (cf., e.g., Ved. *jīvā-*, Gk. ζῶς, Lat. *vīvus*, OCS *živъ*, Got. *qius* 'alive'), the origin of the thematic present in this verb must be denominative somehow (Ringe 2000: 126; Villanueva Svensson 2021: 273–4). The LIV (2001: 215–6 fn. 6) posits branch-internal thematisation because of the full-grade evident in Gk. ζῶω 'live' < **g^wíéh₃ue/o-*, but as Villanueva Svensson (2021: 273) points out, the Greek reflex of the adjective shows the same full-grade reflex, ζῶς < **g^wíéh₃uó-*, which could have influenced the verb. Tocharian can reflect either full-grade or zero-grade, as **eh₃* > **ō* > **a* and **h₃* > **a* merge into PT **a*,¹³⁸ but there is no reason to assume that Tocharian does not reflect the more common preform **g^wíh₃ue/o-*.

In summary, it is clear that the three verbs ^B*ak-*, ^A*āk-* 'lead', ^B*pār-*, ^A*pār-* 'carry' and ^B*śay-/saw-*, ^A*śāw-* 'live' reflect inherited simple thematic presents. Furthermore, their prevalent attestation in the Indo-European branches and, in the case of **b^her-* and **h₂eg-*, lack of other aspectual stems indicates that they belong to the central core of the formation.

3.2.2. **leg^h-* 'lie down'

**leg^h-* 'lie down' is one of two verbs in Tocharian which according to Ringe (2000: 129–30) reflect old root aorist subjunctives but have—at least partly—present function in Tocharian and in the CIE languages. For cladistics, we must ask whether it is a likely scenario that these two verbs, **leg^h-* and **klej-* 'lean (against)' (3.2.3), underwent parallel developments from the subjunctive to the present, which must be assumed in Ringe's scenario.

The Tocharian verb is ^B*lak-* 'lie (down)'. It is attested only in Tocharian B in the *ʔ/e*-prs.-sbj.[2] active with no suppletive stems; cf. prs.-sbj.1sg. *lyakau*, 3sg. *lyasām*,

¹³⁷ The unextended root can probably be found in ^B*śātre* 'grain', if from **g^wih₃-tro-* 'Lebensmittel'; this seems more straightforward than the proposal of Adams (2013: 682) who reconstructs **g^wih₃-uó-tro-* and assumes **-awe-* > **-a-* with reference to W. Winter.

¹³⁸ For (post)-PIE **ō* > **a*, see Pinault (2008: 421), Hackstein (2017: 1313–4).

3pl. *lyakem*, opt.3sg. *lyasi*.¹³⁹ In Tocharian B, the meaning of the verb is both stative 'lie' and telic-dynamic 'lie (down)'.

Simple thematic cognates include Gk. Hsch. λέχεται κοιμάται 'lies down in bed', Faliscan *lecet* 'lies', Got. *ligan* 'lie' and possibly OIr. *laigid* 'lies (down)' (LIV 2001: 398). There is also some evidence for a **ie/o*-present in Germanic, e.g. ON *liggja*, OEng. *licgan*, OHG *liggen*, which Ringe (2000: 129–30) takes for original. It seems more likely to me, however, that the Germanic **ie/o*-stem is innovative, probably analogically to **sitjan* 'to sit'; cf. ON *sitja*, OEng. *sittan*, OHG *sizzen*. Ringe reconstructs a root aorist on the basis of Gk. (ἔ)λεχτο '(s)he lay down' with eventive semantics opposite stative **kei-* 'lie'. He then argues that *^Blak-ə/e-* cannot reflect an original thematic present, since these are not found with root aorists. The interpretation of the Greek form as an original root aorist is debated; for support, see LIV (2001: 398), Willi (2018: 322–3). Other scholars interpret it as an *s*-aorist on account of the full-grade in the root **h₁é-leg^hsto > *elek^hsto > *elek^hto > (ἔ)λεχτο* (Watkins 1962: 55; Harðarson 1993b: 204–5). Willi, however, argues that the full-grade could have been introduced to avoid an undesirable zero-grade **lg^h-to*.

Looking at the telic semantics of the root 'lie down', a root aorist is preferable, but Ringe's structural argument does not hold up. There are several examples of verbs with both root aorists and thematic presents reconstructible for Proto-Indo-European, even if some of these stand next to more archaic looking formations such as nasal presents and reduplicated presents, e.g. in **b^heyd^h-* 'be awake', **uert-* 'turn (itr.)', **sek^w-* 'follow'.¹⁴⁰ Since Ringe's approach is primarily based on stem cognates, it is curious that he chooses to weigh the somewhat circumstantially determined Greek root aorist heavier than the three instances of thematic presents attested to **leg^h-*. We should therefore include *^Blak-ə/e-* in the group of inherited thematic presents in Tocharian.

3.2.3. **klei-* 'lean'

Another verb that should be included here is *^Bkāl-, ^Akāl-* 'stand'. It is suppletive outside the present with *^Bstama-, ^Aštāmā-* expressing the subjunctive, the preterite and related stems. The verb forms an *ə/e*-prs.[2] in Tocharian B, e.g., 3sg. *kaltär*, 3pl.

¹³⁹ The TA prt.ptcp. *lalku* (A12 b5) may belong to this verb as well if to an unattested transitive *s*-preterite: *klošäm tsru lalku* 'make the ears lie flat a little', but it may also be derived from *^Alänk-* 'dangle' (Malzahn 2010: 860). Perhaps there is a Tocharian B equivalent prt.ptcp. *leleku* (IOLToch257 a3), but the meaning of that form is uncertain.

¹⁴⁰ All three of these verbs happen to be treated in this chapter (3.4.5, 3.5.1 and 3.5.2).

klyentär. Tocharian A shows conflicting evidence pointing to both a root prs.[1] and an 'ə/e-prs.[2]: 3sg. *kälytär*, 3pl. *klyantär*, ag.n. *klyant* show the regular stem alternation of an 'ə/e-prs.[2] *käl'-ä-* > *käl-*, *käl'-a-* > *kly-a-*, but 1sg. *kälymār* and the *m*-participle *kälymām* indicate a root present without a suffix.¹⁴¹

There are other verbs in which Tocharian A shows an irregular absence of the thematic vowel *-a-* < PT **-e-* < PIE **-o-*: *m*-ptcp. *pärmām* to *^pär-* 'carry, take', and mid.1sg. *yärs-mār*, *m*-participle *yärs-mām* to *^yärs-* 'show respect' (Malzahn 2010: 363). Since these have *ä*-vocalism in the root, they cannot be explained by vowel weakening, such as in *^tāsmām* 'putting'. However, it is striking that all the apparent root stems occur in forms with *m*-initial endings with full vowels, i.e. *-mār* and *-mām*. The parallelism with *^pärmām* 'carrying' in particular is noteworthy: both *^pär-* and *^käly-* have unpalatalisable root-final consonants, so the regular alternation of the palatalising and non-palatalising allomorphs of the simple thematic suffix is not visible. In addition, both verbs show the expected thematic allomorph in the 3pl.: *^prantär*, *^klyantär*. Since *^pär-* is certainly to be derived from a simple thematic stem in Proto-Tocharian and Proto-Indo-European (cf. 3.2.1), it is highly likely that the solution to the missing suffix *-a-* must be found within pre-Tocharian A and that we should reconstruct a present stem **käl'-ə/e-* in Proto-Tocharian; *pace* Malzahn (2010: 593), Peyrot (2013a: 738). The likeliest option would be an analogical removal of *-a-* before endings with full vowels on the model of the many 'ä/a-prs.[2] verbs that have full vowels in the root (Kim 2007b: 12–3).

Etymologically, *^käl-*, *^käl-* 'stand' must go back to PIE **klej-* 'lean (against)' (LIV 2001: 332); *pace* Adams (2013: 185). There is evidence for a root aorist from Indo-Iranian and Latin: Ved. ind.act.3sg. *ásret* 'leaned against', YAv. inj.mid.3sg. *ni-srīta* 'is assigned', and the Lat. substantivised act.ptcp. *cliēns* 'dependant, client'. Several languages also attest a nasal present: YAv. ind.act.3sg. *-sirīnaoiti* 'leans against (tr.)', Gk. *κλίνω* 'lean against, bend (tr.)', Lat. *inclinō* 'incline', and OHG *hlinen* 'lean (against)', all with various remodellings. The **e/o*-present is found in Indo-Iranian and Baltic: Ved. prs.ind.mid.3sg. *śrayate* 'leans against (itr.)', YAv. prs.inj.mid.3sg. *upa srāiīata* 'leaned against (itr.)', Lith. inf. *šlīeti* 'lean (itr.)', Latv. inf. *slīet* 'support, lean (tr.)' (LIV 2001: 332–3).

Malzahn (2010: 593) objects to a derivation from the simple thematic stem in Tocharian, since she would expect **klej-e-* > **kləyə-* to contract to **-e-*.¹⁴² However, in

¹⁴¹ The expected outcome would be 1sg. *†klyamār* and *†klyamām*, cf. *^klyemane*.

¹⁴² Instead, she suggests that the Tocharian stem goes back to a middle root aorist **kli-to* with a secondary present **kli-tor*. Since the root aorist attested elsewhere is intransitive and takes

light of the reflex of hysterokinetic *i*-stems nom.pl. **-téi-es* > **-t'əyā* > ^B*-ci* (Del Tomba 2023: 231), this cannot be maintained. Ringe (2000: 130) argues that the thematic stem in Tocharian cannot have been a present, due to the evidence of the Indo-European nasal infix stem. This stem is most likely also found in Tocharian in the verb ^B*klāyn-*, ^A*klāyn-* ‘be necessary’ (Peyrot 2013a: 587). This does not preclude that the thematic stem had present function in the proto-language as well. As we have seen, the nasal present and the simple thematic present are attested side by side in Avestan. To conclude that Tocharian continues an older stage (a root aorist subjunctive), even though it is used as a present, might be an example of confirmation bias.

To summarise the last two subsections, for both ^B*lāk-* ‘lie (down)’ and ^B*kāl-*, ^A*kāl-* ‘stand’, it is uneconomical to assume that independent reanalysis from subjunctive to present happened in both Tocharian and CIE, especially since neither of the meanings ‘lean, stand’ or ‘lie down’ would motivate such a reanalysis. These must have been present stems in the proto-language ancestral to Tocharian; see also Villanueva Svensson (2021: 267). Nevertheless, increasing the number of stem cognates from three to five does not change the basic picture. There are still very few **e/o*-presents with direct stem cognates in Tocharian.

The remaining verbs on the list of stem cognates in Ringe (2000: 136) are all found in the subjunctive in Tocharian. Some of these will be treated below, e.g., **uég-e/o-* > **wəyk-ə/e-*. It is quite possible that some of them continue original Proto-Indo-European subjunctives; this is especially likely in the case of **g^wém-e/o-* > **śam-e/o-* (Adams 1988: 99 n. 8; Ringe 2000: 131; Peyrot 2013a: 423–4). However, that in itself does not necessarily constitute an archaism. As pointed out by Hackstein (2004c: 90–1), we find many examples in Tocharian of original present stems used as both presents and subjunctives, e.g., root prs.-sbj.[1].act.1sg. ^B*yam* ‘goes; will go’ < PIE root prs. **h₁ei-/h₁i-* ‘go’. This phenomenon, *praesens pro futuro*, is also found in, for instance, Hittite and modern Germanic languages like English and Danish. One would have to prove that the reanalysis from Proto-Indo-European subjunctive to present stem happened in the ancestor of the CIE languages and not only in individual branches.

3.3. Root cognates with Tocharian root presents

In this section, I examine Indo-European roots which form simple thematic presents

the active voice, the existence of a form **kli-to* is very unlikely.

and have been connected etymologically with Tocharian verbs forming root presents. Because of their morphological simplicity and lack of productivity, Tocharian root presents are the most likely place for morphological archaisms to be preserved.

3.3.1. **h₁leng^{wh}*- ‘move (easily)’

According to the LIV (2001: 247), a simple thematic present is attested in Ved. *rámhate* ‘races’, YAv. *rəṇjaiti* ‘spurs’, OIr. *-ling*, *-lengat* ‘leap’, and OHG *gilingan* ‘succeed’. In Iranian, the active denotes a factitive ‘spur, make swift’, while Vedic attests a causative meaning in *rámhāti* ‘makes race’, also found in an actual causative formation *ramháyati* ‘makes race’ (Jamison 1983: 157). No aorist can be reconstructed for this root.

Peyrot (2013a: 476) connects PT **lank-* ‘hang’, which forms an intransitive root present in both Tocharian A and Tocharian B. In Tocharian B, the only form attested is the *m*-participle ^B*läñkamane* ‘hanging’, referring to breasts (Broomhead 1962: 128). The equivalent Tocharian A form *läñkmām* is also attested, along with a few finite forms, primarily in A8–A9 in the story of the mechanical girl.

4 TA A9 a1–2

cam kipyo : sruksāt āñcām sām pekant läñkäs_{prs.act.3sg.} ^{a2}špinac

‘Out of that shame the painter killed himself: **he is hanging** from a nail’¹⁴³

The two languages also attest forms from both an *s*-transitive paradigm, of which one middle form seems to be intransitive in Tocharian B, and a causative paradigm (Malzahn 2010: 839–40). Since neither a preterite nor a subjunctive stem is attested to the intransitive Tocharian verb (which fits with the lack of an aorist to **h₁leng^{wh}*- in Indo-European), there is no pattern on which the root stem could be productive. We must therefore assume that this formation is primary and that the thematic present of Indo-Iranian, Celtic, and Germanic are innovative (Peyrot 2013a: 476).¹⁴⁴

The root **h₁leng^{wh}*- has also been identified in the adjective ^B*lank_utse* ‘light (in

¹⁴³ See translation by Peyrot (2013a: 279).

¹⁴⁴ Another etymology for the PT verb **lank-* found frequently in the literature is **leng-* (Van Windekens 1976; Mallory & Adams 1997: 62; Adams 2013: 598; tentatively, Malzahn 2010: 841). This etymology can be rejected, however, as the Sanskrit comparandum *rañgant* ‘rock’ is “doubtless artificial” (Whitney 1885: 134) and the Lithuanian *lingúoti* ‘sway, swing’ can be derived from **h₁leng^{wh}*- (Hock et al. 2015: 590).

weight)',¹⁴⁵ in light of the attractive comparison with the *u*-stem adjective found in Ved. *raghú*- 'quick', YAv. *rəuuī*- (f.), and Gk. ἐλαχύς 'small' (Van Windekens 1976: 255–6; Adams 2013: 591; Peyrot 2013a: 476).¹⁴⁶ The Tocharian B adjective has been extended with *-(ts)tse*, but a trace of the *u*-stem is still visible in ^B*lank_utse**. Peyrot (2013a: 476) argues that the semantics of the other Indo-European attestations can be reconciled with the Tocharian evidence through the meaning 'be light'. In the property adjective, the Tocharian meaning is direct, while 'quick', 'easy' and 'small' of the other languages are all fairly straightforward. Since developing the meaning 'hang' from a stative meaning like 'be light' is easier than from a verb of movement like 'move (easily)', dynamic meaning also seems to be innovative in the other Indo-European branches. We can therefore cautiously place the archaic stem pattern of **lank-* among possible arguments for the archaism of Tocharian.¹⁴⁷

3.3.2. **nes-* 'escape, return (home)'

For this root, there is evidence of a root aorist in the Gk. adj. ἄσμενος 'pleased, happy'.¹⁴⁸ In the present, a simple thematic present is attested in Sanskrit *násate* 'closely approaches', Greek νεόμαι 'return', and Gothic *ganisan*, OHG *ginesan* 'be saved, recover', but a reduplicated present is also found in Vedic *ním̐sate* 'kisses' and possibly in Greek νίσσομαι 'go, come' (LIV 2001: 454–5).

The Tocharian verb ^B*nes-*, ^A*nas-* 'be' has long been connected to this verb (Meillet 1911: 456),¹⁴⁹ but the consistent *e*-grade of the root (PT **nes-*) reveals that it cannot reflect a regular root stem with **e/Ø*-ablaut. The verb is suppletive in the finite forms outside the present, but **nes-* is also found in nonfinite forms to a root subj.[1], e.g., Tocharian B inf. *nestsi*, TA vn. *naslune*, as well as in the TA prt.ptpc. *nām̐tsu* which often functions as a copula (Malzahn 2010: 691–2). Due to the lack of initial

¹⁴⁵ Most attested forms show deletion of the velar, ^B*lantse* or ^B*lam̐tse*. The *-u-* is assured by m.obl.sg. ^B*lariwce* (IOLToch127 b6) and m.nom.pl ^B*länk_uci* (THT245 a3).

¹⁴⁶ Rau (2009: 151) discusses this root as a Caland root. The pattern certainly seems to fit the Indo-Iranian pattern of inchoative middle and factitive active thematic presents next to a *u*-stem property adjective; see 3.7.2. If the analysis of the Tocharian data as archaic is correct, it implies that the root was not following this pattern originally.

¹⁴⁷ See 4.5.4 for discussion on the *s*-transitive verb ^B*lank-* 'hang (tr.)' attested next to the archaic intransitive verb.

¹⁴⁸ The Vedic prs.opt.mid.1pl. *nasīmahi* 'may we be united' (RV 2.16.8) is a nonce form (Hoffmann 1976: 483 fn. 3).

¹⁴⁹ For an alternative etymology for PT **nes-*, see Pedersen (1941: 161) and Klingenschmitt (1975: 158).

palatalisation, the most common reconstruction of the root is **nos-*. The most likely predecessor of such a stem is a Proto-Indo-European perfect (Jasanoff 1978: 14; LIV 2001: 455; Kortlandt 2015a: 57).¹⁵⁰ The stative-resultative meaning of a perfect would account for the discrepancy in semantics which is otherwise difficult to reconcile: pf. ‘has arrived’ ⇒ ‘is located’ ⇒ ‘is’.

As the Tocharian root shows both ^B*e-*, ^A*a*-grade and a root-final *-s-*, we could perhaps speculate that it belonged to the group of root aorists that received *s*-aorist morphology in pre-Proto-Tocharian, such as **tes-* ‘put’ ← **d^heh₁-*; see 2.5. One root with the right structure is **(s)neh₁-*, cf. Lat. *neō*, Gk. *νέω* ‘spin’, OIr. *sníid* ‘spins, stitches’, OHG *nāen* ‘sew’, especially is Kloekhorst & Lubotsky (2014: 134) are correct that it originally meant ‘turn, twist’ (with ‘turn’ ⇒ ‘become’). However, we already have this root attested in Tocharian in the specific technical meaning: ^B*naska-*, ^A*nāskā-* ‘spin’, ^B*ṣñor* ‘sinew’ < **sneh₁ur-* ‘cord, sinew’ (Pinault 2001: 132; Malzahn 2002; Adams 2013: 729). In addition, it is unclear why the stem would end up in the present if it were treated like the root aorist **d^heh₁-/d^hh₁-* → prt. **tes-/tas-*.

The TA prt.ptcp. *nām̐tsu* indicates the presence of a TA *ā*-prt.[1] **nāsā-*. The combination of the *e*-grade root prs.[1] ^B*nes-*, ^A*nas-* < PT **nes-* with the possible *a*-prt.[1] **nasa-* is highly reminiscent of the pattern of Tocharian B *e*-grade *’a/e*-prs.[2] *mens-*, *a*-prt.[1] *mant̐sa-* ‘be sad’ (see 2.5.3). Without a certain etymology for the latter, it is difficult to draw further conclusions from this resemblance. The semantics do not lend themselves well to a hypothesis of mutual influence (‘be’ ← ‘arrive, return’, ‘be sad’ possibly ← ‘think, contemplate’). The preterite participle ^A*nām̐tsu*—and its unattested preterite stem **nāsā-*—may rather have been created secondarily created in Tocharian A due to influence from the *ā*-prt.[1] of ^A*tākā-* ‘be’ (Peyrot 2013a: 563).

With regard to the possibility that an archaic present stem preceded the simple thematic present of other languages, there is no evidence that Tocharian continues the reduplicated present, and it is likely that the root present of class [1] continues the perfect, not an original root present. We may conclude that PT **nes-* does not reflect any morphological archaism compared to the rest of Indo-European.

¹⁵⁰ The following year, Jasanoff (1979: 85), followed by Pinault (1989a: 135; 2008: 639), proposed that **nes-* rather formed an **o/e*-present. Later, he argues that ^B*nes-*, ^A*nas-* rather reflect an original Narten present **nēs-* with secondary depalatalisation, whose lengthened grade can be found in the preterite participle ^A*nām̐tsu* (Jasanoff 2003: 224).

3.3.3. **leǵ-* ‘gather’

The reflexes of this root in Greek, Latin, and Albanian agree that the primary present formation is a simple thematic present: Gk. λέγω ‘gather; read; say’, Lat. *legō*, *-ere* ‘gather; read’, Alb. *mbledh* ‘gather; read’ (Demiraj 1997: 261–2; LIV 2001: 397; de Vaan 2008b: 332–3). Outside this stem, the inflection is more uncertain, as Greek points to an *s*-aorist ἔλεξα ‘gathered’, while both Latin and Albanian seem to reflect a lengthened grade: Lat. pf.1sg. *lēgī*, Abl. aor.1sg. *mblódha*¹⁵¹ ‘gathered’. However, compound forms in Latin, e.g., *inter-legere* ‘to understand’, *neg-legere* ‘to neglect’, *diligere* ‘to esteem highly’, which most likely also belong to this verb (Schrijver 1991: 21–2; de Vaan 2008b: 332–3), differ from the simplex in their perfect stem, e.g., pf.1sg. *neglēxi* ‘neglected’.

Since Lane (1948: 307–8), the Tocharian verb ^B*laka-*, ^A*läkā-* ‘see’ has been connected to this root; see also Jasanoff (2003: 193), Adams (2013: 597). Both languages show evidence of a Proto-Tocharian stem pattern with an *a*-prs.-sbj.[5] **laka-*, e.g., TB *a*-sbj.3sg. *lakan* ‘will see’, TA *ā*-prs.-sbj.[5] *lkāš* ‘sees; will see’, and a preterite stem **laka-*, TB *a*-prt.3sg. ^B*lyāka*, TA ipf.3sg. *lyāk* ‘saw’. In Tocharian A, the preterite stem is found in the imperfect, but the *ā*-prs.-sbj.[5] is preserved, whereas an innovative *sk*-prs.[9] has been created in Tocharian B which is gradually replacing the *a*-stem in the present (Peyrot 2013a: 484–5, 807). Recently, Norbruis (2020) has shown that it is quite likely that the verb ^B*palka-*, ^A*pälkā-* ‘look (at)’, which is in a suppletive relationship ^B*laka-*, ^A*läkā-* ‘see’ in some stems, is in fact based on the imperative stem of ^B*laka-*, ^A*läkā-*.

A competing etymology, originating with Meillet (1911: 462–3), connects ^B*laka-*, ^A*läkā-* ‘see’ to PIE **leuk-* ‘light up; shine’, also found in ^B*lawk-*, ^A*läwk-* ‘light up’ (Hackstein 1995; Pinault 1994a: 122–3).¹⁵² Formally, the zero-grade of this root works well for the unpalatalised prs.-sbj. stem, **luk-* > **lək-* → *laka-*, but it does not account for the lengthened grade preterite. It is not clear how the root-final **-a-* of **laka-* could have been introduced analogically in the proto-paradigm comprising both **laka-* ‘see’ and **lawk-* ‘light up’, since we still find both the inherited present and aorist stems to **leuk-* in the paradigm **lawk-* 4.4.1. I therefore find this etymology less likely than **leǵ-* ‘gather’; for more discussion, see Malzahn (2010: 838–9).

The comparison with the lengthened grade cognates in Lat. *lēgī* and Alb. *mblódha* is compelling, because it can explain the lengthened grade preterite in Tocharian as inherited. The diachronic analysis of this ablaut grade is contested, as scholars have

¹⁵¹ With *o* from **ā* < **ē* (LIV 2001: 397 fn. 3; de Vaan 2017: 1739).

¹⁵² Later, Pinault (2008: 585) subscribes to the **leǵ-* etymology for ^B*laka-*, ^A*läkā-*.

suggested both morphological and phonological solutions; see the discussion in Peyrot (2012b: 102–9) and 6.4.1 below.

The question is how to explain the present-subjunctive stem. As an *a*-stem of class [5], it is technically a root stem, but since it goes back to an *aniṭ*-root, the root-final **-a*- cannot be original. Jasanoff (1998: 306–7) puts this verb in the group of verbs forming archaic **e/o*-presents, like **pər-*, due to the lengthened grade imperfect/preterite; compare ipf.act.3sg. ^A*lyāk*, prt.act.3sg. ^B*lyāka* with ipf.mid.3sg. ^A*pārat* ‘carried’. In theory, we could therefore expect ^B*laka-*, ^A*lākā-* to pattern like ^B*pər-*, ^A*pār-* ‘carry’ and ^B*ak-*, ^A*āk-* ‘lead’, but it does not. Instead, three verbs pattern like ^B*laka-* ‘see’ in Tocharian B, in that they have a present-subjunctive *CəCá-*, a preterite *C’aCá-*, as well as a preterite participle without final *-a-*: ^B*śaw(a)-* ‘eat’, ^B*plaw(a)-* ‘lament’, and ^B*law(a)-* ‘rub’ (Peyrot 2012b: 87–90; 2013a: 483–4).¹⁵³ All three of these verbs go back to roots in final laryngeals: **ǵieṽH-* ‘chew’, **mleṽH-* ‘speak’, and **leṽh₃-* ‘wash’ (LIV 2001: 168, 418; Malzahn 2010: 720–1, 853, 923). The verbs in this group seem to have exerted mutual influence on one another, **laka-* providing the pattern for the preterite while receiving the present-subjunctive stem from **śawa-*, **plawa-* ‘lament’, and **lawa-*, which themselves go back to inherited root presents; see Peyrot (2013a: 486–7). This has completely obscured the original present stem, so there is no way to tell whether or not the simple thematic present to **leǵ-* ‘gather’ was inherited into Tocharian. As ‘gather’ ⇒ ‘see’ seems a far more likely semantic development than ‘see’ ⇒ ‘gather’, no archaism can be found in the Tocharian meaning here either.

Wrapping up section 3.3, there is one promising candidate for an archaic present formation in ^B*lank-*, ^A*lānk-* ‘hang (itr.)’, both in terms of semantics and stem formation. For the two other verbs that form root presents in Tocharian matching CIE simple thematic presents, ^B*nes-*, ^A*nas-* ‘be’ and ^B*laka-*, ^A*lākā-* ‘see’, any archaism with respect to stem formation cannot be established.

3.4. Root cognates with Tocharian *e*-presents and *o*-presents

There are four verbs forming Tocharian *e*-presents of class [3] and one showing an *o*-present of class [4] for which there is evidence of a reconstructible simple thematic present, including three which have one attested in three branches or more. In this

¹⁵³ The prs.-subj. of ^B*law(a)-* ‘rub’ is not attested.

dissertation, the term *e*-presents is used for the stem class with the non-alternating suffix ^B*-e-*, ^A*-a-* < PT **-e-*, e.g., *e*-prs.[3].3sg. ^B*mäsketär*, ^A*mäskatär* ‘becomes’, ^B*triketär*, ^A*trikatär* ‘go astray’. The term *o*-present refers to presents formed with the suffix ^B*-o-*, ^A*-ā-* < PT **-o-*. In Tocharian B, *o*-vocalism is also found in the root syllable in this stem, e.g., 3sg. *orotär* to ^B*ara-* ‘cease’, *yototär* to ^B*yata-* ‘be capable’. In Tocharian A, the suffix is subject to vowel weakening in some forms, e.g., 3sg. *aratär*, *m*-ptcp. *armām* to ^A*āra-* ‘cease’, 3sg. *yatatär*, *m*-ptcp. *yatmām* to *yātā-* ‘be capable’.

Both the Tocharian *e*-present of class [3] and *o*-present of class [4] are large categories which must have enjoyed significant productivity during the prehistory of Tocharian. Both present classes take exclusively middle inflection and are overwhelmingly intransitive (Malzahn 2010: 367, 369, 372–4). They are in near complementary distribution. *e*-prs.[3] is generally found to verbs with *ə*-vocalism, while *o*-prs.[4] is formed to verbs with a full vowel in the root.

The discussion of the origin of the *e*-present is too complex to include here. In brief terms, I think that the source of the *e*-present as well as the *e*-subjunctive, formed in the same way, can be found to a large extent in old non-dental 3sg. middle forms extended with Tocharian middle endings: **C(e)C-o* > pre-PT **C^(ʷ)əCe* → **C^(ʷ)əCe-tər* (Jasanoff 1978: 42–3; Kortlandt 1994: 63; Peyrot 2013a: 591–2). This hypothesis is discussed further with a focus on the *e*-subjunctive below in 4.2.2.

3.4.1. **der-* ‘tear, rip (apart)’

PIE **der-* ‘tear, rip (apart)’ can be found in ^B*tsəra-*, ^A*tsärā-* ‘be separated’. In both Tocharian languages, this intransitive verb has an *e*-prs.[3], 3sg. ^B*tsretär*, vn. ^A*śralune*, an *a*-sbj.[5] ger. ^B*tsrälle*, vn. ^A*tsrālune*, and a *a*-prt.[1], act.1sg. ^B*tsrāwa*, 1pl. ^A*tsaramäs*. The transitive meaning ‘separate’ is expressed with a causative *sk*-prs.-sbj.[9] in ^B*-ššə/ske-*, ^A*-šä/sa-*, e.g., prs.3sg. ^B*tsarästär*, *m*-ptcp. ^A*tsräsmām*, and caus. prt.[2], e.g., prt.act.3sg. ^B*tsyāra*, act.2sg. ^A*śāsrāšt* (Malzahn 2009: 67–8; Malzahn 2010: 987–8). The initial palatalisation of the Tocharian A abstract *śralune* ‘split, separation’ and the adjective *śralši* ‘of separation’ (A180 a4) is irregular, as *a*-presents of class [3] generally have unpalatalised initial consonants. Malzahn (2009: 69–70) suggests that they derive from an original *l*-stem **derol* > **ts’ərel* > pre-TA **śral*, a parallel formation of **temol* > **t’əmel* > ^B*cmel*, ^A*cmol* ‘birth’.

Root initial palatalisation does, however, occur in the subjunctive of class [3], e.g., *e*-sbj.[3].3sg. ^B*cmetär*, ^A*cmatär* ‘will be born’, ^B*lyuketär* ‘will light up’. Since the origin of *e*-prs.[3] and *e*-sbj.[3] must at least partially overlap, it is more likely that ^A*śralune* represents a relic of an older state of affairs before the *e*-prs.[3] was widely

depalatalised.¹⁵⁴ The 3sg. form ^A*tsratr-änn* (A146 b4) can then be interpreted as a newer depalatalised present form (Peyrot 2013a: 845 fn. 1044), rather than a misspelled form of *ā*-subj.[5] ^A*tsrātr-änn* as Malzahn (2009: 64–5) does. Since verbal nouns to the present stem are relatively rare, it would make sense that ^A*śralune* would avoid renewal.

On the basis of Gk. *δέρω* ‘skin, flay’, Got. *gatairan* ‘tear (apart)’ tr., Lith. *derù* ‘skin, flay’, OCS *derq* ‘flay’,¹⁵⁵ the simple thematic present for ^A*der-* can be securely reconstructed (LIV 2001: 119–20). A root aorist is found in Vedic, where it is found primarily in transitive, but also intransitive meaning (in aor.inj.act.3sg. *dārt*, RV 6.27.5). In light of the resultative perfect and the secondary intransitive *s*-aorist modal forms also found in the Ṛg-Veda, e.g., aor.sbj.act.2sg. *darṣasi* ‘burst open (itr.)’, it is likely that the basic meaning of the root aorist was intransitive ‘tear (apart)’ (Narten 1964: 145–6; Kümmel 2000: 230–1). The LIV (2001: 120 fn. 2) suggests that the transitive meaning in the present stem could have come about as an oppositional active formation.

If this reasoning is correct, it is likely that the intransitive root aorist is reflected in the *a*-prt.[1] stem. As a ^A*CeC*-root, it would have been subject to the changes outlined in section 2.6: loss of the secondary 3sg. ending ^A*-t* after ^A*-r-* and subsequent introduction of ^A*-at* from the ^A*CeCH*-roots. Then the rest of the paradigm could be filled in with the productive *e*-prs.[3] pattern subsequently. It is possible that the palatalised *e*-prs.[3] ^A*śra-* < ^A*ts’are-* reflects an original Indo-European non-dental middle ^A*dér-o*, but I do not find it very likely, as most of the Indo-European cognates are transitive and have active inflection. Especially, the active inflection of the Vedic root aorist speaks against the notion.

The question then is, what would have happened to the transitive thematic present? Since Tocharian does not have causative alternation between stems of the same stem pattern, it could not act as the present stem for the intransitive preterite. It is possible that it formed the basis for an *s*-transitive paradigm which was lost or replaced by the attested causative pattern, but this cannot be substantiated at present.

There is another possibility, namely that the Proto-Indo-European root was transitive. In that case, the entire stem pattern of the Tocharian verb must be

¹⁵⁴ If it is correct that *e*-prs.[3] and *e*-subj.[3] are cognate with the Vedic stative, it is possible that both palatalised and unpalatalised forms were inherited into Tocharian; cf. Ved. stat.3sg. *duhé* ‘gives milk’ < ^A*d^hug^h-o-ī*, *śaye* ‘lies’ < ^A*keī-o-ī* (Watkins 1969: 94).

¹⁵⁵ Alb. *djerr* ‘destroy’ may go back to ^A*der-je/o-* ← ^A*der-e/o-* (Hyllested & Joseph 2022: 233).

innovative; the thematic present could be underlying the causative paradigm, and the intransitive pattern [3 – 5 – 1] would be an inner-Tocharian oppositional formation. This scenario requires more assumptions than the intransitive root aorist scenario, and I therefore find it less likely. In either case, there is nothing archaic about the stem pattern of ^B*tsəra-*, ^A*tsärā-* ‘be separated’ from an Indo-European perspective.

3.4.2. **meith₂*- ‘exchange, remove’

^B*məyta-*, ^A*mäytā-* ‘set out, go, come’ is usually connected to PIE **meith₂*-, translated by the LIV (2001: 430) as ‘exchange, remove’. The verb shows a unique stem pattern in Tocharian B: *e*-prs.[3] 3sg. ^B*mitetär*, *a*-subj.[5] inf. ^B*mitätsi*, *s*-prt.[3] 3pl. ^B*maitar*. This is one of only two verbs in which a *s*-prt.[3] patterns with an *e*-prs.[3].¹⁵⁶ In Tocharian A, only the *s*-prt.[3] is attested: 3pl. ^A*metär* (Malzahn 2010: 769–70), so this stem should certainly be projected back to PT **meyt-Ø/sa-*.

Outside Tocharian, a simple thematic present is attested in Ved. *méthati* ‘is hostile, opposes’, Lat. *mittō* ‘send (off), let loose’, and OHG *mīdan* ‘avoid, hide’, while a root aorist and nasal present combination can be found in Avestan; cf. OAv. aor.sbj.act.3sg. *mōiṣat* ‘deprives’, aor.inj.act.3sg. *hām.aibī.mōist* ‘unites’, YAv. prs.act.3sg. *paīti-miṣnāiti* ‘sends away’ (LIV 2001: 430). Hackstein (1995: 27 fn. 33) sets up the root as *(s)*meith₂*- with the meaning ‘send, let go’. This meaning is better reconcilable with the attested meanings than that of the LIV. Hackstein (1995: 28 fn. 34) suggests that the verb underwent intransitivisation in (pre-)Proto-Tocharian, as opposed to Malzahn (2010: 770) who assumes that the root was intransitive in Proto-Indo-European.

To explain the aberrant stem pattern, Malzahn (2010: 770) suggests that the root aorist is continued in the *a*-subj.[5], while the *s*-prt.[3] continues a perfect. Below in section 4.3, I argue that the Proto-Indo-European perfect is continued in the Tocharian A root prt.[0], but not in the *s*-prt.[3] in general, so I think that an alternative solution should be sought for **meyt-Ø/sa-*. Peyrot (2013a: 785–6 fn. 543) proposes that the *s*-preterite is the older stem and that the strange combination came about through the creation of an *e*-subj.[3] which subsequently was pushed into the present. This seems quite unlikely since the verb does not show the expected features of a verb with an *e*-subj.[3], i.e., change-of-state semantics capable of inchoative-

¹⁵⁶ The other is ^A*māskā-* ‘be(come)’ which forms an *a*-prs.-(subj.).[3] and an *s*-prt.[3]. See fn. 61, page 37.

causative alternation and root structure $C\acute{a}C$ - (see 4.6 below). In addition, the push between stems usually goes the other way in Tocharian, i.e. newly formed present stems pushing older stems into the subjunctive; if the verb had an e -sbj.[3] and a s -prt.[3], we would expect new present to be of class [8]. However, it is difficult to see how the s -preterite could have been created analogically. It must have existed before Proto-Tocharian, and in light of the Lat. pf.1sg. *mīsī* ‘let go’, we can probably reconstruct it for the proto-language. But that alone does not explain the combination of e -prs.[3], a -sbj.[5], and s -prt.[3].

A possible solution is offered by the thematic present cognates of Indic, Italic, and Germanic. Due to the final $*h_2$ of $*me\acute{i}th_2$ -, an inherited $*e/o$ -present would not show the recognisable stem alternation PT $*-\acute{a}/e$ -, but rather $*-a/e$ - with colouring of the $*e$ -allomorph of the thematic suffix.¹⁵⁷ This proto-present would likely have caused some confusion. It is therefore probable that the paradigm was split according to the common pattern with an e -prs.[3] and an a -sbj.[5], assigning the e -stem forms to the present and the $*a$ -stem forms to the subjunctive and filling in the paradigms from there; see Table 3.4. With this explanation, we can even understand the change in semantics to intransitive ‘set off, go, come’: the middle forms of the thematic present could either have been oppositionally intransitive, thus explaining the semantics in Tocharian directly, or they could have been reflexive ‘send oneself off’, from which ‘set off’ is not far.

Table 3.4: Development of the simple thematic present to $*me\acute{i}th_2$ -

	PIE		pre-PT		PT
1sg.	$*me\acute{i}th_2o$ -	>	$*m\grave{a}yte$ -		prs.[3] $*m\grave{a}yte$ -
2sg.	$*me\acute{i}th_2e$ -	>	$*m\grave{a}yta$ -		
3sg.	$*me\acute{i}th_2e$ -	>	$*m\grave{a}yta$ -		
1pl.	$*me\acute{i}th_2o$ -	>	$*m\grave{a}yte$ -		sbj.[5] $*m\grave{a}yta$ -
2pl.	$*me\acute{i}th_2e$ -	>	$*m\grave{a}yta$ -		
3pl.	$*me\acute{i}th_2o$ -	>	$*m\grave{a}yte$ -		

¹⁵⁷ On a side note, there is a remarkable lack of simple thematic presents to $se\acute{t}$ -roots in the LIV (2001) corpus, probably due to the interference of laryngeal colouring.

3.4.3. **ueig-* ‘move away (from)’

^B*wəyka-*, ^A*wäyka-* ‘disappear, dwindle’ is another interesting case. The intransitive verb forms the regular *e*-prs.[3] with an *a*-subj.[5] and an *a*-prt.[1] in both languages and is found next to both an *s*-transitive and a causative paradigm in Tocharian B.

The verb goes back to PIE **ueig-* ‘move away (from)’, to which a simple thematic present is found in YAv. *vaējaṇt-* ‘throwing’, Gk. *εἵλω*,¹⁵⁸ and OHG *wīhhan*, OEng. *wīcan* ‘retreat, yield’. Vedic attests a zero-grade thematic present *vijáte* ‘retreats’ (Hackstein 1995: 134–5; LIV 2001: 667–8). Which of these two stem types is more original is debatable, but for Tocharian purposes, it is not so important as the palatalisation expected from an *e*-grade of the root would probably be neutralised through analogy with other stems of the verb.

Table 3.5: Stem patterns of ^B*wəyka-*, ^A*wäykā-*

		itr. ‘disappear’		s-tr. ‘avoid’		caus. ‘remove’
	prs.	[3] <i>wiketär</i>		[8] 3pl. <i>wiksen-ne</i>	[9]	<i>wikäṣṣām</i>
TB	subj.	[5] <i>wikātär</i>		[2] opt. <i>wīši</i>	[9]	opt. <i>wikäṣṣi</i>
	prt.	[1] <i>wika</i>		— ^α	[2]	<i>yaika</i>
		itr. ‘disappear’				caus. ‘avoid; remove’
	prs.	[3] <i>wikatär</i>			[8]	<i>wikäṣ</i>
TA	subj.	[5] <i>wekaṣ</i>			[9]	<i>wikäṣ</i>
	prt.	[1] <i>wika</i>			[2]	<i>wawik</i>
(Malzahn 2010: 901–4; Peyrot 2013a: 818–9)						
^α Ipv.act.pl. <i>pwikso</i> indicates an <i>s</i> -prt.[3]						

Ringe (2000: 132) argues that the thematic stem is recent, due to the unexpected final consonant in Gk. *εἵλω* (as if from **ueik-*) which indicates influence from voiceless forms of an athematic stem (Frisk 1960: 454; Chantraine 1964: 214; Hackstein 1995: 135; Beekes 2010: 381–2). Since the semantic agreement with Vedic and Germanic is so close, this assumption is acceptable. Moreover, we find the athematic stem in Vedic: aor.inj.mid.3sg. *abhí vikta* ‘fall over’, and it is highly likely that the intransitive *a*-prt.[1], TB prt.act.3sg. *wika*, TA prt.act.3sg.-obj.pl. ^A*wikā-m*, continues

¹⁵⁸ For the unexpected voiceless velar reflex in Greek, see immediately below.

the Proto-Indo-European root aorist directly; see Table 2.16.¹⁵⁹ That does not necessarily mean that the simple thematic stem in Tocharian continues the subjunctive of the root aorist. Within Tocharian, there are numerous examples of former presents being pushed into the subjunctive by a newer present stem; this process seems to have been continuous:

PIE prs. **de-d^heh₁/d^hh₁-* ‘put’ > pre-PT prs. **tatta-* → PT subj. **tatta-*
→ PT prs. **tas-’ə/e-*¹⁶⁰

PT **na*-prs.[6] **kəlpna-* ‘obtain’ > TA *nā*-prs.[6] *kälpnā-*
→ TB *na*-subj.[6] *kəlpna-*
→ TB *sk*-prs.[9] *kəlpnā-ṣṣə/ske-*

I do not know of any examples of the opposite happening, i.e. a subjunctive replacing a present stem. It is therefore much more likely that a present is displaced into the subjunctive than the other way around; in this case, the inherited **e/o*-present could have been pushed out by a new *s(k)*-present at any point in the prehistory (Hackstein 1995: 136); see also 4.6.1.

Hackstein (1995: 133–4) lists some examples from the present and subjunctive of the intransitive verb pattern that seem to need the translation ‘remove’ (ex. 5).

- 5 TB IOLToch13 b5
k_use enkäl wike(trä)
‘who drives away passion’¹⁶¹

He suggests (1995: 134–5 fn. 90) that there was a transitive paradigm with a nasal present next to the intransitive stem **wayke-* which the transitive **wayke-* could have replaced; this seems unlikely, as there are no other examples of nasal presents participating in this kind of valency opposition. Rather, the transitivity fluctuation in this verb may be due to late confusion, since **wayk-* exhibits the fullest possible array of causative alternation stems.

In my opinion, the easiest way to explain this verb is to posit that two inherited stems, the root aorist and the simple thematic present, underlie the intransitive and

¹⁵⁹ In TB, this verb ought to show palatalisation of the initial consonant: **ueig-* > PT **wāyk-* > **yāyk-* > TB *†ik-*. A restoration from an unattested *o*-graded form must have taken place in the prehistory of Tocharian B; see Hackstein (1995: 134).

¹⁶⁰ For discussion on this verb, see 2.5.1.

¹⁶¹ See Broomhead (1962: 54, 58–9).

the *s*-transitive paradigms respectively. One problem with this idea is that the **e/o*-present was not transitive, judging from Gk. ἐῴω and OEng. *wīcan* ‘retreat, yield’, as well as Ved. *vijáte* ‘retreats’. Nonetheless, the meaning of the Tocharian *s*-transitive *’a/e*-subj.[2] ‘avoid’ is quite close to the CIE meaning ‘retreat’. If, with Hackstein, the Tocharian thematic stem is inherited from **uég-e/o-*, it must have undergone transitivisation.¹⁶² This may have come about through the semantic difference between the perfective aorist ‘be put in motion, stirred (vel sim.)’ as in Vedic¹⁶³ or even ‘disappear, dwindle’ as in Tocharian and the imperfective present ‘retreat’, the present meaning could be interpreted as an increase of the control of the subject. This is found in several other oppositional *s*-transitive verbs in Tocharian (Carling 2003b: 69) and could have contributed to the reinterpretation of the stem as transitive. Due to the semantic distinction between the old aorist and the present, the two stems could be interpreted as separate verbs.

Each of these new verbs would be missing certain stems to express the full array of verbal categories. First and foremost, the transitive simple thematic present would be missing a preterite, while the intransitive preterite stem (from the aorist) would be missing a present. In the transitive verb, an *s*-preterite was formed to express the preterite of the simple thematic present. I can see two motivations for this: firstly, the most productive preterite stem, the *a*-preterite, was already in use in the intransitive paradigm. It would therefore not be well-suited to express the semantically different *s*-transitive. Secondly, the *s*-preterite (from the *s*-aorist) was used in several other transitive contexts, both in oppositional and non-oppositional transitive verbs. This stem formation would therefore be well-marked functionally. At a certain point, the *sk*-present became the standard productive present type in verbs with *s*-preterites, and so **wāyk-ṣṣa/ske-* was created, leaving **wāyk-’a/e-* to express the subjunctive; see 3.7 and 4.6.1.

Similarly, the intransitive *a*-preterite would need a way to express the present and subjunctive. Productive stems, the *e*-prs.[3] and *a*-subj.[5], were formed in analogy with other verbs of similar semantics. Later, the causative paradigm was created to express the factitive ‘make avoid’ ⇒ ‘remove’. Admittedly, this hypothesis relies on

¹⁶² There are examples in Tocharian B of the *s*-transitive verb accompanied by perlocative objects which Seržant (2014: 10–11, 223) take as evidence of intransitive use. However, the importance of these examples should not be overestimated as both are found in THT₃₁ in the *Udānālankāra* which contains many non-standard syntactic features; see the edition of the text in Sieg & Siegling (1949a: 52–3).

¹⁶³ The semantics of the Vedic root aorist is not easy to determine as it is only attested with preverbs (Grassmann 1876: 1268).

several reconstructed—and thus unverifiable—stages of development, but it accounts for the Tocharian as well as the comparative data.

In 4.6, I argue that this verb, probably along with a few others, constituted the basis for the *s*-transitive pattern [8 – 2 – 3], which has a limited distribution in Tocharian; see also 4.5. Even if this is not the case, there is no evidence for archaism in the Tocharian stem formation compared to CIE; rather, this verb shows the full potential of the productive Tocharian system for deriving valency-oppositional stems.

3.4.4. **dem*(*h*₂)- ‘build, grow’

The Proto-Indo-European root **dem*(*H*)- ‘build’ must be reflected in Tocharian ^B*tsäma-*, ^A*tsäma-* ‘grow, increase (itr.)’. Tocharian B has an intransitive base verb with the stem pattern meaning ‘grow; increase’ and an *s*-transitive with the meaning ‘increase; promote’. Tocharian A also attests an intransitive paradigm with the irregular palatalised *a*-prs.[4].mid.3pl. *śamantär* ‘grow; increase’. Instead of an *s*-transitive, Tocharian A has a causative paradigm, ‘increase; cause to grow’.

Contra Hackstein (1995: 139) and Malzahn (2010: 320), the subjunctive does not have *a*-grade. In PKNS54, they assert ^B*tsāmtär* (a1) ‘makes grow’ and ^B*tsāmtär-ne* (a2) ‘makes grow for him’, but both forms should be updated; the first is *tsamträ* /*tsémtrə*/, the subjunctive of the *s*-transitive (mid.3sg., either root sbj.[1] or *ʔ/e*-sbj.[2]), while the second is *tsmāntär-ne*, the regular middle 3pl. of the *a*-sbj.[5] of the intransitive paradigm with a 3sg. object marker (Peyrot 2013a: 843 fn. 1033). The attested forms of the *s*-transitive subjunctive are thus mid.3sg. ^B*tsamtär* (PKNS54 a1), inf. ^B*tsamtsi* (IOLToch210 b4, b5, IOLToch247 a6), ^B*tsāmtsi* (THT240 a2). From these forms, it is not possible to determine whether we are dealing with a root sbj.[1] *tsám-trə*, *tsám-tsəy* or an *ʔ/e*-sbj.[2] *tsám-ʔ-trə*, *tsám-ʔ-tsəy*. This will be discussed further in 4.5.1 and 4.5.2. For an overview of the patterns of ^B*tsäma-*, ^A*tsämā-* ‘grow’, see Table 3.6.

Etymologically, ^B*tsäma-*, ^A*tsäma-* has been linked to PIE **dem*(*H*)- ‘build’ since Winter (1962a: 27).¹⁶⁴ The primary aspectual stem to this root is a simple thematic present, reflected in Gk. *ᾱέμω* ‘build’ and Got. *gatiman* ‘match’, and possibly—famously—in HLuw. *tamari* ‘builds’; cf. Oettinger (2013: 164), Jasanoff (1998: 313), LIV (2001: 114). Since no other **e/o*-presents can be retrieved from the Anatolian languages, it is better to take the latter form as a denominative (Sasseville 2021: 92–

¹⁶⁴ The hesitations of Ringe (1991: 109) are overly cautious in my opinion.

3). Nonetheless, the absence of any other convincing present and the agreement of Greek and Germanic form a solid enough basis for a Proto-Indo-European simple thematic present.

Table 3.6: Stem patterns of ^B*tsəma-*, ^A*tsämā-* ‘grow’

itr. ‘grow; increase’			s-tr. ‘increase; promote’		
	prs.	[3] <i>tsmetär</i>		[8]	<i>tsämšäm</i> ^α
TB	sbj.	[5] 3pl. <i>tsmāntär</i>		[1]/[2]	<i>tsamträ</i>
	prt.	[1] <i>tsama</i>			
itr. ‘grow; increase’			caus. ‘increase; cause to grow’		
	prs.	[4] 3pl. <i>śamantär</i>		[8]	<i>tsmāš</i>
TA	sbj.	[5] vn. <i>tsmāšlune</i>		[9]	vn. <i>tsmāšlune</i>
	prt.	—		[2]	<i>śasmānt</i>

(Malzahn 2010: 984–7; Peyrot 2013a: 843)

^αFrom THT19 b1. The initial <ä> for expected <a> /ǎ/ is an archaic feature common to texts from Miñ-Öy Qizil, but this seems to be hypercorrection; see Peyrot (2008: 219) and CEToM, ed. H. Fellner, accessed 23 June 2023.

Besides δέμω, Greek has an *s*-aorist ἔδειμα. This and other Greek forms are the primary reason why the exact reconstruction of the Proto-Indo-European root is disputed. Evidence from Mycenaean seems to indicate **demh₁-*: fut.ptcp. nom.pl. *de-me-o-te* /demehontes/; cf. Morpurgo Davies (1988: 77). The most common reconstruction is **demh₂-*, based on Gk. δέμας ‘body’ as well as certain Doric verbal forms with *-ā-*. This means that the Mycenaean form must be analogical. The LIV (2001: 115 fn. 1, 7) suggests that it was renewed with **-eso-* found to many roots in nasals and liquid; see also Meissner (2006: 124–5).

Treating most forms connected to the root, Nikolaev (2010) makes the case that the root does not have a final laryngeal at all. According to him, many of the nominal formations can be explained with an **(e)h₂-* derivational suffix, e.g., Gk. δέμας ‘house’ < **dem-h₂-s-*, while the Greek verbal forms indicating laryngeals have inner-Greek analogical explanations (Nikolaev 2010: 75, 78–81, 84–6). The reconstruction **dem-* has the advantage of allowing us to take the Greek *s*-aorist ἔδειμα as inherited from **h₁e-dēm-s-m̃*. The Greek aorist can thus be the direct stem cognate of the Tocharian B *s*-transitive prt.act.3sg. *tsemtsa* (Hackstein 1995: 139). Semantically, the direct

connection would be attractive, if we grant that the root could mean ‘grow (tr.)’ as well as ‘build’, which is also indicated in Anatolian nominal evidence; see Nikolaev (2010: 58). However, the derivational chain proposed by Nikolaev (2010: 75) relies on an unattested nominal formation **dem-h₂-* with questionable semantics, ‘a mass of things that have (been) grown/built’. So, while the potential Greek-Tocharian stem cognate is appealing, I hesitate to accept Nikolaev’s reconstruction.

It has been suggested that the Tocharian A vocalised *-’a-* (< **e* as if from **ē*) is a reflex of original lengthened grade from Narten ablaut (Jasanoff 1978: 44; 1998: 313). Jasanoff proposes that the lengthened grade was transferred from the active to the middle in Tocharian A, while Tocharian B shows the reflex of the weak stem with full-grade replaced by zero-grade. This means that the preservation of the acrostatic ablaut would have been kept very late until after the split of Proto-Tocharian, which does not comport well with the otherwise high regularity of the *e*-prs.[3] and *o*-prs.[4] stem patterns. Furthermore, if **dem(h₂)-* belongs to Jasanoff’s **b^héreti-* type, it is curious that it is treated so differently than the other members of this group. Rather than finding the lengthened grade in the Tocharian A imperfect (as in *’pārat* and *’lyāk*), we find it in the present. It is worth noting that all three verbs that form *a*-prs.[4] with root-initial palatalisation in Tocharian A start with *ts-*: *’tsāmā-* ‘grow’, *’tsältā-* ‘devour’, and *’tsālpā-* ‘pass away’ (Peyrot 2013a: 574). The etymologies of the two other verbs are not assured (Malzahn 2010: 979, 991), but it is likely that mutual influence has occurred. Which verb acted as the model is difficult to say, so it cannot be ruled out that *’śamantār* received its ablaut from one of the others.¹⁶⁵

Returning to the question of the laryngeal, if we reconstruct **demh₂-* rather than **dem-*, it would be quite attractive to explain the Tocharian verb in the same way as *’māyta-*, *’māytā-* ‘set out’, i.e. as a split paradigm caused by the colouring of thematic **e*-timbre by **h₂*. The intransitive paradigm of *’tsāma-*, *’tsāmā-* ‘grow’ does not show the same aberrant *s*-preterite as *’māyta-*, *’māytā-*, but since the reconstruction of **h₂* in the root would make the connection to the Greek *s*-aorist more unlikely anyway, it is not a problem. The *s*-transitive verb, regardless of whether it formed a root sbj.[1] or an *’ə/e*-sbj.[2], would then be an innovation created in opposition. Admittedly, the weak point of this proposal is the semantics, which seem to have been transitive in the cognate forms: Gk. *δέμω* ‘build’ and Got. *gatiman* ‘match’. The intransitive meaning may be an innovation of Tocharian due to the stem pattern.

¹⁶⁵ For a proposal with a phonological solution to the lengthened grade, see Nikolaev (2005).

3.4.5. **b^heud^h*- ‘be aware of’

^B*pawta*-, ^A*pāwtā*- ‘honor, flatter’ very likely reflect PIE **b^heud^h*- ‘be awake’ (Lane 1938: 27). The verb is intransitive and can take an object in the allative (Kölver 1965: 88). In Tocharian B, the verb forms an *o*-prs.[4] *pauto*- and an *a*-sbj.[5] *pauta*-; in Tocharian A, the suffix vowels, and thus the stems, have merged to *pota*- due to vowel weakening in the subjunctive.

The simple thematic present is well-founded with cognates in Vedic, Avestan, Greek, Gothic, Old Norse, and Old Church Slavonic (LIV 2001: 82); they point to a meaning ‘notice, learn’, which may have developed from a base meaning ‘be aware of’ (S. Norbruis p.c.). This basic meaning could also have developed into ‘be awake’, which we find in Vedic, e.g., aor.inj.mid.3pl. *budhánta* ‘they awoke’. Apart from these, there are traces of a transitive nasal present in Greek, Old Irish, Lithuanian, and Old Church Slavonic.

It would be attractive to posit that the Tocharian *a*-prt.[1] derives from the intransitive root aorist, reflected in Vedic. However, this suggestion would leave the vocalism of the root unexplained. Of *o*-graded forms in the Indo-European corpus, there are two immediate options. The first is a derivation from the perfect, which is semantically attractive; compare e.g., Ved. pf.sbj.act.3sg. *búbodhati* ‘will observe’, Gk. *πέπυσμαι* ‘has learned, knows’ (LIV 2001: 83). A change from ‘be aware of (someone)’ to ‘give heed to (someone)’ to ‘honor (someone)’, as per Lane (1938: 27) and S. Norbruis (p.c.) is a reasonable chain of developments. The formal side is more difficult, however. If the perfect developed into a preterite in Tocharian (see 2.3.1), it is unexpected to find the **o*-vocalism in the present stem. If, on the other hand, the perfect is continued in the present stem ^B*pauto*-, ^A*pauta*-, the suffix is not accounted for.

The other option would be a causative **eje*-stem. Such a stem is attested in Indo-Iranian and Balto-Slavic: Ved. *bodháyati* ‘awakens (tr.)’, YAv. *baodaieiti* ‘lets recognise’, OCS *ubuditi* ‘awaken (tr.)’, Lith. *báudyti* ‘incite’ (LIV 2001: 82–3; Derksen 2008: 67–8). Formally, this connection fits well, especially if one could get the stem vowel *-*o*- from a contraction of *-*eje*- somehow.¹⁶⁶ Semantically, however, it is more difficult to get from ‘awaken (tr.)’ to ‘honor’. Perhaps a transitional meaning ‘make aware in a positive way’ is possible: ‘awaken (someone)’ ⇒ ‘make (someone) aware’ ⇒ ‘make (someone) aware in a positive way’ ⇒ ‘to have honoured (someone)’ ⇒ ‘to honour (someone)’, but this is a long chain and I can think of no parallels.

¹⁶⁶ Ringe (1987: 117; 1996: 56–57) proposes a similar scenario involving statives in *-*eh₁*- and **je/o*-presents as precursors of the *e*-prs.[3] and the *o*-prs.[4]; see 4.2.2 for discussion.

Without understanding the prehistory of the present stem, it is not possible to determine whether Tocharian inherited the simple thematic present, but the stem pattern does not look particularly archaic from a Tocharian point of view. We may conclude that the paradigm in Tocharian does not reflect an archaism compared to the CIE languages.

To summarise section 3.4, the verbs that form *e*-presents of class [3] and *o*-presents of class [4] mostly show regular and productive stem patterns which could have replaced the inherited Proto-Indo-European present formation at any point. In the case of **meith₂* - > **māyta*- which does show an anomalous *s*-preterite next to the *e*-prs.[3] and *a*-subj.[5], we may understand the stem pattern better, if we posit an inherited **e/o*-present, since the final laryngeal of the root would interfere with the suffix.

3.5. Root cognates with Tocharian nasal presents

There is only one verb with a nasal present in Tocharian corresponding to a simple thematic present in the CIE languages.¹⁶⁷ In the case of *ʰsäkā*-, discussed briefly in 3.5.2, the traditional proposal to derive it from **sekʷ*- ‘follow’ must be abandoned (Kremmer 2022: 130–1).

3.5.1. **uert*- ‘turn’

One verb which attests a nasal present is *ʳwarta*- to which only one form is attested: the prs.ptcp. *wārnāmane* (PKAS17A b6), identified by Pinault (1984: 185–6). He proposes that the form could be a *na*-prs.[6] to a PT root **wart*- going back to PIE

¹⁶⁷ A third possible verb is *ʳkəla*-, *ʰkälā*- ‘lead, bring’ which according to Pedersen (1941: 183–4), LIV (2001: 386), and Adams (2013: 180–1) derives from PIE **k^welh₁*- ‘turn (itr.)’. In Tocharian, the verb inflected according to the pattern [6 – 5 – 1], which is still reflected in Tocharian A (prs.act.3sg. *källāṣ* < **kälⁿnāṣ*), while Tocharian B has renewed the prs. with a *ṣṣə/ske*-suffix: prs.act.3sg. *källāṣṣäm* < **kälⁿna-ṣṣə/ske*- (Hackstein 1995: 314; Peyrot 2013a: 736 fn. 127). The root **k^welh₁*- forms a simple thematic present in many Indo-European languages (see the LIV 2001: 386), but the etymology is contested for Tocharian. Van Windekens (1976: 199–200), Pinault (1989a: 147), Hackstein (1995: 315–6) and Kim (2009b: 15 fn. 11) rather derive the *ʳkəla*-, *ʰkälā*- from PIE **kelh₁*- ‘drive’. Since we would expect the labiovelar of **k^welh₁*- to be reflected in Tocharian, and since the semantics of **kelh₁*- fit the attested meaning better, this etymology is preferable. No **e/o*-present is reconstructible for **kelh₁*-, so *ʳkəla*-, *ʰkälā*- is not relevant to the current survey.

**uert-* ‘turn’: *na-prs.*[6] **wärt-na-* > **warna-*; compare *na-prs.*[6] ^B*karsna-* to ^B*kərst-* ‘cut’. This etymology is supported by the context of *wārnāmane* which suits a translation ‘turning’ well.

6 PKAS17A b6

(*sa*)*m* *ysāṣṣe cākkār akāśne ynemane orocce wrene*¹⁶⁸ *wārnāmane*
 “that golden wheel, going in the sky, **turning** (in) a great dust”

It is attractive to assume that the Tocharian A causative verb *wärt-* ‘throw’,¹⁶⁹ only attested in caus. prt.[2] 3sg.-obj.3sg. *worta-ñ*, 3pl. *wortar*, belongs to this verb as well. In the rest of Indo-European, a middle simple thematic present can be found in Ved. *vārtate* ‘turns (around)’, the YAv. hapax ipv.2pl. *varətata* ‘turn!’,¹⁷⁰ Latin *uertor* ‘turns (around)’, and Got *wairþan* ‘become’. No nasal present is attested, but Vedic does show a root aorist *avart* which would be consistent with one. While the preterite is unattested in Tocharian, it is reasonable to assume that it was an *a-prt.*[1], due to the prominence of the pattern *na-prs.*[6], *a-sbj.*[5], *a-prt.*[1]. The root aorist may thus have been continued in Tocharian, leading to the analogical creation of the *na-prs.*[6]. However, without further attestations, it is impossible to say. In either case, it is possible that the nasal present replaced an inherited thematic present.

3.5.2. **sek^w-* ‘follow’

Finally, it has been proposed that **sek^w-* ‘follow’ is reflected in a TA verb *sākā-*. The Indo-European simple thematic present is certainly assured: compare Ved. *sācate* ‘accompany’, OAv. *hacaitē* ‘follow’, Gk. ἑπομαι ‘id.’, Lat. *sequor* ‘id.’, and Got. *saiþvan* ‘see’. The verb ^A*sākā-* is attested three times: *nā-prs.*[6].ptcp. *sāknāmām* (A51 b6), *ā-sbj.*[5].act.3sg.-obj.3sg. *skāṣ-ām* (A51 b5) and *ā-prt.*[1].mid.3pl. *skānt* (A111 a4). The meaning ‘follow’ is suggested by Sieg, Sieglings and Schulze (1931: 477), but as is pointed out by Schmidt (1974: 290), this meaning could well be based on the possible etymological connection to precisely **sek^w-*. Recently, however, Kremmer (2022: 130) has argued that the meaning of the Tocharian A verb is ‘scratch’, citing a Tibetan

¹⁶⁸ Adams (2013: 672) corrects Pinault’s reading of *wrene* ‘in dust’ to *wrete* ‘a circle’, which could be a nominal form of the same root **worto-* > *wrete* with metathesis, but this metathesis is quite *ad hoc*. I do not have access to a picture of the manuscript.

¹⁶⁹ Compare Eng. *throw* with Dutch *draaien*, Dan. *dreje* ‘turn’. The archaic meaning is preserved in English in the phrase *to throw pottery* ‘to make pottery on a wheel’.

¹⁷⁰ See the LIV (2001: 691 fn. 3).

parallel to A111; see also Carling & Pinault (2023: 515).¹⁷¹ The connection to **sek^w*- should therefore be given up.

3.6. Root cognates with Tocharian *s*- and *sk*-presents

There are four verbs corresponding to simple thematic presents elsewhere that form *s*- or *sk*-presents in the corpus: ^B*plaw*-, ^A*pläw*- ‘float, soar’ and ^B*wask*-, ^A*wāskā*- ‘move (itr.)’, **pek^w*- ‘cook’, and **d^heg^w*- ‘burn’. The latter two belong to a specific inflectional pattern, so their presents will be treated more extensively in section 3.6.2.

Before we look at the specific verbs, it is necessary to address the origins of the *s*-presents. Both the *s*-prs.[8] and the *sk*-prs.[9] have been highly productive; class [9] is found only in Tocharian B in particular in the causative stem patterns where the stem is marked by initial accent as well as the suffix -*ṣṣə/ske*-. While the *sk*-presents of class [9] can straightforwardly be derived from the PIE **ske/o*-present,¹⁷² there is extensive disagreement on the origin of the *s*-present of class [8]. Since some scholars suggest that it goes back to original subjunctive stems, the discussion mirrors that of the simple thematic presents discussed in 3.2.

As described in Chapter 2, there is a clear paradigmatic link between the *s*-present class [8] and the *s*-preterite. One line of thought takes the *s*-aorist thematic subjunctive as the precursor of the *s*-prs.[8] (Rasmussen 1997: 149–50; 2002: 380–1; Jasanoff 1987a: 101–3; 2003: 180–2; 2019b: 23, 40). This easily explains the close connection between *s*-prs.[8] and *s*-prt.[3] and the phonological structure of the suffix. It does not explain the lack of root initial palatalisation which we would expect from a regular full-grade Proto-Indo-European subjunctive. Rasmussen (2002: 380–1) proposes that the zero-grade was extended from the middle to other weak stem contexts like the subjunctive, which would explain why palatalisation is so limited in the sigmatic stem pattern.

Where the hypothesis falls short is on the functional level. It is not clear how the Proto-Indo-European subjunctive would end up in the present, in similar stem patterns as the inherited **ske/o*-present. The **e/o*-subjunctive to athematic stems, e.g., **g^wém-e/o*-, does not seem to have traversed into the present, and typologically, the development from subjunctive to indicative is not well-substantiated (Villanueva

¹⁷¹ A111 a4 *skānt yṣanaṃ skeyasyo* ‘they scratched zealously’ (Kremmer 2022: 130).

¹⁷² Reconstruction according to Lubotsky (2001). Traditionally, the suffix is reconstructed with a palatovelar **-ské/o*-, e.g., LIV (2001: 19). For the Tocharian reflex and the stem formation in general, it makes no difference.

Svensson 2021: 271). According to Jasanoff (1998: 312–3), the **se/o*-subjunctive was in competition with an asigmatic **e/o*-subjunctive in the proto-language, which resulted in the former being assigned to the present and the latter to the subjunctive. This hypothesis faces issues in the attested distribution of the verbs that would have undergone this change, as shown in 4.5.

Other scholars take the present of class [8] from an original present formation. Adams (1988: 50) posits an iterative **se/o*-present as the origin of the *s-prs*. [8].¹⁷³ Although this would fit the Tocharian facts perfectly, the evidence for such a formation outside Tocharian is slim. Kortlandt (1994: 63–4) suggests that the *s-prs*. [8] continues an original athematic *s*-present in 1sg. **-esmi*, 1pl. **-smes*. This formation is also not very well substantiated comparatively, and Kortlandt does not offer an explanation for how the formation became thematic in Tocharian.

A similar, but inner-Tocharian, theory suggests the secondary derivation of a present by the thematisation of the *s*-preterite; see Hackstein (1995: 165), Søbørg (2020: 140), cautiously Malzahn (2010: 431–2). Hackstein draws a parallel to the causative prt. [4] which is productively created by the addition of the preterite marker *-a-* to the causative *sk*-present of class [9]. It does not seem likely that this causative pattern should be the analogical model for the creation of the *s-prs*. [8], since the *s-prt*. [3] does not show the suffix *-a-* outside the 3sg. A further problem with the parallel is that, unlike the preterite suffix **-a-*, the simple thematic suffix **-e/o-* does not seem to have been particularly productive as a present marker. The productivity of the thematic endings, e.g., the *prs*. 3pl. endings ^B*-em*, mid. ^B*-entär*, appears only to involve the *e*-formant (Peyrot 2008: 136–8); it is thus the thematic ending, not the suffix, that is productive.¹⁷⁴

In my opinion, the account by Peyrot (2013a: 515–24) offers the simplest explanation with the fewest problems and assumptions needed. On the basis of a suggestion by Couvreur (1947: 62–3), Peyrot argues that the *s*-presents started off as allomorphs to *sk*-presents in position after consonants, predominantly stops. While there are some counterexamples to the distribution, they can be accounted for by epenthesis and verb specific innovation (Peyrot 2013a: 518–20). This proposal is simpler than its competitors, since the suffix **-sk'ə/e-* already forms presents, and it accounts for the zero grade and the thematic suffix.

¹⁷³ Pinault (1989a: 139; 2008: 580) also reconstructs the suffix as **-se/o-*, but does not specify its Proto-Indo-European function.

¹⁷⁴ For references and more detailed discussion of these theories, see Hackstein (1995: 159–65), Malzahn (2010: 429–32), and Søbørg (2020: 137–40).

A deeper question is why the *sk*-presents became so productive in the first place. In other Indo-European languages that show these two formations, there is no particular affinity between **ske/o*-presents and *s*-aorists. It is important to note that the *sk*-present was extensively productive outside the pattern with the *s*-preterite, in particular in the causative patterns where the preterite inflects as an *a*-preterite of class [2] or class [4] (see Table 1.4). While the causative prt.[4] is clearly based on the present stem (Malzahn 2010: 220), the causative prt.[2] is an archaic-looking, non-productive stem; see Kim (2003). The productivity of the *sk*-present can thus be seen as a general strategy to provide transitive or causative verbs with inherited preterite formations (caus. prt.[2], *s*-prt.[3]) with new strongly marked presents.

3.6.1. **pleu-* ‘float, swim’

The Proto-Indo-European root **pleu-* must be reflected in ^B*pləw-*, ^A*plāw-* ‘float, soar’. The primary present reconstructible for Proto-Indo-European is the simple thematic type which we find in Ved. *plāvate* ‘float, swim’, YAv. *us.frauuānte* ‘rise (of clouds)’, Gk. *πλέω* ‘sail, float, swim’, Lat. *pluit* ‘it is raining’, and OCS *plovq* ‘sail, swim’. Ved. *aploṣṭa* ‘has swum’, Gk. *ἔπλευσα* ‘sailed, swam’ and OCS *plu* ‘sailed’ indicate an *s*-aorist alongside the **e/o*-present (LIV 2001: 487).

In early scholarship, based on the analysis of Couvreur (1954a: 85), it was assumed that **pleu-* had split in two in Tocharian B: a root ^B*pləw-* with an *s*-prs.[8], a root sbj.[1], and an *a*-prt.[1], and a root ^B*plyew-* with a root prs.[1] and an *s*-prt.[3]. Since Hackstein (1995: 92–8), the two have been reconciled into one Tocharian B paradigm. First of all, he shows that there is no difference in meaning between forms with *-ə-* and forms with *-e-* in the root. Secondly, he shows that the stem analysis should be updated. Couvreur (1954a: 85) analysed the form ^B*plyewä-ñ* (PKAS17C a5) as a root present of class [1], corresponding to the Tocharian A root present participle ^A*plumā(nn)* (YQI.6 a1–a2). With reference to K. T. Schmidt, Hackstein (1995: 94–5) argues that ^B*plyewä-ñ* should be recategorised as a root subjunctive of class [1] which is attested in the weak stem in the verbal noun ^B*pluwälyñe* (IOLToch30 b5). In the relevant passage, ^B*plyewä-ñ* follows another subjunctive, sbj.act.1pl. ^B*plāntam* ‘we will rejoice’, which makes the subjunctive analysis practically inevitable.

7 PKAS17C a5

aiḱā(nmitsñesa) plāntam katkauñaisa arañce po ñke plyewä-ñ_{sbj.act.3sg.-obj.1sg.}

‘We will rejoice about the all(iance), [and] out of joy my heart **will float** completely indeed¹⁷⁵

To explain the initial palatalisation *ply-* which is unexpected in sbj.[1], Hackstein proposes that the form was influenced by the accompanying s-preterite ^B*plye_usa*, which itself is irregular in Tocharian B. Likewise, the proposed *a*-prt.[1] forms in Tocharian B can be abandoned through updated interpretations (Hackstein 1995: 95–6). In Tocharian B, there is thus only evidence of one base verb paradigm with a s-prs.[8], root sbj.[1], and s-prt.[3]; see also Malzahn (2010: 745–6), Peyrot (2013a: 782).

In light of the s-aorist cognates, the Tocharian B s-prt.[3] and root sbj.[1] must be inherited, while the Tocharian A *ā*-preterite of class [1] must be innovative. The question then is whether the root present in Tocharian A is original or not. Hackstein (1995: 97) proposes that the root stem replaced the inherited simple thematic present. It is pointed out by M. Kümmel in the LIV (2001: 487 fn. 6) that such a replacement lacks a motivation within Tocharian. Instead, he suggests that the root stem reflects an original acrostatic root present that split into a root prs.[1] which shows the weak stem and is only attested in Tocharian A and a root sbj.[1] reflecting the strong stem and found only in Tocharian B. However, ablaut differences between the present and subjunctive in the root prs.-sbj.[1] are not otherwise attested (Malzahn 2010: 357). All in all, it is much more likely that the Tocharian B sbj.[1] is a result of the inherited s-aorist, just like the attested s-preterite.

Nonetheless, the Tocharian A present stem could continue an old mobile root present **pleu-/plu-*, if we disregard the lack of palatalisation. The imperfective semantics ‘swim, float’ would correlate with such a stem. There is, however, one synchronic Tocharian A phenomenon that complicates the matter. While ^A*plumām* certainly looks like a root stem, there are examples of *mām*-participles to simple thematic stems that look just like it. The thematic variant of the *mām*-participle to roots with *ā*-vocalism should be *-amām* with the PT **e*-formant (< PIE **-o-*), e.g., ^A*cāmpamām* ‘capable’. However, several thematic verbs with *ā*-vocalism show the athematic variant instead: ^A*pārmām* ‘carrying’, ^A*kālymām* ‘standing’, ^A*yārmām* ‘venerating’ (Winter 1991: 47, 52; Malzahn 2010: 492). This means that, in theory, ^A*plumām* is ambiguous and could reflect an **e*-prs.[2]. Until diagnostic forms are found, I do not think ^A*plumām* is strong enough on its own to posit a root present for Proto-Tocharian and, by extension, an archaism for Tocharian compared with CIE.

¹⁷⁵ Trsl. CEToM, ed. G.-J. Pinault & M. Malzahn, accessed 10 May 2023.

3.6.2. **ueǵʰ*- ‘drive (itr.)’

PIE **ueǵʰ*- ‘drive, i.e., go by wagon’ has much in common with **pleu-* ‘float, swim’. They are both verbs of motion which attest a simple thematic present as their primary present: Ved. *váhati* ‘transports, conveys’, YAv. *vazaiti* ‘goes, drives’, Gk. ἔχω ‘bear, bring’, Pamphylian *φεχέτο*, Lat. *vehō* ‘drive (itr.), go’, ON *vega* ‘move’, OEng. *wegan* ‘move, bring’, Lith. *vežù* ‘convey’, and OCS *vezǫ* ‘convey’ (LIV 2001: 661).¹⁷⁶ There are some indications of a root present in Vedic, e.g., opt.mid.3sg. *uhīta* ‘will bring’, mid.ptcp. *úhāna-* ‘bringing’ (LIV 2001: 661).

An *s*-aorist or the remnants of one are found in Vedic, Young Avestan, Greek, Latin, and Old Church Slavonic. This Indo-European root is most likely the basis for the verbal root ^B*wask-*,¹⁷⁷ ^A*wāskā-* ‘move (itr.)’ (Hackstein 1995: 199–200). The root is clearly a former *sk*-present to which a productive present was created subsequently; thus, any further insights about the original stem formation have been completely obscured. In any event, it is difficult to see how the root present in Vedic, e.g., opt.mid.3sg. *uhīta* ‘will bring’, could have been made analogically. So, unless we want to assume that the simple thematic present was created independently in each of the branches, we have to reckon with two present formations in the proto-language. Even if Tocharian showed evidence of a root present, it would not prove common CIE innovation.

While ^A*plāw-* ‘float, soar’ seems to form a root present, neither of the two verbs discussed in 3.6 can be established with any certainty as archaic compared to CIE. In the following section 3.7, more verbs with sigmatic presents will be treated, namely the ones that express inchoative-causative alternation in the present using diathesis rather than stem alternation.

3.7. Tocharian *s*-presents with inchoative-causative alternation

Both **pekʷ-* ‘cook, ripen’ and **dʰegʷh-* ‘burn’ have reconstructible simple thematic presents on the one hand and Tocharian *s*-presents on the other. Both verbs show a special morphosemantic behaviour within the Tocharian verbal system: in the active

¹⁷⁶ Albanian *vjedh* ‘steal’ also belongs here according to the LIV (2001: 661) and Orel (1998: 510).

¹⁷⁷ Tocharian B forms with the root vowel *a* are also found; these are most likely secondary (Peyrot 2008: 154–5).

voice, they have causative meaning, while in the middle, they have inchoative meaning.¹⁷⁸ It is possible that this behaviour reflects an archaism in itself; see Malzahn (2010: 56–7). The discussion will start with **pek^w-* > **pək-* and **d^heg^{wh}-* > **tsək-*, as the simple thematic presents to these verbs are assured by many Indo-European stem cognates. From there, the discussion will be extended to the verbs that exhibit the same behaviour as **pək-* and **tsək-*, many of which have good Proto-Indo-European etymologies as well.

PIE **pek^w-* ‘cook, ripen’ is continued as *^Bpək-/^Apäk-* ‘cook; ripen (tr./itr.)’. To this root, a simple thematic present is widely attested: Ved. *pacati* ‘cooks, ripens (tr.)’, YAv. *pacaiti* ‘id.’, Lat. *coquō* ‘boil, bake’, MWel. *pobi* ‘bake, cook’, Lith. *kepù* ‘id.’, OCS *pekŕ* ‘id.’, Alb. *pjek* ‘id.’. An intransitive middle **ġe/o*-present is reflected in Ved. *pácyate* ‘ripens’ and the oppositional active Greek *πέσσω* ‘let ripen’ (LIV 2001: 468; Kümmel 2000: 293; de Vaan 2008b: 134). We can also reconstruct a sigmatic aorist on the basis of Vedic aor.sbj.act.3sg. *pákṣat* ‘will cook’, Gk. aor.ind.act.1sg. *ἔπειψα* ‘cooked’, Lat. pf.ind.act.1sg. *coxi* ‘cooked’. The LIV (2001: 468) gives these as independent innovations because the Vedic forms are paradigmatically isolated. However, the only evidence for the root aorist that the LIV cautiously reconstruct is the Tocharian A root prt.[o] form, 3sg. *pakät*. Disregarding that form, I see no reason why the Vedic, Greek, and Latin forms should not be traced back to Proto-Indo-European. Thus, a transitive s-aorist and a transitive active simple thematic present should be reconstructed. On the basis of Vedic and Greek, it is probable that an intransitive **ġe/o*-present existed already in the proto-language.

We find PIE **d^heg^{wh}-* ‘burn’ in *^Btsək-/^Atsäk-* ‘burn’ (LIV 2001: 133; Adams 2013: 802). This verb is attested primarily in so-called eastern branches, i.e., Indo-Iranian, Balto-Slavic and Albanian. A transitive thematic present can be reconstructed with certainty: Ved. *dáhati* ‘burns’, Lith. *dègti* ‘burn, light’, Latv. *degt* ‘id.’, OCS *žešti* ‘burn’, Alb. *djeg* ‘burn’ (Hoffmann & Forssman 1996: 101; Demiraj 1997: 138–9; Derksen 2008: 559; 2015: 119). Along with it, a transitive s-aorist can be assured on the basis of Vedic *adhāk* ‘burned’ and OCS *žasę* ‘burned’, as well as an iterative **eġe/o*-formation **d^hog^{wh}eġe/o-* in Lat. *foueō* ‘make warm, keep warm’ (de Vaan 2008b: 237).

In Tocharian, these two verbs participate in an uncommon stem pattern which includes some very archaic looking stems. Exactly how and from what the Tocharian pattern developed is a matter of great debate, which is treated in the following chapter. The presents to these verbs do not in themselves look archaic. The productivity of the stem type in Tocharian is undeniable. However, on the

¹⁷⁸ See Haspelmath (1993) and section 4.1.1.

morphosemantic level these presents exhibit an interesting behaviour in Tocharian B. The *s*-present class [8] in Tocharian B, *pək-ṣə/se-*, *tsək-ṣə/se-*, has causative meaning when used in the active voice (ex. 8, 9), but intransitive inchoative meaning when used in the middle (ex. 10, 11).

In Tocharian A, the difference in meaning is marked by stem alternation, as well as a difference in voice. The causative is expressed an *s*-prs.[8], *päk-ṣä/se-*, *tsäk-ṣä/se-* (exs. 12 and 13), while the inchoative is expressed with a middle *näs*-prs.[10], *päk-näṣä/se-*, *tsäk-näṣä/se-* (exs. 14 and 15); see Schmidt (1974: 129–34). The *s*-prs.[8] for ^A*päk-* is only attested in a middle imperfect form which should probably be interpreted as a passive. Since the alternation in meaning is the same, the question is whether the Tocharian A or the Tocharian B situation is more original. This will be discussed in 3.7.2.

TB active *s*-prs.[8]

8 PKAS4A b1

: *tsirauwñeṣṣe kauṣn āya ompalskoṣṣe mrestīwe pakṣäm*_{prs.act.3sg.} *ysomo*

“He breaks the bone of energy and **cooks** it together with the marrow of meditation.”¹⁷⁹

9 IOLToch5 b3

: *kwīpe-onmiṣṣeṃ pwārasa tsaksau*_{prs.act.1sg.} *śmoññai śaulaṣṣai*

“With the fires of shame and repentance, **I burn** the basis of life”¹⁸⁰

TB middle *s*-prs.[8]

10 PKAS7B b3

*mākawi yāmormtse śāktalye ālām ktowä alyek ikene ykuweṣepi pakṣtär-ne*_{prs.mid.3sg.-}

_{obj.3sg.}

“for which deed the seed was strewn elsewhere, **it ripens for the one** who has gone to another place”¹⁸¹

¹⁷⁹ See Adams (2013: 568), and CEToM, ed. G.-J. Pinault & M. Malzahn, accessed 12 May 2023.

¹⁸⁰ See Schmidt (1974: 133), and CEToM, ed. S. Peyrot, accessed 12 May 2023.

¹⁸¹ See CEToM, ed. G.-J. Pinault, M. Malzahn & M. Peyrot, accessed 12 May 2023.

- 11 THT₃₃ b₅
*tsakštär*_{prs.mid.3sg.} *ysalyše pūwarsa*
 ‘he burns by the fires of discord’¹⁸²

TA active s-prs.[8]

- 12 A394 a1–2
*paṃṣāntās wrasaśši sñi tsaryo elant (eṣā) šwātsintu pākṣānt*_{ipf.mid.3pl.} *sā*^{a2} *ltās*
wrinās hwākiss elant eṣā
 ‘he gave alms to the begging beings with his own hand, foods were cooked,
 (and) he gave alms to the flying and watery animals (i.e. birds and fish)’¹⁸³
- 13 A229 a1
*k_ucene cem wrasañ wārtant tsākse*_{prs.act.3pl.} *w• – – t*
 ‘which beings burn (down) the forests’¹⁸⁴

TA middle *nās*-prs.[10]

- 14 A28 a6
 : *ṣuñkāṣ poryo tsäknäštär*_{prs.mid.3sg.} *tsā* ///
 ‘from the throat he burns with fire ...’
- 15 YQN.4 b2
 /// *·se mäskatr-äm täppu tsuko kälymeyä päknäṣtr-äm*_{prs.mid.3sg.-obj.pl.} ///
 ‘... there is ... for them, eaten (and) drunk, it ripens correctly for them’¹⁸⁵

3.7.1. Other verbs with voice opposition

The pattern exhibited by the present stem of ^B*pək*-, ^A*päk*- and ^B*tsək*-, ^A*tsäk*- is found in other verbs, namely ^B*nək*-, ^A*näk*- ‘perish; destroy’, ^B*nəm*- ‘bend’, ^B*ləwk*- ‘light up’, and probably also ^B*kes*- ‘be extinguished; extinguish’. Table 3.7 contains an overview of the present stems of these verbs.

¹⁸² See CEToM, ed. H. Fellner, accessed 12 May 2023.

¹⁸³ See Schmidt (1974: 226): “... den bettelnden Wesen (gab er) mit eigener Hand Haben (sic). Speisen wurden gekocht, [und] er gab den Vögeln [und] Wassertieren Gaben.”

¹⁸⁴ See Sieg & Siegling (1921: 114) and the translation by Hackstein (1995: 90): “welche Menschen da Wälder (nieder-)brennen”.

¹⁸⁵ See Ji, Winter & Pinault (1998: 208–9). Unfortunately, there is no Old Uighur parallel identified yet.

Table 3.7: Present stems of the inchoative-causative verbs

Tocharian B			Tocharian A		
^B <i>nək-</i>	‘perish’ [8] mid. <i>nakštär</i>	‘destroy’ [8] act. <i>nakšäm</i>	^A <i>näk-</i>	‘perish’ [10] mid. <i>näknäštärä</i>	‘destroy’ [8] act. <i>nkäš</i>
^B <i>nəm-</i>	‘bow; bend (itr.)’ [8] mid. <i>namštär</i>	‘bend (tr.)’ [8] act. <i>namšäm</i>	^A <i>näm-</i>	‘bow; bend (itr.)’ [8] act. 3pl. <i>nämseñc</i> ^ß	
^B <i>pək-</i>	‘cook (itr.); ripen’ [8] mid. <i>pakšträ</i>	‘cook (tr.)’ [8] act. <i>pakšäm</i>	^A <i>päk-</i>	‘cook (itr.); ripen’ [10] mid. <i>päknäštär-äm</i>	‘cook (tr.)’ [8] mid. ipf.3pl. <i>pākšānt</i>
^B <i>lawk-</i>	‘light up (itr.)’ [8] mid. 2sg. <i>lukštar</i>	‘light up (tr.)’ [8] act. <i>lukšäm</i>	^A <i>läwk-</i>		‘light up (tr.)’ [8] act. 3sg. <i>l_ukäš</i>
^B <i>tsək-</i>	‘burn (itr.)’ [8] mid. <i>tsakšträ</i>	‘burn (tr.)’ [8] act. <i>tsakšäm</i>	^A <i>tsäk-</i>	‘burn (itr.)’ [10] mid. <i>tsäknäštär</i>	‘burn (tr.)’ [8] act. 3sg. <i>tskäš</i>
^B <i>kən-</i>	‘occur’ [9] mid. 3pl. <i>knaskentär</i>	‘fulfil’ [9] act. ^α <i>kanašämñ-ne</i>	^A <i>kän-</i>	‘occur’ [8] mid. <i>knäštär</i>	‘fulfil’ [8] act. and mid. act.3pl. <i>kämseñc</i> , mid.3pl. <i>kämsamñträ</i>
^B <i>təm-</i>	‘be born’ [10] mid. <i>tänmasträ</i>	‘produce’ [10] act. ^α <i>tanmäššäm</i>	^A <i>täm-</i>	‘be born’ [10] mid. <i>tämnäštär</i>	‘produce’ [10] act. <i>tämnäš</i>

^B <i>kəs-</i>	‘be extinguished’	‘extinguish’	—
	[2] mid.	[2] act.	
	<i>keṣträ</i>	<i>keṣäm</i> ^Y	

^α With initial accent indicative of a causative

^β Note that this form is intransitive; see below.

^Y A causative *sk-prs.*[9] ‘make extinct’ with initial accent is also attested to this verb.

The verbs ^B*nək-*, ^A*näk-* ‘perish; destroy’ and ^B*ləwk-*, ^A*läwk-* ‘light up’ show exactly the same pattern as ^B*pək-*, ^A*päk-* ‘cook’ and ^B*tsək-*, ^A*tsäk-* ‘burn’. Finite forms of ^A*läwk-* are only attested in the active with an *s-prs.*[8] and the transitive meaning ‘illuminate’ (ex. 21). On the *m*-participle *luksamām*, see 5.3.1.

TB active *s-prs.*[8]

- 16 THT₃₃ b7
*mäkte tne lāñe **nakṣäm***_{prs.act.3sg.} *sarmana*
 “As here the flood (?) **destroys** the seeds”¹⁸⁶
- 17 IOLToch282 a3
 /// – *po (ś)[aiṣe] **lukṣäm***_{prs.act.3sg.}
 “**it lights up** the whole world”¹⁸⁷

TB middle *s-prs.*[8]

- 18 THT₃ a1–2
*kessa wn(o)lm(i sru)^{a2} **ken**trä **nakṣträ***_{prs.mid.3sg.} *jambudvip (s)e*¹⁸⁸
 “through hunger, the beings die (and) this Jambudvīpa **perishes**”
- 19 IOLToch166 a2
 /// ***lukes**entr_z*_{prs.mid.3pl.} *eśne* :
 “the eyes **light up**”

¹⁸⁶ Sieg & Siegling (1949b: 56): “Wie hier das Hochwasser (?) die Samenkörner vernichtet”.

¹⁸⁷ Hackstein (1995: 124): “... erleuchtet die ganze Welt”.

¹⁸⁸ Emendations according to Sieg and Siegling (1983: 25).

TA active s-prs.[8]

20 A256 b2

: *nkäṣ*_{prs.act.3sg.} *sne parnore*

“it destroys that which is not glorious”

21 A118 b6

: *wälts swāñcenāsyo l_akäṣ*_{prs.act.3sg.} *jaṃbud(v)ip*

“she [i.e. the sun] illuminates Jambudvīpa with a thousand rays”¹⁸⁹

TA middle *näs*-prs.[10]

22 A2 b3–4

amok nu (mā) ^{b4} *näknäṣtrā*_{prs.mid.3sg.}

“but skill is not lost”

The only middle example of ^B*nām-ṣə/se-* is found in a highly fragmentary context (ex. 23), so intransitive meaning cannot be positively established, but the active is clearly transitive (ex. 24).

23 TB THT187 b4

/// *namṣtār*_{prs.mid.3sg.} · *na ca śa* ///

“... (s)he bows (?) ...”

24 TB PKNS107 b1

*o[r na]mseṃ*_{prs.act.3pl.} *tarkāntsam ṣaṇ aṇmā*

“the carpenters bend wood themselves”¹⁹⁰

In Tocharian A, this verb does not follow the voice alternation pattern. The active of the s-prs.[8] to ^A*nām-* is used to express the intransitive meaning (Hackstein 1995: 68). In fact, this is true for all attested forms of the Tocharian A verb (Malzahn 2010: 684).¹⁹¹

¹⁸⁹ See Hackstein (1995: 125): “mit tausend Strahlen erleuchtet sie [die Sonne] Jambudvīpa”.

¹⁹⁰ For the edition of the text and the Sanskrit parallel, see Thomas (1977). His reading *tarkāttsam* ‘carpenters’ should be updated to *tarkāntsam* (Schmidt 2001: 20). It shows the late nom.pl. ending -*m* from -*ñ* (Peyrot 2008: 78–84).

¹⁹¹ With Peyrot (2013b: 764 fn. 367), the forms indicating an *a*-subj.[5] probably belong to a separate (but related) verb ^B*nāma-*, ^A*nāmā-* ‘bend (itr.)’.

25 TA A1 a3

: *nämseñc*_{prs.act.3pl} *yäsluṣ tsraṣisac kumseñc yärkant tsraṣisac* :“enemies **bow** to the energetic one, honours come to the energetic one”

^B*käs-* ‘be extinguished; extinguish, quench’ also shows inchoative-causative alternation within a single present stem. Ex. 26 shows the inchoative meaning ‘be extinguished’, while the functionally causative meaning ‘quench, extinguish’ can be seen in ex. 27. The present stem of ^B*käs-* must be interpreted as an *’a/e-prs.[2]* since the sibilant is part of the root.¹⁹² There is one geminated form, ^B*keṣṣeñca*, found in an archaic text THT295. This text has other features more common in late and colloquial texts, such as <ñ> for <ñk> and other irregular gemination which indicates some level of hypercorrection (Peyrot 2008: 54, 178–9).¹⁹³

26 TB a5

/// -t *lakle keṣträ*_{prs.mid.3sg.} *k_ucesa keṣträ*_{prs.mid.3sg.}“... suffering is **extinguished**. By what is it **extinguished**?”¹⁹⁴

27 TB THT278 a3

*ñca keṣäm*_{prs.act.3sg.} *palsko*“...¹⁹⁵ **quenches** the mind”

There are two verbs that show a similar but reversed pattern, in which the inchoative-causative is expressed with stem alternation in Tocharian B, but with voice opposition in Tocharian A: ^B*kän-*, ^A*kän-* ‘occur; fulfil’ and ^B*täm-*, ^A*täm-* ‘be born; produce’. To ^B*kän-*, we find a middle *sk-prs.[9]* meaning ‘occur, come about’, next to an active *sk-prs.[9]* with initial accent. The only finite form which is attested appears to have proper causative meaning ‘lit. make occur; provoke’ (ex. 29), not the oppositional transitive meaning ‘fulfil’ which we would expect. However, we do find this meaning in the agent noun of the causative stem: *akälkänta kanṣeñca* ‘the fulfiller of wishes’ (THT14 a5).

¹⁹² There are probably no instances of ^A*käs-* ‘go out; extinguish’ attested in the present. Sieg, Siegling & Schulze (1931: 433) list four uncertain present forms. They should probably all be interpreted differently. In A247 a1, Sieg & Siegling (1921: 123) read *savāsañ. käšt*, but this should rather be restored to *sāvasa(m) ñ(a)käšt* (Schmidt 1983a: 130). As for the alleged infinitive *kässi* in A311 b6, see Hackstein (1992: 144).

¹⁹³ A similar gemination is found in the agent noun ^B*taṣṣeñca* (THT255 b3, likewise archaic) to *prs.[2]* ^B*tas-’a/e-* ‘put, place’.

¹⁹⁴ Trsl. Broomhead (1962: 69).

¹⁹⁵ Perhaps an agent noun in *-ñca*.

28 TB THT1112 b4

: *po akālkānta knaskentār-nereturn*_{prs.mid.3pl.-obj.3sg.}

“all wishes **come true for him**”¹⁹⁶

29 TB PKNS48&258 a1

(*pārami*)*tne c(āmpa)m(oṃ) p(a)ñ(ā)ktentse krentaunane kos ime palsko*

*kanaṣāṃn-ne*_{prs.act.3sg.-obj.3sg.} *tot epīyac källāṣṣāllona ta(karṣkana pālskonta)*

“As much as he **provokes** thought and contemplation in the virtues of the Buddha, capable in the virtue of [...], so much are the pious thoughts to be remembered...”

^B*tām-* has a middle intransitive *nāsk*-prs.[10] ‘be born’ next to an active transitive *nāsk*-prs.[10] ‘produce; generate’ with initial accent. Both stems show metathesis, **tām-nāsk-* > ^B*tānmāsk-*, which is regular in roots with final *-m-*; compare *nāsk*-prs.[10] act.3sg. ^B*känmaṣṣām* ‘comes’.

30 THT14 b4

*sraukaṃ ṣ temeñce prere ramtā kekarṣṣu nraine tānmastrā*_{prs.mid.3sg.}

“and because of that, if he dies, **he is reborn** in hell like an arrow that is shot”¹⁹⁷

31 THT11 b2

(*po*) *kaṣeñca yokye kleś ontsoytñe tne tanmäṣṣām*_{prs.act.3sg.} *krentaṃts wnołmeṃts*

“the all-killing affliction of thirst **generates** here the insatiability of the good beings”¹⁹⁸

In Tocharian A, these two verbs show inchoative-causative alternation by way of voice alternation, at least at the surface level. ^A*kän-* ‘occur; fulfil’ forms a *s*-prs.[8], while ^A*tām-* ‘be born; generate’ forms a *nās*-prs.[10]. However, since we find an *s*-subj.[9] and a causative prt.[2] forms in the transitive, the underlying paradigm must be an oppositional causative stem pattern. This is consistent with the evidence from Tocharian B where the comparable forms have initial accent.

¹⁹⁶ Schmidt (1986: 88): “ – [denn] ihm werden alle Wünsche erfüllt – ”.

¹⁹⁷ See Peyrot (2013a: 680).

¹⁹⁸ Schmidt (1974: 421): “Die alles tötende Trübung Durst erzeugt hier die Unersättlichkeit der guten Wesen.”. English translation by CEToM, ed. H. Fellner, accessed 24 February 2022.

TA middle

32 A71 a2

: *mā nu ākāl knāštār-ñi*_{prs.mid.3sg.-obj.1sg.}
 ‘but my wish is not **coming true**¹⁹⁹

33 A151 a2

||| *kapśiññam ysār tāmnāštār*_{prs.mid.3sg.} ||
 ‘in the body, blood is **made**’

TA active

34 A49 a2

||| *-yo šom-cmolšy ats ākāl kāmseñc*_{prs.act.3pl.} :
 ‘with ...²⁰⁰ **they fulfil** the wish of just one birth’

35 A256b2

|| *swāsäṣ cīñcrone tāmnäs*_{prs.act.3sg.} *pälskaṃ parnore* :
 ‘it lets it rain pleasantness, it **generates** splendour in the mind’

The use of voice alternation to express semantic differences is rare in Tocharian, and it is only in these verbs that it is used to express inchoative-causative alternation. In these verbs, however, Tocharian A and Tocharian B show mirror images of each other with regard to stem formation: the verbs that use voice to alternate between inchoative and causative meaning in Tocharian B use stem alternation in Tocharian, and vice versa. It is quite possible that the voice alternation is an archaic feature within Tocharian, but in order to determine that, we must first establish whether it is the Tocharian B or the Tocharian A situation that should be reconstructed to Proto-Tocharian. In the following section, these questions will be discussed.

3.7.2. The origin of the voice alternation

Another unusual feature of this group of verbs is that almost all of them have immaculate Indo-European etymologies and all but one (^B*tām*-, ^A*tām*- ‘be born; produce’) have cognates in Vedic. Interestingly, all these verbs form simple thematic presents or **je/o*-presents, mostly in Indo-Iranian, as was noticed by Jasanoff (1978:

¹⁹⁹ See the discussion in Hackstein (1995: 232) about the meaning of this form.

²⁰⁰ Unknown noun in the instrumental case.

35–6); see Table 3.8. The question is whether their present stem behaviour in Tocharian is compatible with the Indo-European cognates or whether it reflects a more archaic situation.

Table 3.8: Cognate present stems

root	PT root	* <i>e/o</i> -presents	* <i>ie/o</i> -presents
* <i>d^heg^{wh}</i> -	* <i>tsək</i> -	Ved. <i>dáhati</i> ‘burns (tr.)’, Lith. <i>dègti</i> ‘burn, light (itr./tr.)’, Lat. <i>degt</i> ‘id.’, OCS <i>žešti</i> ‘burn (itr./tr.)’, Alb. <i>djeg</i> ‘burn (tr.)’	
* <i>génh₁</i> -	* <i>kən</i> -	Ved. <i>jánati</i> ‘begets; generates’, OLat. 3pl. <i>genunt</i> ‘they produce’	Ved. <i>jáyate</i> ‘is born’, YAv. <i>zaiiata</i> , OIr. <i>·gainethar</i> ‘is born’
* <i>g^wes</i> -	* <i>kəs</i> -		Ved. ipv.2pl. <i>ní jasyata</i> ‘vanish!’, OCS <i>ugašetъ</i> ‘be extinguished’
* <i>nek</i> -	* <i>nək</i> -		Ved. <i>násyati</i> ‘disappears’, YAv. <i>nasüieiti</i> ‘id.’
* <i>nem</i> -	* <i>nəm</i> -	Ved. <i>námate</i> ‘bows, bends (itr.)’, Ved. <i>námanti</i> ‘bend (tr.)’, YAv. <i>nəmaite</i> ‘bows (itr.)’	
* <i>leuk</i> -	* <i>ləwk</i> -	Ved. <i>rócate</i> ‘shines (itr.)’, YAv. <i>raociṇt</i> ‘shining’	
* <i>pek^w</i> -	* <i>pək</i> -	Ved. <i>pácanti</i> ‘cooks (tr.)’, YAv. <i>-pacaiti</i> ‘id.’, Lat. <i>coquō</i> ‘id.’, Wel. <i>pob</i> ‘id.’, Lith. <i>kepù</i> cook tr., OCS <i>pekq</i> tr., Alb. <i>pjek</i> tr.	Ved. <i>pácyate</i> ‘cook (itr.); ripen’, Gk. <i>πέσσω</i> ‘let ripen’ (‘Fakt. Oppositionsakt.’)
(LIV 2001: s.v.; Kulikov 2012: 320–2, 400–6, 536–7, 569–70)			

One way to explain the morphosemantic correlation of voice and transitivity is to posit that it was inherent (and inherited) in these roots; thus Malzahn (2010: 56). According to this view, the voice alternation in the Tocharian *sk*-presents must be an archaism, even though the *s*- and *sk*-present stems are not. The natural implication of such a suggestion is that the stem alternation between **e/o*- and **ie/o*-presents observed in other branches, most notably Indo-Iranian, is a later innovation. There

is some comparative evidence in support of this. In Indo-Iranian, the verb **nam-* shows the same alternation as Tocharian B: Ved. prs.ind.mid.3sg. *námate* ‘bows, bends (itr.)’, YAv. *nəmaite* ‘bows’, Ved. prs.ind.act.3pl. *námanti* ‘bend (tr.)’ (*LIV* 2001: 453). Additionally, the alternation between transitive simple thematic presents (class I) and intransitive or passive *ya*-presents in Vedic is relatively common (Kulikov 2012: 726). In Balto-Slavic, the thematic descendants of the root **d^heg^{wh-}* ‘burn’, Lith. *dègti* ‘burn, light’, Latv. *degt* ‘id.’, OCS *žešti* ‘burn’, are used both intransitively and transitively. This could have come about when Balto-Slavic gave up middle inflection (*LIV* 2001: 134 fn. 1).

Still, I am hesitant to assume that this alternation can be traced back to Proto-Indo-European, in either **nem-* or **d^heg^{wh-}*. Looking specifically at Indo-Iranian, it is noticeable how varied the presents to the verbs are. If we are to assume that CIE underwent a post-Tocharian innovation, it should be explained how and why the roots chose different strategies to form their new presents. The variety of the Indo-Iranian stem formations become especially interesting in light of other verbs with alternation between stative/inchoative and factitive semantics in simple thematic stems. We find this alternation with several verbs associated with Caland System property-concept adjectives (Rau 2009: 146–9), e.g.:

Vedic	mid.3sg.	act.3sg.
	<i>práthate</i> ‘spreads out (itr.)’	<i>práthati</i> ‘makes spread out’
	<i>sádhate</i> ‘succeeds’	<i>sádhati</i> ‘makes successful’
	<i>vímradata</i> ‘becomes soft’	<i>vímradati</i> ‘makes soft’
	<i>svádate</i> ‘becomes tasty’	<i>svádati</i> ‘makes tasty’
	<i>svádate</i>	
	<i>rámhate</i> ‘goes swiftly’	<i>rámhati</i> ‘makes go swiftly’

This looks like a regular pattern, which must have been productive at some point. If the present formations in Table 3.8 were likewise innovative, it is hard to understand why they do not show the same pattern. In other words, if Vedic forms like prs.mid.3sg. *†pácate* ‘cooks (itr.)’ or act.3sg. *†rócati* ‘illuminate’ ever existed, what reason could there have been for their replacement by the *ya*-present *pácyate* and the causative present *rocáyati*, respectively?

Rather, Tocharian is the branch that shows the highest degree of regularisation. Thus, tracing the alternation of voice and transitivity in the present stem (or the

root)²⁰¹ back to Proto-Indo-European in most of these verbs is not trivial on the CIE side. Let us therefore explore the possibility that Tocharian has innovated from a system that looks more like the Indo-Iranian one.

From Vedic and Greek, there is evidence for inchoative-causative alternation in the presents attested to the verb **pek^w-* marked both by stem alternation and voice alternation. Pinault (2012c) has suggested that the **ie/o*-present of this and similar Proto-Indo-European verbs is the source for the Tocharian subjunctive with the suffix ^B-e-, ^A-a-, e.g., vn. ^B*pkelñe*, ger. ^A*pkal* < **pke-*. Functionally and structurally, Pinault's hypothesis is attractive, but formally, it is quite difficult to arrive at the required suffix PT **-e-* from **-ie/o-*; for more detailed discussion on *e*-subj.[3], see 4.2.2.

It has been suggested that **ie/o*-stems may be indirectly hiding behind the Tocharian A intransitive presents [10] with the suffix *-näs-'ä/a-* in this group of words; see Hollifield *apud* Jasanoff (1978: 37 fn. 23; 2003: 181 fn. 11). Since we have to reckon with a present stem replacement in Tocharian in any event, this hypothesis is quite promising. Whether the Tocharian A stem alternation in the present continues the original distinction between **e/o-* and **ie/o-*presents directly is another matter. I think it is preferable to take the voice alternation found in Tocharian B as an archaism, since it is so aberrant in the system. However, if both middle intransitive **ie/o*-presents and active transitive **e/o*-presents were inherited into Tocharian, it is understandable that voice became the marker of valency in some of these verbs: the stems would merge in the 2sg., 3sg., and 2pl. with the exception of root-initial palatalisation; see Table 3.9.

Table 3.9: Merger of **e/o-* and **ie/o-*stems in pre-PT

PIE			pre-PT	comparanda
2sg., 3sg., 2pl.	<i>*pék^w-e-</i>	>	<i>*p'ək-'ə-</i>	a.o. Ved. <i>pácati</i> , Lat. <i>coquō</i> ,
1sg., 1pl., 3pl.	<i>*pék^w-o-</i>	>	<i>*p'ək-e-</i>	
2sg., 3sg., 2pl.	<i>*p(e)k^w-ie-</i>	>	<i>*p^(ʲ)ək-'ə-</i>	Ved. <i>pácyate</i> , Gk. <i>πέσσω</i>
1sg., 1pl., 3pl.	<i>*p(e)k^w-io-</i>	>	<i>*p^(ʲ)ək-'e-</i>	

²⁰¹ As is proposed by Jasanoff (2003: 180).

In light of $*g^w\check{h}_3u- > *k^w\check{y}aw- > \text{PT } *śaw- > {}^Bśay-/śaw-, {}^Aśāw-$ (see 3.2.1), we may assume that PIE $*\check{i}$ palatalises and is lost between stop and vowel in Proto-Tocharian. Thus, at this point, only palatalisation and voice would mark the difference between the two pre-Proto-Tocharian stems. Despite the expected zero-grade in the $*\check{i}e/o$ -present of $*pek^w-$, the Vedic and Greek forms both show full-grade, preventing an initial cluster $*pk^w-$. Depending on the age of this repair, the $*\check{i}e/o$ -present would show the same root-initial palatalisation in Tocharian as the $*e/o$ -present. I think it is highly likely that the two stems could have been reanalysed as the same stem, leaving diathesis to be the defining formal feature distinguishing meaning.

The resulting paradigm with intermittent suffix-initial palatalisation, especially in the middle paradigm, could be considered unattractive because it obscures the root-final consonant. This is supported by the synchronic data; there is no present class which is the natural descendent of the $*\check{i}e/o$ -present in Tocharian. Since this present class is found in all ancient Indo-European languages, explaining the lacuna in Tocharian as an archaism would be difficult. A relatively easy way of accounting for the lack of inherited $*\check{i}e/o$ -present would be with the assumption that the inherited they were replaced with $*sk'\check{a}/e$ -presents in order to restore a clear paradigm. Another potential case outside the realm of inchoative-causative alternation is the verb ${}^Baks-, {}^Aāks-$ ‘proclaim’ < PIE $*h_2eǵ-$ ‘speak’, if Hackstein (1995: 333–4) and the *LIV* (2001: 256) are correct in setting up a present stem $*h_2ǵ-\check{i}e/o-$. In that case, the $-s-$ of the Tocharian root could go back to a replacement by an sk -present: $*h_2ǵ-\check{i}e/o- > *ak-\check{a}'/e- \rightarrow *ak-sk'\check{a}/e- > *ak-s'\check{a}/e-$.²⁰²

For the inchoative-causative verbs, this hypothesis works particularly well from the point of view of the Cuvreur-Peyrot hypothesis for the origin of the s -present. The distribution of the s - and sk -suffixes is as expected in this group of verbs (with the exception of $*nəm-$): s -prs.[8] $-šə/se-$ is found in the k -final roots ($*nək-, *pək, *lawk-, *tsək$), while sk -presents of class [9] and $nəsk$ -presents of class [10] are found in the nasal final verbs ($*kən-, *təm-$). In fact, considering the role that the present of class [8] plays in marking oppositional transitives in Tocharian, the $nək$ -group could well be one of the early loci for the productivity of s -prs.[8] as a present class.

In several of the verbs without stem alternation in this group, voice already corresponded with meaning, either with middle and active opposition, as in $*nem-e/o-$ act. and mid. ‘bend’, or without, as in $*d^heg^wh-e/o-$ act. ‘burn (tr.)’ and $*leuḱ-e/o-$ mid. ‘light up (itr)’; see Table 3.8. In this situation, it would be natural if

²⁰² This stem is still found in the subjunctive (cf. ${}^Bakšə/se-$), while a new sk -present (cf. ${}^Baks-āššə/ske-$) was created, forcing the reanalysis of the root $*ak- \rightarrow *aks-$.

oppositional actives and middles were created to the verbs that were lacking them, considering that all the verbs in question have change-of-state semantics prone to inchoative-causative alternation (Haspelmath 1993), and many of them end in velars: **nək-*, **pək-*, **ləwk-*, and **tsək-*. Outside the present, these verbs also exhibit very similar stem patterns; see 4.1.1–4.4. As for the *ʔ/e*-prs.[2] found in *^Bkes-ʔ/e-*, we no longer need to assume an unparalleled simplification of the expected geminate in **kes-sʔ/e-*, but we can take the stem from a simple thematic present before the introduction of the suffix **-skʔ/e-*.

As for the Tocharian A presents, the distinction between *s*-prs.[8] and *näs*-prs.[10] must be innovative. Klingenschmitt (1982: 64 fn. 3) proposes that the prs.[10] suffix **-naskʔ/e-* arose in (pre)-Proto-Tocharian through anaptyxis in the verb **kʷəm-* ‘come’, to which a PIE **ske/o*-present can be reconstructed: **kʷəm-skʔ/e-* > **kʷənskʔ/e-* with reintroduction of **-m-* → **kʷəmnaskʔ/e-* > **kʷəm-naskʔ/e-*; see also Malzahn (2010: 469–70; 2013a: 130 fn. 6).²⁰³ This is very plausible, but it cannot have been the only point of origin for the **nask*-prs.[10] suffix, since the suffix has become productive in a different group of verbs that originates in old nasal stems, e.g., *^Bawn-*, *^Ao-* ‘hit A; begin M’, *^Brəyn-*, *^Aräy-* ‘give up’, *^Bsəyn-*, *^Asäyn-* ‘satiated; be satiated’; see Peyrot (2013a: 586–7).

Whether through analogy with **kʷəm-naskʔ/e-* as per Malzahn (2010: 469–70) or because **təm-* originally formed an *sk*-present, **təm-* must have influenced **kən-* in Proto-Tocharian, as they were both nasal-final and had similar semantics: **təm-* ‘be born, be created’, **kən-* ‘happen, come about’.²⁰⁴ In pre-Tocharian A, the productivity went beyond the nasal-final roots and the suffix **-nāskʔä/a-* was extended to the other intransitive middles on the basis of these two primarily middle roots; see also Peyrot (2013a: 525–6). This explains why we find them in roots that probably never formed a **ĵe/o*-present in Tocharian.

3.7.3. Conclusions

The discussion of the current section (3.7) started with the presents of *^Bpək-*, *^Apäk-* ‘cook; ripen (tr./itr.)’ and *^Btsək-*, *^Atäk-* ‘burn (tr./itr.)’ and their origins, but evolved into a deeper investigation of the correlation between voice and meaning in the present of two specific stem patterns in the Tocharian languages. I have argued that the development of inherited **e/o-* and **ĵe/o-* presents, and especially their conflation

²⁰³ For a different view, see Hackstein (1995: 306–7).

²⁰⁴ In addition, **kən-* < PIE **ǵenh₁-* used to mean ‘be born’.

in some forms, led to a new stem pattern in which voice was the primary marker of inchoative-causative alternation. The inherited presents were at a certain point replaced by *sk*-presents, but the voice opposition was preserved. This hypothesis accounts for the behaviour of ^B*pək*-, ^A*päk*-, etc., for the comparative data, as well as for the absence of both **e/o*- and **ġe/o*-presents in these verbs, without the need to assume retention on the part of Tocharian.

3.8. The elimination of simple thematic presents

In the previous six sections (3.2–3.6.2), the overall picture that has emerged is one of Tocharian innovation. Out of the 19 verbs that were treated (the 17 in Table 3.2 plus **klej*- ‘lean (against)’ and **dem(H)*- ‘build, grow’), there is only one verb for which the case for archaism is stronger than the case against: **h₁leng^{wh}*- ‘be light’ > PT **lank*- ‘hang’ which exhibits both an older present formation, i.e. a root present, and seems to derive from a more archaic meaning: stative ‘be light’ rather than dynamic ‘move lightly’.

The point for most of the verbs in sections 3.3–3.6.2 is that the Tocharian verbs which are cognate with simple thematic presents elsewhere predominantly show productive stem patterns. This means that there is no positive proof for a simple thematic present to most of them. Neither is there evidence of older present formations. However, in some verbs, there are demonstrable mechanisms that could have led to the replacements or reanalysis; the root **mei_hth₂*- provides a good example of how an inherited **e/o*-present could never have survived without restructuring. With this insight, we can now understand the aberrant stem pattern of ^B*māyta*-, ^A*māytā*- much better.

In many other Indo-European branches, part of the success of the **e/o*-present must have been due to its role in clearly separating the lexical root from the ending. In Tocharian, however, the reduction of PIE **e* to palatalising **ə* meant that the thematic vowel only served this purpose in the forms with the allomorph **e* (< **o*). Not only did the other allomorph **ə* obscure the root-final consonant by palatalising it, it was also reduced to -Ø- in many contexts. Instead of increasing clarity between root, stem and ending, the simple thematic suffix rather decreased it. It is therefore understandable that the simple thematic suffix would be a less attractive suffix in Tocharian than in other branches.

This, in turn, makes the treatment of the verbs with inherent labile semantics, e.g., **pek^w*- ‘cook’, **d^heg^{wh}*- ‘burn’, quite understandable (section 3.6.2). We have seen that the attested presents in Vedic are more varied than the reflexes in Tocharian,

where the stem pattern, albeit restricted to these verbs, is very homogeneous. From the more irregular system in Indo-Iranian, which is backed up by comparative data in other branches, we can arrive at the Tocharian system by assuming a conflation between inherited **e/o*-presents and **ie/o*-presents, exactly because of their root-final palatalisation.

The productive present stems chosen seem to a large extent to be based on the inherited aorist of the root. The evidence from nasal presents (section 3.5) is not very revealing, but it is worth noting that nasal presents and root aorists form a pattern in Proto-Indo-European as well as in Tocharian, and it may therefore not be surprising if the inherited present **uert-e/o-* was replaced with a nasal stem (cf. ^B*wärnāmane* ‘turning’).²⁰⁵

With regard to verbs that have **e/o*-present cognates in both CIE and Tocharian, **b^her-*, **h₂eǵ-*, **g^wieh₃-u-*, **leg^h-*, and **kleǵ-*, we may ask ourselves why they were spared this far-reaching replacement strategy. The answer to this question is not quite clear to me, but it is noticeable that they are almost all lacking a preterite stem. Out of the five verbs, three have suppletive preterites (**pər-*, **ak-* and **kəl-*), one has no preterite attested (**lək-*) and one has an *a*-preterite which is formed to the palatalised variant of the root and thus looks secondary (prt.act.3sg. ^B*śāya*). This matches Proto-Indo-European in which no aorist can be reconstructed for most of these verbs. The absence of a preterite stem could have allowed the presents to continue without fear of replacement from productive patterns, simply because there were no patterns available. In addition, there are no root-final laryngeals in these roots that could have distorted the *e*-formant of the suffix.

3.9. Chapter conclusions

To reiterate the question of the introduction to this chapter: Can we prove that Tocharian inherited only very few simple thematic presents? In brief, the answer is no. The stem cognate pairs between Tocharian *’ə/e*-presents of class [2] and reconstructible simple thematic presents are admittedly very low, whether one

²⁰⁵ To my knowledge, there are only two roots in final *-t-* that show a potential *’ə/e*-present or *’ə/e*-subjunctive and neither are very certain: ^B*kəwt-* ‘?’ attested only in the gerundive, either present or subjunctive, ^B*k_ucalle* with a possible side form *calle* (Pinault 1989b: 165; Peyrot 2013a: 739 fn. 147), and the *’ə/e*-sbj.[2] to ^B*kətt-* ‘put (down)’, cf. opt.act.3pl. *käccīyem* (THT22 b4), if not rather ^B*kətk-* (Adams 2013: 168–9; Peyrot 2013a: 730). This could indicate that simple thematic stems to *t*-final roots were avoided in Tocharian prehistory.

agrees with the addition of **leg^h-e/o-* ‘lie (down)’ and **kleġ-e/o-* ‘lean’ or not. However, the vast majority of verbs forming **e/o-* presents with root cognates in Tocharian show a variety of productive presents and stem patterns. This makes it more likely that Tocharian shows the innovative state, having replaced inherited **e/o-* presents with productive presents. There are several motivations for these replacements, for instance, the palatalising variant of the suffix which distorts the root-final consonant. This is also the case for the **ġe/o-* present, which is not found directly in Tocharian; if it was ever there, it must have been replaced. The merger of **e/o-* and **ġe/o-* presents can actually account for the behaviour of roots with inchoative-causative alternation expressed exclusively with voice in the present. The morphological peculiarities of this category of verbs will be discussed further in the following chapter.

The survey of the chapter has revealed only one possible archaism, **lank-* ‘hang’, which can be added to ^B*yok-*, ^A*yok-* < **h₁eg^{wh}-* ‘drink’ and ^A*wir* ‘young’ < adj. **uġHró-* as potential evidence for Tocharian Second. Besides this one lexeme, we must conclude that Tocharian evidence is much more consistent with the quote by Rasmussen (2002: 180) than that by Adams (1978: 280), namely that the paucity of the simple thematic presents appears to be due to several processes: sound change, lack of productivity, and the productivity of other stems.

Chapter 4 Archaisms in *s*-transitives and intransitives

4.1. The goal of this chapter

This chapter concerns an area of Tocharian verbal morphology which seems to be central to the constitution of the verbal system and has the potential to contain several archaisms: the formal strategies for encoding alternations between intransitive and transitive semantics. A single Tocharian root can form multiple verbs with different stem patterns; if there is a semantic difference between these verbs, it is often related to transitivity or agency. In the arrangement of the Tocharian verbal system, these alternations play a significant role; see the chapter on valency by Malzahn (2010: 50–99). Although the title of this chapter is relatively broad, the purpose of it is not to investigate the entire system of valency-alternating stem patterns, but to address two specific areas which may contain archaisms relevant to the cladistic position of Tocharian, namely the stem pattern with inchoative-causative alternation forming subjunctives of class [3] (suffix ^B-*e*-, ^A-*a*-) and root preterites of class [0] (TA type *nakät*, *nakänt* ‘perished’) on the one hand, and the *s*-transitive pattern that forms thematic subjunctives of class [2] on the other.

In the previous two chapters, there were some parts of the discussion that were left untreated since they did not—strictly speaking—fall under the scope of the respective investigations. In Chapter 2 on the origin of the *s*-preterite, the verbs that form oppositional middle intransitive root preterites of class [0] and *e*-subjunctives of class [3] were given relatively little attention. These verbs play a major role in Jasanoff’s presigmatic aorist theory, as he argues that they continue an inflectional

class inherited from Proto-Indo-European; see 2.2.3. Since the focus of the chapter was on the active paradigm and how it relates to the Hittite *hi*-conjugation, the asigmatic middle stem classes were not directly relevant. Within the larger history of the Tocharian verbal system, however, they are highly relevant as both the root prt.[0] and the *e*-subj.[3] are restricted to a small group of verbs and show distinct morphological and functional peculiarities. Their sigmatic present stems, and in particular how these use voice to indicate inchoative-causative alternation has already been treated in 3.7. Due to the peculiarities of this stem pattern, it is quite likely to be archaic within the Tocharian verbal system. The phylogenetic question at hand is whether it should be considered an archaism within Indo-European as well.

The first topic of this chapter (4.2–4.4) is therefore to investigate the possibility that the verbs that have root preterites of class [0], *e*-subjunctives of class [3] and sigmatic presents with voice opposition (3.7) reflect an inherited pattern from Proto-Indo-European; if so, it can be considered significant evidence of the early separation of Tocharian from the Indo-European family tree. If not, we need to understand how the pattern came about in Tocharian and what building blocks were used to create it.

The second topic treated in this chapter was mentioned in Chapter 3 (section 3.1) but left undiscussed. It is the possible isogloss, proposed by Jasanoff (1998; 2003: 224–7), that the simple thematic present originated as two morphologically distinct types, the first as replacement presents for earlier Narten presents and the second reanalysed from the subjunctive of the presigmatic aorist. Jasanoff proposes that only the first type existed by the time the Tocharian branch split from the family tree, and that Tocharian continues the second type in the more archaic function as a subjunctive. In Chapter 3, I argued that it is not possible to prove at present that Tocharian *did not* inherit the simple thematic presents in most of the verbs treated in that chapter. Still, the pattern predicted by Jasanoff's hypothesis exists: presents of class [8] are found side by side with 'ə/*e*-subjunctives of class [2] and *s*-preterites of class [3]. Interestingly, these are primarily found in opposition to intransitive stem patterns of *e*-presents of class [3].

The two topics thus have quite a lot in common. Firstly, they involve the same central stems, e.g., the *s*-preterite and the *e*-present and *e*-subjunctive. Secondly, they both participate in stem alternations that increase or decrease valency. Lastly, they are relevant to the question of the position of Tocharian through their respective links with the presigmatic aorist theory, since it is inherent in that theory that Tocharian left the Indo-European family tree as the second branch (see subsection

2.2.3). These similarities raise the question whether the two patterns evolved from the same proto-pattern; this possibility will be discussed at the end of the chapter. The current chapter is unlike the preceding and subsequent chapters in that it does not investigate one single isogloss, but rather examines two areas of Tocharian verbal morphology that are ultimately related—certainly in form and function and possibly in origin.

In the following subsection (4.1.1), I give a brief description of what is meant by inchoative-causative alternation and what kinds of strategies are used to mark this distinction in Tocharian in order to give a semantic and formal overview of the stem patterns that will be discussed further on in the chapter. In subsection 4.1.2, the structure of chapter is presented.

4.1.1. Inchoative-causative alternation in Tocharian

Verbal valency is a key factor in the formal composition of the Tocharian verb. The traditional treatments of the verb, e.g., Sieg, Siegling & Schulze (1931: 323) and Krause (1952: 24–6), describe the opposition between the *Grundverb* stem patterns and one or more *Kausativa* as a basic division of the verbal system. However, it was clear very early in the research history of Tocharian that form and function of the *Grundverben* and *Kausativa* do not correspond as neatly as one might expect; see Lane (1953: 485), Krause & Thomas (1960: 174). It is thus understandable that quite a lot of attention has been given to the description and analysis of the valency increasing and decreasing strategies in Tocharian; see a.o. Marggraf (1970), Winter (1980a), Carling (2003b; 2009), Malzahn (2010: 50–100; 2016b), Seržant (2011; 2014). Certain stem patterns are linked with intransitivity and transitivity, e.g., *e*- and *o*-presents of class [3] and [4], and *na*-presents of class [6], respectively, but there are exceptions in all classes. Furthermore, while there is definitely some systematicity in the stem pattern alternations and their semantic function, they cannot be considered predictable; see the lists of alternations in Carling (2003b; 2009).

There is a possibility for some confusion in this chapter between the morphological category *Kausativa*, for which I use the English term *causatives*, and the general linguistic term *causative* indicating a verb in which the subject causes the action of the verb. It will mostly be transparent which is meant (e.g., “a causative *sk*-prs.[9]”, or “causative semantics”), but in passages where the terms may be ambiguous, I use “functionally causative” *vel sim.* to refer to the latter.

The type of semantic alternation which will be focused on in this chapter is what Haspelmath refers to as inchoative-causative alternation, which he defines like this:

“[...] it is a pair of verbs which express the same basic situation (generally a change of state, more rarely a going-on) and differ only in that the **causative** verb meaning includes an agent participant who causes the situation, whereas the **inchoative** verb meaning excludes a causing agent and presents the situation as occurring spontaneously.” (Haspelmath 1993: 90)²⁰⁶

There are several strategies for marking this alternation in Tocharian, two of which we saw in the previous chapter. The first is alternation between complete stem patterns.²⁰⁷ This involves the intransitive patterns characterised by *e*-presents and *o*-presents, which stand in opposition to *s*-transitive stem patterns with *s*-presents of class [8] or causative patterns with *sk*-presents of class [9] with initial accent in Tocharian B (Tocharian A class [8]). Examples of this type of alternation can be found in ^B*tsəra-*, ^A*tsärā-* ‘be separated’ (3.4.1) and ^B*tsəma-*, ^A*tsämā-* ‘grow (itr./tr.)’ (3.4.4). Another strategy for marking inchoative-causative alternation is suppletion, e.g., ^B*sruka-* ‘die’ ~ ^B*kau-* ‘kill’, ^A*wäl-* ‘die’ ~ ^A*ko-* ‘kill’, which will not be treated further in this chapter.

The final strategy was described in 3.7; a small group of verbs expresses inchoative-causative alternation through voice alternation, the active being transitive, the middle intransitive. These verbs all have sigmatic presents of class [8], [9] and [10].²⁰⁸ The voice alternation is limited to the present in Tocharian A and to the present and preterite in Tocharian B; in the subjunctive and the Tocharian A preterite, stem alternation is used. There are no verbs in which diathesis is the only marker of inchoative-causative alternation in all stems.

In Table 4.1, the verb ^B*nək-*, ^A*näk-* ‘perish, disappear; destroy’, the best attested verb of the group with inchoative-causative alternation, is presented to illustrate the stem pattern. The group is remarkable in several ways beside the use of voice. First and foremost, they all have intransitive subjunctives of class [3] with the suffix ^B*-e-*, ^A*-a-*, e.g. ^B*ks-e-mar* ‘will be extinguished’, vn. ^A*ks-a-lune* ‘extinction, i.e. *nirvāṇa*’. Since this subjunctive class is limited to these verbs, we may consider it a primary diagnostic feature of the group. Another important—and highly limited—stem is the Tocharian A root preterite of class [0], which is formed from a root stem with vocalism ^A*-a-*, e.g., 3sg. *nakät* ‘perished’, 3pl. *nakänt*, 3sg. *pakät* ‘ripened’. In Tocharian

²⁰⁶ Boldface in the original.

²⁰⁷ I.e. alternations between separate verbs derived from the same root, or *Averbos* in the terminology of Malzahn (2010).

²⁰⁸ With the exception of ^B*kəs-* ‘be extinguished’ which forms an *’a/e*-prs.[2] to a sigmatic root.

B, we find an *s*-preterite middle with *e*-grade in the root; since this type of Tocharian B preterite is the synchronic equivalent of the Tocharian A root prt.[o] and in all likelihood is cognate with it (see 4.3.5), I use the term “root prt.[o]” as a shorthand for both formations and their predecessor in Proto-Tocharian. Both *e*-sbj.[3] and the root prt.[o] are exclusively middle; they are matched by active transitive stems, also found in the *s*-transitive pattern: root sbj.[1] and *s*-prt.[3]. The division between *s*-prt.[3] and root prt.[o] is echoed in the preterite participle where we find two types in Tocharian B, corresponding to the transitive and intransitive stems, respectively.

Table 4.1: Stem patterns of ^B*nək*-, ^A*näk*-

		itr. ‘perish; disappear’		tr. ‘destroy’	
TB	prs.	[8] mid.	<i>nakštär</i>	[8] act.	<i>nakšäm</i>
	sbj.	[3] mid.	<i>nketär</i>	[1] act.	1sg. <i>neku</i>
	prt.	[3] mid.	<i>neksate</i>	[3] act.	<i>neksa</i>
	PP		<i>neneku</i> ^{* α}		<i>nenku</i>
TA	prs.	[1o] mid.	<i>näknäštär</i>	[8] act.	<i>nkäṣ</i>
	sbj.	[3] mid.	<i>nkatär</i>	[1] act.	2sg. <i>nakät</i>
	prt.	[o] mid.	<i>nakät</i>	[3] act.	<i>ñakäs</i>
	PP		<i>nanku</i>		<i>nanku</i>
(Malzahn 2010: 681–2; Peyrot 2013a: 763)					
^α Attested in the m.obl.sg. <i>nenekoṣ</i>					

The formal peculiarities of this stem pattern have intrigued scholars for decades (see below 4.2.2 and 4.3.5). While the stems found in the transitive stem pattern, i.e. *s*-prs.[8], root sbj.[1] and *s*-prt.[3], are found in different configurations to many more verbs, the Tocharian A root preterite [o] is only found with verbs that also have *a*-subjunctives of class [3]. In addition, the verbs that form *e*-sbj.[3] (suffix ^B*-e*-, ^A*-a*-) and a Tocharian A root prt.[o] show an unusually high rate of inherited roots. Thus, to understand the origin of the stem pattern of ^B*nək*-, ^A*näk*- ‘perish, disappear; destroy’ and the other verbs of this type, we should focus on the features of the intransitive paradigm.

4.1.2. Structure of the chapter

The chapter is structured as follows. In the following section, the *e*-subjunctive of class [3] will be treated. I start by presenting the synchronic facts of the class (4.2); this includes an overview of the verbs which attest an *e*-sbj.[3] (suffix ^B-*e*-, ^A-*a*-). Afterwards, I discuss the transitive subjunctives that are attested side by side with these to show that the verbs indeed show a semantic alternation between inchoativity and causativity (4.2.1). In subsection 4.2.2, I discuss the various theories surrounding the origin of *e*-sbj.[3], before giving my own opinion on the matter.

The Tocharian A root preterite of class [o] is treated in a similar fashion in section 4.3. First, I give the synchronic facts of the stem formation and discuss which verbs belong to it, including the equivalent formation in TB (4.3.2). The oppositional transitive preterite stems are discussed in 4.3.3. Since preterite stem alternation is found also in the preterite participle, these will be discussed in 4.3.4. Finally, in 4.3.5, I present the diachronic hypotheses about the root prt.[o] and present a hypothesis about their starting point and trajectory in Tocharian.

In section 4.4, I combine the conclusions from the previous two sections and present a unifying hypothesis of how the verbs in question could have developed in Tocharian. The discussion starts with the comparative evidence of stem formation from the other Indo-European languages (4.4.1); from there, the hypothesis is developed taking the Tocharian and comparative facts into account (4.4.2–4.4.3). In subsection 4.4.4, I present the preliminary conclusions of the first topic.

In section 4.5, the treatment of the second topic, the stem pattern with *s*-prs.[8], *ʔ*/*e*-sbj.[2] and *s*-prt.[3] and the ‘competing subjunctives theory’, will begin. I collect all instances of this pattern and discussing their distribution (4.5.1–4.5.3). The results of the data collection and analysis lead to new insights about this particular pattern, which are tied together with the conclusions about *e*-sbj.[3] and the root prt.[o] (4.5.5). In section 4.6, I propose a hypothesis explaining why we find two different strategies for marking inchoative-causative alternation in Tocharian, before summarising and concluding in section 4.7.

4.2. The *e*-subjunctive of class [3]

As described above, the *e*-sbj.[3] is one of two stem classes which together may contain important information with regard to the position of Tocharian (the other being the Tocharian A root prt.[o], see 4.3). In this section, the synchronic facts and diachronic theories concerning *e*-sbj.[3] are presented, starting with the members of

the class and their formal features.

Sbj.[3] consists of a closed group of 9 verbs (10 according to some) which have a non-ablauting suffix ^B-e-, ^A-a- (< PT *-e-), middle inflection and intransitive semantics. Formally, it is identical to the *e*-prs.[3], but their stem patterns are different and the formation is no longer productive; see Lane (1959: 164–6). In Table 4.2, there are examples of attested forms for each verb. Next to a finite form (3sg. unless otherwise indicated), I have given a diagnostic form which proves that the stem belongs in the subjunctive: a verbal noun for Tocharian A and either a verbal noun or an infinitive for Tocharian B.

Table 4.2: Examples of *e*-sbj.[3] forms

		TB <i>e</i> -sbj.[3]	TA <i>a</i> -sbj.[3]
^B <i>kən-/^Akän-</i>	‘occur’	3sg.-obj.1sg. <i>knetär-ñ</i> , vn. <i>knelñe</i> * ‘fulfilment’ ^α	3sg.-obj.pl. <i>knatr-äm</i> , vn. <i>knalune</i> ‘fulfilment’
^B <i>kəs-/^Akäs-</i>	‘be extinguished’	1sg. <i>ksemar</i> , vn. <i>kselñe</i> ‘extinction’ (= <i>nirvāṇa</i>)	vn. <i>ksalune</i> ‘extinction’ (= <i>nirvāṇa</i>)
^B <i>təm-/^Atäm-</i>	‘be born’	<i>cmetär</i> , inf. <i>cmetsi</i>	<i>cmatär</i> , vn. <i>cmalune</i> ‘birth’
^B <i>nək-/^Anäk-</i>	‘perish; disappear’	<i>nketär</i> , inf.all. <i>nketsiś</i>	<i>nkatär</i> , vn. <i>nkalune</i> ‘disappearance’
^B <i>nəm-/^Anäm-</i>	‘bow’	<i>nmeträ</i> , inf. <i>ñmetsi</i>	
^B <i>pək-/^Apäk-</i>	‘ripen; cook’	vn. <i>pkelñe</i> ‘ripening’ ^β	vn.perl. <i>pkalūneyā</i> ‘through the cooking/ripening’
^B <i>ləwk-/^Aluk-</i> —/ ^A <i>wäl-</i>	‘light up’ ‘die’	<i>lyuketrä</i> , inf.all. <i>lyukesiś</i>	<i>wlatär</i> , vn. <i>wlalune</i> ‘death’
^B <i>tsək-/^Atsäk-</i>	‘burn’	1sg. <i>tskem(a)r</i> , inf. <i>tsketsi</i>	vn. <i>tskalune</i> ‘burning’

^α Found in a derived *ṣṣe*-adj: THT₅₉₁ a6 *akālkāntse knelñeṣṣe tsārwo* ‘the joy of the fulfilment of a wish’

^β Translates Skt. *vipāka* ‘(bad) digestion’ in PKAS₂C a2

There are 8 verbs with an *e*-subjunctive of class [3] attested in Tocharian B. Most of them have a non-palatalising root vowel -ə-, but we find initial palatalisation in all forms of ^B*cme-* ‘will be born’, 3sg. ^B*lyuketär* ‘will light up’ and the infinitive ^B*ñmetsi* ‘to bow’. The latter alternates with unpalatalised forms within *e*-sbj.[3]; cf. 3sg. ^B*nmetär*,

3pl. ^B*nmentär*. Neither ^B*təm*- or ^B*nəm*- have initial palatalisation in other stems, but since Tocharian A also have consistent palatalisation in ^A*cma*- ‘will be born’, this feature seems to be archaic. The Tocharian A attestations correspond almost one-to-one with those of Tocharian B, including in their meanings; only ^B*lyuke*- ‘light up’ and ^B*nme*- ‘bow’ lack a Tocharian A cognate stem.

In many treatments of the *e*-sbj.[3], the verb ^B*lawk*-, ^A*luk*- has not been included because the stem ^B*lyuke*- (3sg. *lyuketrä*) was analysed as a present (Krause 1952: 67; Jasanoff 1978: 25; Malzahn 2010: 854). This changed with the discovery of an infinitive ^B*lyukesiś* (THT2706 a3). Since the infinitive is formed to the subjunctive stem in Tocharian B, this form proves that the stem *lyuke*- must be subjunctive (Adams 2012: 29).

- 36 TB THT2706 a3
naïmaññe śkasne lyukesiś_{inf.all.} paikāwa ·e ///
 “on the sixth (day) of the first month **in order to be illuminated** I wrote
 (him)”²⁰⁹

This reinterpretation fits well with the attestation of the 3sg. form, since conditionals with subjunctives in both protasis and apodosis usually denote “two future events that may possibly take place” (Peyrot 2013a: 309):

- 37 TB THT46 a7
mäkte lwasāntso auśuwaṃts śesa lyuketrä_{sbj.mid.3sg.} yśīye waiptā(yar rano
lwasāntso tonak auśuwaṃts) pr(e)ntse yente kaskan-me mant śaṇ śāmna keśptes
twe
 “[Just] as when the animals are dwelling together, the night **will grow light**, but,
 when (the animals) are dwelling apart, in an instant the wind scatters them, so
 pay attention to your relatives!”²¹⁰

There is some disagreement as to existence of an *e*-sbj.[3] to ^B*rəw*- ‘open (itr./tr.)’. Malzahn (2010: 324) and Pinault (2012c: 258) take the optative middle 3pl. form ^B*ruwyenträ* (PKAS8C b1) as evidence for an *e*-sbj.[3]; see ex. 38. However, the root sbj.[1] and *e*-sbj.[3] merge formally before the optative suffix, so it cannot be determined formally to which stem this form belongs. The form does participate in valency alternation with a transitive active forms of the root sbj.[1] (ex. 39), which would be an argument in favour of the *e*-sbj.[3] interpretation of Malzahn and Pinault

²⁰⁹ See Adams (2012: 29 fn. 17).

²¹⁰ Trsl. by Peyrot (2013a: 673).

since inchoative-causative alternation indicated only by diathesis would be unique within the root subjunctive of class [1]; *pace* Peyrot (2013a: 804 fn. 698).²¹¹

38 TB PKAS8C b1

*kete añme tākaṃ twer(i) ruwyenträ*_{opt.mid.3pl.}

‘to whom there is a wish: **May** the doors **open**.’²¹²

39 TB PKAS17A b4–b5

*ñ(ä)kcyē*²¹³ *śāmñeṃ śaiṣṣeṃtso re*^{b5} *wät*_{sbj.act.2sg.} *yenme emparkre*

‘**you will open** wide the door to the worlds of gods and humans’²¹⁴

Outside the subjunctive, only one present form and one absolutive are attested. In the present, we find a middle *s*-prs.[8] 3pl. form ^B*rusenträ* which is intransitive (also attested in PKAS8C b1). There is an absolutive attested, ^B*rerūwermeṃ*, but it is attested in a completely fragmentary context in THT393.a a3 so the meaning cannot be ascertained. If ^B*rəw*- truly belongs in this stem pattern, we would expect an intransitive participle †*rerewu* to alternate with ^B*reru**, but the lack of evidence makes the matter inconclusive.

To summarise, the stem ^B*lyuke*- ‘(will) light up’ should certainly be included in the group of verbs forming *e*-subjunctives of class [3]. There are structural indications that ^B*ruwyenträ* ‘open (itr.)’ also belongs here as well, but due to the lack of conclusive evidence, it will not be included in the diachronic discussion to follow.

4.2.1. Oppositional causative subjunctives: root sbj.[1], ’*a*/e-sbj.[2] and *sk*-sbj.[9]

One of the most peculiar facts about the verbs that form subjunctives of class [3] (suffix ^B*-e*-, ^A*-a*-) is that outside the subjunctive, they express semantic inchoative-causative alternation using voice rather than stem alternation; see also 3.7. In the subjunctive, however, stem alternation is used. There are three stem classes used to express the causative meaning: root sbj.[1], ’*a*/e-sbj.[2], and *sk*-sbj.[9]. Which subjunctive class is more original will be a topic of later discussion (see section 4.6),

²¹¹ To my knowledge, there are only two other verbs that show a difference in meaning between the active and the middle in a root sbj.[1] stem, but in neither case is there a decrease of transitivity: ^B*ai*- ‘give A; take M’ and ^B*awn*- ‘hit A; begin M’.

²¹² See Schmidt (1974: 77): “Wer den Wunsch haben sollte: “Die Türen möchten sich öffnen”

²¹³ For m.obj.pl. *ñ(ä)kcyem* ‘of the gods’.

²¹⁴ Trsl. by CEToM, ed. G.-J. Pinault, T. Illés & M. Peyrot, accessed 5 July 2023.

so in this subsection, I provide an overview of the forms in question and their uses.

In four verbs, inchoative *e*-subjunctives of class [3] are found in opposition to functionally causative root subjunctives of class [1] in Tocharian B: ^B*kəs*-, ^B*nək*-, ^B*pək*-, and ^B*tsək*-. Examples of both stems are given below to illustrate the opposition; there are only attested finite forms of the verb ^B*nək*- in root sbj.[1]. ^B*nəm*- also forms both an *e*-sbj.[3], e.g., 3sg. *nmetär*, inf. *ñmetsi*, and root sbj.[1], but the latter is only securely attested in the abstract noun ^B*nmalyñe* ‘bow’ (THT414 a2). For this reason, the semantic difference cannot be positively established, but it can be inferred with reasonable certainty. A second form ^B*namalñe* (THT190 a1), attested without context, may also belong here, but could also be derived from the related verb ^A*nāmā*- ‘bend (itr.)’, found in the abstract noun ^A*nmālune* ‘bending’ (A213 a1) (Peyrot 2013a: 764 fn. 366).

^B*kəs*:- *e*-sbj.[3] ‘be extinguished’ (ex. 40), root sbj.[1] ‘extinguish’ (ex. 41)

- 40 TB THT29 a8
 : *mā walke ñke ñiś ksemar*_{sbj.mid.3sg.} *tu postām onmiñ tākañ-me* :
 “soon then I **will be extinguished** and after that there will be regret for you
 (pl.)”²¹⁵

- 41 TB THT566 a1
*toñ pwāra kastsis*_{inf.all.} *spe* ///
 “**in order to extinguish** the fires ... nearby...”

^B*nək*:- *e*-sbj.[3] ‘perish; disappear’ (ex. 42), root sbj.[1] ‘destroy’ (ex. 43)

- 42 TB THT27 a6
 : *nketär-m(e)*_{sbj.mid.3sg.-obj.pl.} *ñk-ālyauce ynāñmñe*
 “if respect for one another **disappears for them...**”²¹⁶

- 43 TB THT27 a5
*nakām*_{sbj.act.3pl.} *šamāññeṣṣe maim pālskw ālyaucempa snai ynāñmñe tākañ*
 “**they will destroy** the thinking and feeling of monkhood [and] there will be
 disrespect towards one another”

^B*pək*:- *e*-sbj.[3] ‘cook; ripen’ (ex. 44), root sbj.[1] ‘cook; let ripen’ (ex. 45)

²¹⁵ See Sieg & Siegling (1983: 64).

²¹⁶ See Sieg & Siegling (1983: 61) for ex. 42 and 43.

- 44 TB PKAS7B b2

k_use no sū yāmor alyek ī«ke»ne yāmtrü : alyek ī(ke)ne pkelñe_{vn.acc.sg.} tuntse yānmāṣṣām :

“But what is the deed which, if one does it in one place, one achieves the **ripening** in a another place?”²¹⁷

- 45 TB PKDAM507.37 and .36 29

cau śak-ñyu pikwalañe okoṣe śātresa Putewante tanti maṣa-me. paksi_{inf.} māwk carka

“At the cost of the resulting grain of the 19th year, Puttawante made *tanti* for us. He did not let it **be cooked/ripen**.”²¹⁸

^B*tsək-*: *e*-subj.[3] ‘burn (itr.)’ (ex. 46), root subj.[1] ‘burn (tr.)’ (ex. 47)

- 46 TB THT1681 a3

ñkek nraiṣṣana pwārasa tskem(a)r_{subj.mid.1sg.}

“now by the fires of hell I **will burn**”²¹⁹

- 47 TB IOLToch159 b3

/// tsaktsy_{inf.} auntsate-ne :

“[it] began **to burn** her”²²⁰

In Tocharian A, the evidence for root subj.[1] in these verbs is limited to one instance. The act.2sg. form *nakāt* is attested in PKNS1 a4–b1 (ex. 49). Although the form is identical to the prt.[o] 3sg., such an interpretation is extremely unlikely since the rest of the text is written in the 2nd person present, imperative and subjunctive, respectively. Together with the prohibitive particle *mar*, the subjunctive here forms a future prohibitive (Thomas 1958: 304).

²¹⁷ See Schmidt (1974: 130): “Welches aber [ist] die Tat, davon er, wenn er sie an dem einen Ort tut, an einem anderen Ort die Reife [Vergeltung] erlangt?”; Schmidt (1974: 130 fn. 4): “Wtl. Welches aber [ist] die Tat: Tut er [sie] an dem einen Ort, [dann] erlangt er das Reifen davon an einem anderen Ort?”.

²¹⁸ See Ching (2010: 211).

²¹⁹ See the edition by Ogihara (2012: 162).

²²⁰ See Krause (1952: 112): “(Die Leidenschaft) begann sie zu verbrennen.”

^A*näk-*: *a*-sbj.[3] ‘perish; disappear’ (ex. 48), root sbj.[1] ‘destroy’ (ex. 49)

48 TA A340 b7

/// *ošem pkāmār śikṣāpat mānt ne tmäkyok mā nkatār*_{sbj.mid.2sg.} :

“Keep the moral by night, so that **you will not perish** by that same thing!”²²¹

49 TA PKNS1 a4–b1

mar k_uleyis mosam kāpñe śol nakā^{b1}_{t_{sbj.act.2sg.}}

“**Do not destroy** your dear life for the sake of a woman”

The opposition between an intransitive *e*-sbj.[3] and a transitive thematic *’ə/e*-sbj.[2] hardly constitutes a pattern. There is only one assured instance, one possible one and one rather tenuous one, and they are all found in Tocharian B. The first is ^B*lawk-* ‘light up’ with a transitive *’ə/e*-sbj.[2], inflected in the middle, rather than active. Among *s*-transitives with an *’ə/e*-sbj.[2], middle voice is rare,²²² and within the group with intransitive *e*-subjunctives of class [3], it is unique for a transitive stem. In *s*-transitives outside this group, transitive middle *’ə/e*-sbj.[2] forms are sometimes found: opt.mid.3sg. ^B*palyśitār* (sic), opt.mid.1sg. ^B*triśimar*.

50 TB PKAS16.6B a2

/// *rne lyuštār*_{sbj.mid.3sg.} *wes su* :

“he **illuminates** us in...”²²³

51 TB THT244 b3

*epastyu śaiṣṣe lyuśsi*_{inf.} *ñakremem* :

“O you who are able to **illuminate** the world from darkness”²²⁴

There is another candidate for an *’ə/e*-sbj.[2], although much more disputed: the gerundive ^B*cmalye* to the verb ^B*tam-* ‘be born’ (ex. 52).

52 TB THT424 a3

*śem cmalye*_{ger.m.nom.sg.} *yapo(yne)* ///

“... he came to the land **where he is to be reborn**”

²²¹ Trsl. by Peyrot (2013a: 264).

²²² It is only found with opt.mid.3sg. ^B*palyśitār* B20b2 to ^B*palka-* ‘burn’ (purely middle) and opt.mid.1sg. ^B*triśimar* PKAS4Bb4 to ^B*trayka-* ‘go astray, be confused’ (among active forms).

²²³ Trsl. by Adams (2012: 26).

²²⁴ See Krause & Thomas (1960: 103) on *epastyu* as vocative singular ‘O capable one’.

The form m.nom.sg. ^B*cmalye* is attested twice (THT424 a3 and THT3987 a3). In his review of the first edition of Adams' dictionary (1999), Winter (2001: 131) suggests that it represents the transitive counterpart of the intransitive *e*-sbj.[3] ^B*cmetsi*, namely a root sbj.[1] **camtsi*. This is supported by Malzahn (2013a: 131) on structural grounds, as we would expect a root sbj.[1] next to the attested intransitive *e*-sbj.[3]. Ogihara (2015: 93–4) has identified two more forms in PKNS280 a2 and a3: f.obl.sg. *cimalyai*,²²⁵ which seem to support the analysis as a transitive gerundive (ex. 53).

53 TB PKNS280 a3
 /// (*ci*)*malyai*_{ger.f.obl.sg.} *ysāre klā(te)* ///
 ‘he brought wheat to be produced’²²⁶

There is one more form cited by Adams (1999: 292; 2013: 308) and Malzahn (2013a: 130): *cmāl(le)* in THT146 b6. This reading cannot be maintained, however, as the lost part of the akṣara <1- > cannot contain a vowel <e>. Compared to other ligatures with geminate <ll> in the manuscript, it also seems unlikely that the ligature following <*cma*> has geminate <ll>.²²⁷ We are therefore probably dealing with a different word, which should be left out of consideration in the discussion of ^B*cmalye*.

The analysis of the form as a root sbj.[1] is problematic. It does not account for the initial palatalisation of ^B*cmalye* which is not a feature of the root sbj.[1]; compare vn. ^B*namalñe*, ^B*nmalyñe* ‘± bending’ (Adams 2013: 357), 1sg. ^B*neku-me* ‘I destroy us/you/them’, inf. ^B*kastsī* ‘to extinguish’. A thematic stem in which the palatalisation is expected is more likely; compare other ‘ə/e-prs.[2] gerunds ^B*aśalle* to *ak-ə/e-* ‘lead’, ^B*pralle* to ^B*pər-ə/e-* ‘carry’.²²⁸

Malzahn (2013a: 133–4) presents several arguments that ^B*cmalye* is a gerundive of necessity, not of possibility, meaning that it is formed to the present stem rather than the subjunctive. Since the synchronic present stem is a causative *nəsk*-present (class [10]), ^B*cmalye* obviously cannot be the synchronic present gerundive, but Malzahn proposes that it represents a more archaic form that has been lexicalised. The most important argument for her concerns ex. 52 from the text THT424. In this text, a

²²⁵ The first syllable is due to ə-epenthesis and subsequent fronting to *i* (Peyrot 2008: 55–8; Ogihara 2015: 94).

²²⁶ Trsl. by Ogihara (2015: 94). A complete form that attests the first syllable is found in the same text (PKNS280 a2), but with less context.

²²⁷ I would like to thank O. Lundysheva for helping me navigate through this manuscript.

²²⁸ The latter example illustrates the vocalisation of a gerundive to an ‘ə/e-prs.[2], but is of course ambiguous with regard to palatalisation.

Bodhisattva descends from the Tuṣita-heaven (line a4). According to Malzahn (2013a: 131), this Bodhisattva can be identified as Maitreya; on those grounds, she argues that the referent of the gerundive in a3 (ex. 52) is likewise Maitreya. In order to determine the form *cmalye* as a present gerundive of necessity, rather than a subjunctive gerundive of possibility, Malzahn (2013a: 133–5) points to Buddhist doctrine, according to which the birthplace of Maitreya is predetermined: he must be born in the land Madhyadeśa.²²⁹ If the identification of the Bodhisattva in a4 as Maitreya is correct and if he is also the referent of the gerundive in a3, this text would speak in favour of ^B*cmalye* as an old lexicalised present gerundive of necessity. However, the example is quite uncertain.

^B*cmalye* seems to mean more or less the same as the synchronically regular present gerundive of class [10] in the limited examples available: ^B*tänmaṣṣälle* (THT150 b1), ^B*tänmäṣle* (THT142 b3, arch.), ^B*tänmäṣle* (THT225 b1, arch.), which may lend circumstantial support to the analysis as a present gerundive. Both the gerundive meaning ‘to be born’ and a purely abstract meaning ‘(re)birth’ is possible, much like meanings of the antonyms: prs.ger. ^B*srukelle*, sbj.ger. ^B*srukalle* ‘to die; death’ (Thomas 1952: 48, 56).

54 TB THT3987 a3
 /// *aśari ṣaṇ ^Bcmalye*_{ger.m.obl.sg.} *pernent* – ///
 “the *ācārya* [...] his own glorious (re)birth”

55 TB THT142 b3
 /// [*tä*]*ṇmäṣle*_{prs.ger.m.nom.sg.} *srukalleṣa māka kekkärkū* ///
 “the one to be born is completely bound to death”²³⁰

56 TB THT150 b1
*tänmaṣṣälle*_{prs.ger.m.nom.sg.} *srukelle ktsaitsñe* ///
 “birth, death, old age”²³¹

Malzahn (2013a: 134–6) argues that the interpretation of ^B*cmalye* as an original present gerundive supports her hypothesis that the whole Tocharian subjunctive originated in former present stems. She (2013a: 135 fn. 20) suggests that ^B*cmalye*

²²⁹ This is supported by parallels in the Old Uyghur Maitrisimit (Geng, Klimkeit & Laut 1987: 355, 366; Malzahn 2013a: 133–4).

²³⁰ See Carling (2000: 74): “Der Geborene ist völlig *an den Tod* (Perlativ) gebunden.” (her emphasis).

²³¹ Or “to be born, to die, old age...”; see Thomas (1952: 56)

attests an original intransitive root stem **cəmə-* which also gave the *e*-subj.[3], following Peters (2006: 334-5 fn. 16). She further asserts that this stem was pushed into the subjunctive before Proto-Tocharian times as she takes the prs.[10] **təm-nəsk'ə/e-* as an innovation replacing an earlier *s*-prs.[8]. While the interpretation of ^B*cmalye* as an archaic present stem is likely, I do not find this hypothesis attractive. There is no evidence that the stem ever functioned as a subjunctive. Rather, the form can be understood as a relic of the thematic present stem which was standard in this group of verbs before the replacement by sigmatic presents; see 3.7.

There is a form ^B*k(a)ntär* often repeated in the scholarship as either a root subj.[1] or an *ə/e*-subj.[2] (mid.3sg.) belonging to the root ^B*kən-* ‘occur; fulfil’. Hackstein (1995: 232–4), followed by among others the LIV (2001: 164 fn. 8), Ringe (2000: 132), and Malzahn (2010: 568), suggests that it ultimately derives from the Indo-European thematic subjunctive of the root aorist of **ǵenh₁-*, i.e. the form was originally an *ə/e*-subj.[2] which underwent depalatalisation of the root final consonant: **kañtär* > *kantär*. It is based on a fragmentary passage, which Sieg & Siegling (1953: 379 fn. 1) restore in this way:

57 TB THT594 a1
 trslit. /// *·ka k·nta [rñ]·[sa]* ///
 trscr. (*akāl*)*k k(a)ntär ñ(i) sä*
 trsl. “may the wish **come true** for me...”

There are at least three problems related to this restoration: 1) other restorations are certainly possible, 2) there is no proof that the form was ever thematic, and 3) the intransitive meaning ‘come about’ is also expressed by the *e*-subj.[3], so if the restoration is correct, the form *k(a)ntär*, whether a root subj.[1] or an *ə/e*-subj.[2], would probably be secondary. This form can thus not be truly informative; for a more detailed discussion, see Peyrot (2013a: 397–8).

In Tocharian A, the roots *kän-* ‘occur; fulfil’ and *täm-* ‘be born; create’ form oppositional causative *sk*-subjunctives of class [9]: subj.act.1sg. *knāsam*, opt.mid.3sg. *tmāṣitär* (A303 b7, A311 b3, A463 b5). The latter is mirrored by causative optatives found in Tocharian B, e.g., opt.mid.3sg. ^B*tanmaṣṣitär* (sic),²³² and matches the causative stem patterns found to these two verbs:

²³² For expected ^B*tanmāṣitär*.

TB *sk*-prs.-sbj.[9] *kónaṣṣa/ske*-, caus. prt.[2] *kyána*-

TA *s*-prs.[8] *känṣa/sa*-, caus. prt.[2] *kakänā*-

TB *ʾə/e*-prs.-sbj.[2] *tónmāṣṣa/ske*-,²³³ prt.ptcp. *tetanmäṣṣu*,

TA *näs*-prs.[10] *tämnäṣa/sa*-, caus. prt. *tatämṣā*-, prt.ptcp. *tatämṣu*

Finally, it is worth noting that only one verb that forms an subjunctive of class [3] in Tocharian shows no evidence of any inchoative-causative alternation in any stem: ^A*wäl*- ‘die’, *a*-sbj.[3].mid.3sg. *wlatär*. The verb is not attested in Tocharian B. The present and subjunctive stems fit the general pattern with an intransitive middle *näs*-prs.[10], e.g., 3sg. *wälläštär*, and an *a*-sbj.[3] (ex. 58). It deviates from the pattern by forming an active *s*-preterite which expresses the preterite meaning.

58 TA A130 b5

/// *lkām kusne mā walu tāṣ mā pat wlatär*_{sbj.mid.3sg.}

‘I see who may not have died, or **will not die**’²³⁴

There are thus three methods of forming functionally causative subjunctive stems next to an intransitive *e*-subjunctive of class [3] in Tocharian B and two in Tocharian A. In Tocharian B, the root sbj.[1] is the most common, formed to four, possibly five, verbs. In Tocharian A, we only find one cognate stem of this type (to ^A*näk*-), but as there are no counterexamples in the other verbs and we know that the root sbj.[1] is recessive in Tocharian A, we may safely reconstruct this pattern back to Proto-Tocharian. There two verbs that form causative *sk*-subjunctives of class [9] which seem to constitute a special sub-pattern within this group of verbs: ^B*kən*-, ^A*kän*- and ^B*təm*-, ^A*täm*-. Only one verb forms a functionally causative *ʾə/e*-subjunctive of class [2]: ^B*lawk*-. The other example, the gerund *cmalye* to ^B*təm*-, while going back to a simple thematic stem, is probably a lexicalised present form.

4.2.2. The origin of *e*-sbj.[3]

Before we can understand the origin of the stem pattern with subjunctive of class [3] and the root preterite of class [o], it is helpful to investigate the possibilities for each stem class individually. The purpose of this subsection is therefore to present and discuss the theories proposed about the origin of *e*-sbj.[3], starting with Proto-

²³³ Technically, a *ʾə/e*-present-subjunctive of class [2], since all forms including the preterite participle can be derived from ^B*tənmāsk*- (Peyrot 2013a: 753).

²³⁴ Trsl. by Peyrot (2013a: 649).

Tocharian and moving backwards. At the end of the subsection, I will present my own conclusions about the source and development of *e*-sbj.[3].

The reconstruction of the formation to Proto-Tocharian is fairly straightforward. The stem has zero grade in the root and the suffix ^B-*e*-, ^A-*a*- consistent with non-palatalising PT **e* < PIE **o*. Whether the zero grade of the root reflects a PIE **e*-grade or zero grade is debatable since the attestations go in both directions: ^B*lyuketär*, ^B*lyukesís* and ^B*cmētär*, ^A*cmātär* imply PT **CəCe-*, while the rest, e.g., ^B*nkētär*, ^A*nkātär*, ^B*knetär*, ^A*knaträ*, point to **CaCe-*.

Theories with thematic sources

Krause & Thomas (1960: 200) implicitly make a connection between the simple thematic present and the *e*-sbj.[3]; see also Van Windekens (1982: 217). Jasanoff (1978: 36–37) is much more explicit. On the basis of word equations between the Tocharian *e*-sbj.[3] and extra-Tocharian thematic presents, he proposes that:

“it seems entirely natural to conclude that the five class III subjunctives listed above simply continue Indo-European thematic presents” (Jasanoff 1978: 37)

As noted in 3.7, this group of verbs does correlate to a remarkable degree with simple thematic stems elsewhere in Indo-European. However, the explanation was later abandoned by Jasanoff (1998: 311 fn. 45), who rightly points out that the thematic cognates in question are mostly linked to transitivity.

Peters (2006: 334–5 fn. 16) takes a different approach, proposing that the *e*-sbj.[3] is “eine innertochar. Neuerung” from the root sbj.[1], the middle of which—according to him—would have an unwanted phonological sequence: **CəCətər*. The model for making the form more appealing was **känö₂tär* (his notation), a conglomerate form of competing subjunctive stems **känāūtär* and **känāyätär*, stems he bases on the irregular optative forms ^B*känñiyoytär* (THT107 b8), ^B*kñiyoytär* (THT289 a2). The larger strokes of this proposal are supported by Malzahn (2010: 329), who admits that there are several counterexamples to Peters’ claim that sbj.[1] middles to roots with the structure **CəC-* were undesirable, e.g., root sbj.[1] mid.3sg. *kutär* ‘will pour’ to ^B*kəw-*, *wastär* ‘will don’ to ^B*wəs-*, *piltär* ‘will listen closely’ to ^B*pəyl-*. She argues that since none of these are oppositional intransitives, they could have avoided the restructuring. However, the irregular optatives ^B*känñiyoytär* and ^B*kñiyoytär*, which both occur in late texts, have been explained much more convincingly as innovations, recharacterised with an optative suffix *-oy-* (Hackstein

1995: 237 fn. 93; Peyrot 2008: 149). They thus have no probative value. Secondly, there is no actual evidence, inside or outside Tocharian, that **ǵenh₁-* itself took part in inchoative-causative alternation expressed only by voice. It is rather expressed by stem alternation: transitive reduplicated present Latin *gignō* ‘produce, beget’, intransitive **ie/o*-present Vedic 3sg. *jáyate* ‘is born’, Old Irish 3sg. *gainethar* ‘who is born’; see also the criticism by Pinault (2012c: 262).²³⁵

There are indications that the alternation of simple thematic and **ie/o*-presents is a pattern in some of the CIE languages; see Table 3.8. This pattern correlates quite well with the Tocharian verbs with the *e*-subj.[3], which has led Ringe (1987: 117; 1996: 56–57), followed by Seržant (2011: 528–9; 2014: 5–8), to propose the following phonological solution. He takes the *e*-prs.[3] (suffix ^B*-e-*, ^A*-a-*) and the *o*-prs.[4] (suffix ^B*-o-*, ^A*-a-*), not the *e*-subj.[3], as the original locus of the suffix PT **-e-*, suggesting that they were originally **ie/o*-derivatives to **eh₁-*statives with the suffix in the elsewhere unattested zero grade **-h₁-*. Unfortunately, this proposal does not explain the comparative evidence. The Vedic verbs with *ya*-presents show no sign of the stative suffix, and there is no evidence of the stative suffix with any of the verbs in question. This is hardly surprising taking the semantics of these verbs into account. Later, Ringe (2000: 137 fn. 39) has retracted this theory.

Pinault (2012c)²³⁶ makes a similar suggestion, which works better in some respects. He proposes that *e*-subj.[3] is based on the intransitive **ie/o*-formations directly. This would explain the intransitive use, and it embeds the category within the Proto-Indo-European verb in a coherent way. He (2012c: 262–3) explains the Proto-Tocharian stem vowel **-e-* as a contraction of a variant of the suffix with a prop-vowel **-i-* (**ie/o* → **iē/o-*), which arose in the roots where a zero grade was unwanted, i.e. in the roots with final *-k-* and *-s-*. The roots in final nasal **təm-* and **nəm-* kept the simple suffix **ie/o-*, explaining stems ^B*cme-*, ^A*cma-* and ^B*ñme-*. Among the verbs with *e*-subj.[3], however, there are several that contradict the proposed distribution of the Lindeman variant: **kən-* ‘be born’, **wəl-* ‘die’ and, if it is to be included here, **rəw-* ‘open’, all end in consonants that could vocalise in a zero-grade form. Pinault (2012c: 261) limits the cross-consonantal palatalisation to **m*, but we would still expect the final consonant of the root to be palatalised. With Adams’ reinterpretation of ^B*hyuketrä* as an *e*-subj.[3] (2012), we must consider this an additional counterexample. Ultimately, Pinault’s hypothesis requires too many phonological assumptions to be convincing. He has to assume allophonic **iē/o-*

²³⁵ It is also possible that a transitive **e/o*-present is reconstructible for this root; see 3.7.2.

²³⁶ Also Pinault (2008: 578) with less detail.

- next to **-ġe/o-* in order to get the necessary contraction result, and in the data set, there are almost as many counterexamples as examples in favour.

A different interpretation of the *e*-sbj.[3] is that of Rasmussen (2002: 381-2), who suggests the long-vowel subjunctive (= thematic subjunctive **-e-e-/o-o-*) as the origin.²³⁷ According to him, it goes back to root aorist subjunctives, evidence of which supposedly can be found in the Tocharian A prt.[o].

“The surviving picture must reflect an old line of derivation: root aorist in 3sg **-t* → root aorist subjunctive in **-e-t(i)*, later thematic present in **-e-ti* → thematic subjunctive in **-ē-t(i)*” (Rasmussen 2002: 282).

He (2002: 376) argues that the palatalisation could have been lost in analogy to *e*-prs.[3] (suffix ^B-*e-*, ^A-*a-*) and *o*-prs.[4] (suffix ^B-*o-*, ^A-*a-*), which he ascribes partly to **ġe/o-*-presents of statives, i.e. **-eh₁-ġe/o-*, similar to the ones proposed by Ringe (1987: 117), and partly to middle thematic stems with stable **o*-formant, as set forward by Jasanoff (1978). In the resulting paradigm, the non-palatalising PT **e*-variant would be more prevalent than its palatalising counterpart and could thus outmanoeuvre it. If one accepts the Rasmussen’s proposed origin of *e*-prs.[3] and *o*-prs.[4], such an analogy would be acceptable, although positing two discrete origins for *e*-prs.[3] and *e*-sbj.[3] is unattractive. In any case, the proposal faces much more important obstacles. Firstly, there is the fact that the more complex thematic suffix **-ske/o-* shows no sign of a long-vowel subjunctive in Tocharian. What happened to these forms? Secondly, the problem with deriving the *e*-sbj.[3] from the simple thematic hypothesis persists; the cognate forms in Indo-European are primarily transitive, while the *e*-sbj.[3] is intransitive.

Theories with athematic sources

So far, every attempt treated here has started from a thematic source with the advantage that the **o*-formant of the suffix provides the stem vowel needed (PT non-palatalising **e*) and the disadvantage of having to explain away the **e*-formant (PT palatalising **ə*). Other scholars, however, have taken the non-alternating stem at face value. As mentioned above, Jasanoff (2003: 201–6) embeds the *e*-sbj.[3] into his hypothesis of the presigmatic aorist. He argues that the asigmatic middle of this formation, 3sg. **nokō*, 3pl. **nekro*, was levelled to **noke*, 3pl. *nokro* in the aorist (→

²³⁷ See also the footnotes attributed to M. Kümmel in the LIV (2001: 164 fn. 15; 453 fn. 4; 624 fn.4).

Tocharian A prt.[o]) and in the process, the weak grade variant **nek-* was relegated to the subjunctive. In the stem with **o*-vowel of the root, middle preterite endings were added, recreating the precursor of the Tocharian A prt.[o]; see 4.3.5 below. In the subjunctive stem with *e*-grade, the 3sg. was renewed with a productive Tocharian middle ending, stacked on top of the original ending: **nek-or* → pre-PT **nek-o-tor*.²³⁸ From this form, the stem was reanalysed as **neko-* and a full paradigm could be created.

In his recent article on the presigmatic aorist theory, Jasanoff (2019b: 62–4) updates this proposal somewhat, reconstructing the nondental middle ending as **-e*, rather than **-o*, with reference to Villanueva Svensson (2006: 297). This is based on some Old Church Slavonic forms in *-e*, which have cognates in Sanskrit passive aorists, e.g., OCS *pade* ‘fell’, Ved. *pādi* (with which the Tocharian A prt.[o] is connected according to Jasanoff). It is worth noting, that OCS *-e* is the regular thematic aorist 3sg. ending and, in any case, does not correspond to the Vedic ending *-i*; I do not see why the Slavic ending should be more original. From a Tocharian perspective, this update forces Jasanoff to assume an additional replacement of the middle ending which seems unnecessarily complicated: **nok-e* → **nok-o(r)* → **nek-or* → pre-PT **nak-e-tar*.

A similar account to Jasanoff’s, although based on a different model of the verb, has been proposed by Kortlandt, who states:

“The e-subjunctive, like the e-present, appears to be ultimately based on the stative 3rd sg. form in **-o*, which was extended by the regular middle endings.” (Kortlandt 1994: 63)

Kortlandt uses the term “stative” as a shorthand for the collection of endings found in various Indo-European languages within the mediopassive realm that show 3sg. **-o* instead of **-to* and other personal endings seemingly related closer to the perfect endings than the eventive endings. Kortlandt (1983: 312) and Beekes (2011: 268–9) attribute intransitive meaning to this middle ending set, juxtaposed with the originally transitive, self-benefactive middle endings, e.g., 3sg. **-to*.

The so-called stative is found in Indo-Iranian where it functions as a 3rd person

²³⁸ Jasanoff (2019b: 63–4) reconstructs the ending in the intermediary form **nek-or* with the primary middle ending, from which **-o-* was extracted as a “quasi-thematic” suffix, i.e. **-o-r* → **-o-tor*. To me, this development seems significantly less trivial than the original proposal, in which the reanalysis of the stem-forming **-o-* happened after the productive ending had been added: **-o* → **-otor* → suffix **-o-*.

stative or intransitive middle present. The endings in Proto-Indo-Iranian are 3sg. **-a*, 3pl. **-ra(m)*. Importantly, Anatolian also attests a non-dental ending 3sg. **-o* in the Hittite middle conjugation in 3sg. *-a(ri)*, contrasting with the other Hittite middle conjugation in 3sg. *-tta(ri)*. No functional difference in Hittite can be ascertained, but the non-dental set is less common than the dental one (Kloekhorst 2008: 150). There are two types of accent patterns attested: an zero-grade oxytone **CC-ó* and a full-grade barytone **CéC-o* (Watkins 1969: 94).

Although they disagree on the role the original stem played in the Proto-Indo-European, Kortlandt and Jasanoff thus both derive the Tocharian *e*-subj.[3] from a stem in **CéC-o*, ancestral to the Indo-Iranian stative and the Hittite middle ending *-a(ri)*, using the same morphological mechanism. They also agree that the function was essentially intransitive rather than a true stative, distinct from the middle, as other scholars have argued for; see Rix (1977), Kümmel (1996). The derivation of the *e*-subj.[3] from **C(e)C-o* is also followed by Peyrot (2013a: 591–2). If the third singular was the original locus of the paradigm, he argues, it is understandable that the suffix vocalism is generalised and unaffected by ablaut.

Evaluation

Both functionally and formally, the “stative” explanation of the *e*-subj.[3] is the most attractive. Only three morphological changes are needed to explain the Tocharian paradigm:

1. the remarking of the 3sg. with the (pre-)Proto-Tocharian middle ending
2. the reanalysis of **-o-* > PT **-e-* as a suffix
3. the creation a new paradigm on the basis of the 3sg.

The two accent patterns in Indo-Iranian, **CC-ó* and **CéC-o*, give us the possibility to explain the presence and absence of palatalisation in Tocharian directly from the proto-language. However, with the grammaticalisation of palatalisation in Tocharian and the lack of any stem cognates between Indo-Iranian and Tocharian, this would be completely unprovable, and it would thus be more economical to assume one proto-formation for all Tocharian *e*-subj.[3] stems. Given the palatalisation in certain forms, the barytone variant **CéC-o* is preferable. Against this position, Pinault (2012c: 261) argues that a large-scale depalatalisation is unlikely; for instance, we would expect the verb ^B*pək-*, ^A*päk-* to exhibit a subjunctive stem *†pike-*; cf. ^B*piñkte* ‘fifth’ < PIE **penkʷ-tó-*. However, since a stem with **i* in the root would be completely isolated in the paradigm, it is easy to imagine how it was eliminated. It is also

conceivable that *e*-subj.[3] forms were depalatalised in analogy with *e*-prs.[3] forms or to the root prt.[o] once the two became paradigmatically linked.

One disadvantage of deriving the *e*-subj.[3] from the Indo-European stative is the lack of cognate stems elsewhere in Indo-European. However, I agree with the methodological considerations by Peyrot on this point:

“It is my firm belief that comparative morphology should compare morphological types rather than set up etymologies, certainly with a language with so many rigid patterns as Tocharian. Nevertheless, a morphological explanation additionally supported by word equations is clearly preferable to one based on morphological types only.” (Peyrot 2013a: 405)

Keeping this in mind, there is one possible stem cognate between a Tocharian *e*-subj.[3] and a “stative” cognate elsewhere. Hittite *lukk*-^{ttu(r)} ‘to dawn, light up’ is attested from OS and onward, exclusively in the middle voice until NH (Hoffner & Güterbock 1989: 75). At face value, this verb does not seem to support the stative hypothesis, since prt.mid.3sg. *lukta*²³⁹ should go back to **luk-tó* (Oettinger 1979: 273–5; Kümmel 1996; LIV 2001: 418). There is, however, a variant *lukkatta*²⁴⁰ which, according to Oettinger (1979: 275), cannot be a mere orthographic variant of *lukta*. He suggests that it is an early neologism (OH or earlier), created in opposition to the “thematischen Aktiv [lukezzi] ‘zündet an’”. With Kloekhorst (2008: 531–2), the latter stem is better interpreted as a derivative *īe/a*-stem, so there is no basis for such an innovation. This opens the possibility that *lukkatta* goes back to a non-dental **l(e)uk-o* with the addition of the dental middle ending **-to* as discussed by Kloekhorst (2008: 531): “cf. *argatta* beside *arga*, *ḫalziḫatta* beside *ḫalziḫa*”. Such a scenario is proposed by Adams (2012: 32–5), who reconstructs **leuk-o-tor*, a form identical to the expected preform of ^B*lyuketär*. Whether the dental ending was added independently in the Tocharian and Hittite forms is uncertain, but it is very attractive to take Hitt. *lukkatta* as evidence for a PIE middle 3sg. **léuko*.

The stative explanation can also account for at least a part of the presents of class [3] (suffix ^B*-e*-, ^A*-a*-), likely accompanied by actual old statives in **-eh₁-* and possibly other formations (Rasmussen 1988: 169–70). The diachronic explanation for the present is more complex as the relationship and origin of the *o*-present of class [4]

²³⁹ KBo 17.13 “obv.?” 1: *lu-uk-ta* OH/OS (Hoffner & Güterbock 1989: 75).

²⁴⁰ KBo 17.1 ii 30, iv 7: *lu-uk-kat-ta* OH/OS, KBo 17.3 iv 21 *lu-ug-ga-at-ta* OH/OS (Hoffner & Güterbock 1989: 75).

(suffix ^B-o-, ^A-a-) should be taken into account; see the presentation and discussion of the possible origins of the *e*-prs.[3] in Malzahn (2010: 393–402).

4.3. The root preterite class [o]

So far, two aberrant features of the verbs of the type ^B*pək*-, ^A*päk*- ‘cook, ripen’, ^B*tsək*-, ^A*tsäk*- ‘burn’, ^B*nək*-, ^A*näk*- ‘perish; destroy’, etc., have been investigated: the use of voice in the present stem to mark the semantic alternation between inchoativity and causativity (3.7), and the formation of an *e*-subjunctive of class [3] with inchoative meaning (4.2). There is a third feature that is specific to this group of verbs: the formation of an inchoative root preterite of class [o] in Tocharian A: e.g., 3sg. *nakät* ‘perished’, *pakät* ‘cooked’.

This stem class is exclusively found in Tocharian A, but Tocharian B shows evidence of a cognate stem formation: the *s*-preterite middle with *e*-grade in the root, e.g., 3sg. ^B*neksate* ‘perished’. In the start of this section, the synchronic facts of both stem classes will be presented (4.3.1–4.3.2). Tocharian B provides important evidence from the preterite participle, where the semantic alternation is expressed with a difference in stem formation; the relevant forms are presented and discussed in 4.3.4. Before that, in 4.3.3, I will present the evidence for inchoative-causative alternations and show the differences in strategies between Tocharian A and Tocharian B in how the semantic alternation is expressed. When the synchronic facts have been established, I move on to the question of the origin of the root prt.[o].

4.3.1. The Tocharian A preterite of class [o]

There is some disagreement in scholarship on which verb forms actually belong to the Tocharian A prt.[o], so this section will start with a discussion of the possible members. Five assured stems are found, attested only in the 3rd person and only in the middle voice: 3sg. *tamät*, 3pl. *tamänt* ‘was/were born’, 3sg. *nakät*, 3pl. *nakänt* ‘perished, disappeared, was gone’, 3sg.-obj.3sg. *pakt-äm* ‘cooked (itr.)’, *lyökät*, 3pl. *lyökänt* ‘lit up (itr.)’, *tsakät* ‘burned (itr.)’. They all have intransitive meaning and are often used in an impersonal manner with the experiencer as an object clitic (ex. 59). It is interesting to note that prt.[o] forms often are attested together. This could indicate that they belong to a specific—possible archaic—register (ex. 60). They show non-palatalising *a*-grade in the root, corresponding to Tocharian B *e*-grade with the exception of *lyökät*, 3pl. *lyökänt* which have palatalisation. See Table 4.3 (p. 183) for an overview. More examples are presented in 4.3.3 do demonstrate the functional

opposition with preterites with causative meaning.

59 TA A11a5-6

*nakt-ām*_{prt.mid.3sg.-obj.3sg.} *kārparām* : *spārkā-ṃ vibhiṣane spārkā-ṃ k(ā^{a6}kmārtu)ne*²⁴¹
*nakāt*_{prt.mid.3sg.} *śla lāṅk ri* :

“Good dignity **disappeared for him**. Vibhīṣana vanished for him, rulership vanished for him. He **perished** together with the city Laṅkā.”

60 TA A8gb1

*sām ayot rī puk tsakāt*_{prt.mid.3sg.} *nakä(t)*_{prt.mid.3sg.}

“This city Ayodhyā **burned** down completely and **was gone**”²⁴²

There are two verbs which are often included in discussions of prt.[o]. The first is ^A*wākā*- ‘split (itr.), bloom’ to which a supposed 3sg. form is attested under completely fragmentary circumstances:

61 TA A455 a5

/// *wākä[t]* • ///

The final akṣara is partly broken. Hackstein (1995: 131–2) and Malzahn (2010: 863–4) both prefer the reading <ṭ> to <ṣ>, while Peyrot (2013a: 813 fn 792) prefers <ṣ> on structural grounds, interpreting the form as a s-prt.[3].act.3sg. *wākä[s]*, to which also a 3pl. is attested: ^A*wākār*. However, palaeographically the reading <ṭ> does seem more likely as <ṣ> is more angular in its outer lines in this manuscript.²⁴³ Semantically, ^A*wākā*- ‘split; bloom’ fits very well with the others, having inchoative change of state semantics in the intransitive stem, but the root vocalism and the stem pattern are aberrant. The verb shows evidence of an intransitive base verb with an o-prs.[4], e.g., TB prs.3pl. *wokontär*, next to an s-transitive with a middle s-prs.[8] in both languages; cf. Malzahn (2010: 862–4). In light of this stem pattern, *wākä[t]* could be a root sbj.[1].act.2sg. of the type *nakāt*, identical in form to the prt.[o].mid.3sg. The root subjunctive is being structurally replaced with the *ñ*-sbj.[7] in Tocharian A, so although we do find a *ñ*-sbj.[7] to this verb, 1sg. *wākñam*, 3sg. *wākñāṣ*, we might be dealing with the more archaic stem; see Hilmarsson (1991a: 72–3) for the correlation

²⁴¹ Restoration by Sieg (1944: 14 fn. 10) for *k-^{a6}- -ne*. Sieg’s translation: “verloren ging ihm die Würde. ^{a6}Es entwand ihm Vibhīṣaṇa, es entwand ihm die Herrschaft [und] er ging mit der Stadt Laṅkā zugrunde.”

²⁴² See Hackstein (1995: 86): “diese Stadt Ayodhyā verbrannte ganz (und) ging zugrunde”.

²⁴³ Compare <ṭa> in b3 and <ṭs> in b5 of the same manuscript (A455).

between the Tocharian B root *sbj*.^[1] and the Tocharian A *ñ-sbj*.^[7].

The other forms that are usually attributed to *prt*.^[o] are *prt*.*mid*.*1sg*. *yāmwe*, *2sg*. *yāmte* to the verb ^A*yām*- ‘do’. This verb is different from the others on practically all parameters. There is no alternation in valency; it is always transitive and the meaning of the middle seems rather to be reflexive. The stem pattern in both languages is completely aberrant and in fact unique in Tocharian morphology. In Tocharian A, the present is supplemented by a stem *ypa-/ya-* in some forms. As Jasanoff (2019b: 45 fn. 64) argues, it is best to separate *yāmwe*, *yāmte* from the *prt*.^[o] class. Since no 3rd person forms are attested to the root preterite middle stem of ^A*yām*-, and only 3rd person forms are attested to the *prt*.^[o] proper, we have no way to make sure that *yāmwe*, *yāmte*, belong to the same class as and *nakät*, *tamät*, etc.

The ending in the *1sg*. *yām-we* is otherwise only found in a few *ā*-imperfects. In addition to this, the root vocalism does not point to **o*, and the attested forms are not intransitive. A sigmatic middle form *yāmtsāt* is found next to the asigmatic one, and the two seem to be used interchangeably, both found in phrasal constructions with *ése* ‘aware’:

62 TA A212 b1
 : *māmtne* *ṽpādhyāy āklāṣlye* *ése yalye tām nāṣ yas* *ése yāmpe*_{prt.mid.1sg.} :
 “in the way that students can be made aware by the teacher, **I have made you aware**”²⁴⁴

63 TA A153 b3
 /// *wram pättāñkāt kṣṣi* *ése yāmtsāt*_{prt.mid.3sg.}
 “the Buddha teacher **made himself aware** of the matter”

Whatever the origin of the asigmatic preterite middle forms of ^A*yām*-, they cannot inform the diachronic analysis of the *prt*.^[o] and will therefore not be included in the rest of this chapter.²⁴⁵

²⁴⁴ See Schmidt (1974: 465): “wie vom Lehrer die Schüler zu unterrichten [sind], so habe ich euch unterrichtet”.

²⁴⁵ The possible etymological connection to ^B*yānm*-, ^A*yom*- ‘achieve’ complicates the matter further. It is likely that the Tocharian verbs can be connected to PIE **h₁em*- ‘take’ (Jasanoff 1978: 32; Peyrot 2013a: 454–5). Peyrot argues that the stems of the two verbs that look archaic complement each other in a pattern which is recognisable from the point of view of Proto-Indo-European: a nasal present and a root preterit. In this case, the asigmatic middle stem could possibly be an archaism continuing the root stem.

4.3.2. The Tocharian B *e*-grade *s*-preterite middle

Most Tocharian A preterites of class [o] correspond to *s*-preterite middle form with *e*-grade in the root in Tocharian B; see Table 4.3. In Tocharian B, there is only one *e*-grade middle *s*-preterite attested in a verb which forms no prt.[o] in Tocharian A: 3pl. ^B*kessante* ‘were extinguished’ to ^B*kəs-* ‘be extinguished; extinguish’. Forms outside the 3rd person are attested, mainly to ^B*təm-* ‘be born’, where we find the 1sg. and 1pl.²⁴⁶ The only other example is ^B*tseksamai* ‘I burned’. Semantically, it is quite understandable that the usefulness of 1st and 2nd person forms would be limited (and lacking, in the case of Tocharian A) in these verbs, especially in the preterite.

It is generally agreed that the *s*-preterite middle suffix *-sa-* has been analogically introduced in Tocharian B on the pattern of the regular *s*-preterite, e.g., prt.act.3sg. ^B*auntsa* ‘hit’, mid.3sg. ^B*auntsate* ‘began’ (Ringe 1990: 214; Jasanoff 2003: 180; 2019b: 63; Malzahn 2010: 112; Peyrot 2013a: 591). We must thus reconstruct the prt.[o] stem with no suffix and **e*-grade in the root to Proto-Tocharian, e.g., 3sg. **nekte* ‘perished; disappeared’, **temte* ‘was born’.

In the case of 3sg. ^B*lauksāte* and ^A*lyokāt* ‘brightened’, the two languages disagree with regard to palatalisation. ^B*lauksāte* is found in an archaic manuscript IOLToch285, which also explains its medial *-ā-* as archaic spelling rather than true medial accentuation (Adams 2013: 603). Since there is no other evidence for palatalisation in the prt.[o], the easiest solution is to take the palatalised variants as secondary as they can be analogical to the *s*-prt.[3] forms, e.g., prt.act.3sg. ^A*lyokäs*, ^B*lyauksa*.

There is one verb that forms an *e*-subj.[3] (suffix ^B*-e-*, ^A*-a-*), but does not show the expected morphology in the preterite: ^B*nām-*, ^A*nām-*. In Tocharian B, the verb does form an *s*-preterite, e.g., act.3pl.-obj.3sg.all. *nemar-neś* (THT107 b4), but the middle does not have *e*-grade: act.3sg.-obj.1sg. *namtsate-ñ* (PKAS17I b4). In Tocharian A, no finite preterite forms are attested. Both languages show participles that are irregularly palatalised; see below 4.3.4.

²⁴⁶ The identification of a 2sg. form *temtsāt(ai)* by Schmidt (2007: 329) is quite uncertain as the bottom part of the akṣara is damaged. Additionally, the form would have *ā* instead of expected *a* in the middle syllable. See instead the transliteration by T. Tamai on TITUS (THT1540 sc line 13, CEToM THT1540.c a3): *///kso ro ts·e mṛa·e - ///*.

Table 4.3: Attested forms of the TB middle s-prt.[3] and the TA root prt.[o]

		TB middle s-prt.[3]	TA root prt.[o]
^B <i>təm-</i> / ^A <i>täm-</i>	‘be born’	sg. <i>temtsamai</i> , ^α <i>temtsate</i> , 1pl. <i>temtsamte</i> , 3pl. <i>temtsante</i>	3sg. <i>tamät</i> , 3pl. <i>tamänt</i>
^B <i>nək-</i> / ^A <i>näk-</i>	‘perish, disappear’	3sg. <i>neksate</i> , 3pl. <i>neksante</i>	3sg. <i>nakät</i> , <i>nakänt</i>
^B <i>ləwk-</i> / ^A <i>läwk-</i>	‘light up’	3sg. <i>lauksäte</i> , ^β 3pl. <i>lyuksamnte</i>	3sg. <i>lyokät</i> , 3pl. <i>lyokänt</i>
^B <i>tsək-</i> / ^A <i>tsäk-</i>	‘burn’	1sg. <i>tseksamai</i>	3sg. <i>tsakät</i>
^B <i>pək-</i> / ^A <i>päk-</i>	‘ripen; cook’	—	3sg.-obj. 3sg. <i>pakt-äm</i>
^B <i>kəs-</i> / ^A <i>käs-</i>	‘be extinguished’	3pl. <i>kessante</i>	—

^αWith regular *t*-epenthesis between *m* and *s*.
^βWith archaic spelling (IOLToch285 b1).

4.3.3. Oppositional causative preterites: s-prt.[3], caus. prt.[2] and [4]

While the formation of the inchoative preterite stem is fairly uniform, there is some variation in the stem formation of the oppositional transitive stem formations across Tocharian A and Tocharian B. Some verbs form active s-preterites of class [3], while others form preterites of class [2] and [4] which typically belong to the causative stem patterns (see Table 1.4). In this subsection, examples of the preterite stems are presented and discussed to show the various strategies of stem formation as well as to show that the semantic alternation between functionally inchoative and functionally causative is the same, regardless of the manner of stem formation.

Unlike in the subjunctive (see 4.2.1), the strategies for expressing inchoative and causative meaning are different in Tocharian A and Tocharian B. In Tocharian A, stem alternation is used, while in some Tocharian B verbs, the difference is expressed only through voice. The latter strategy is, however, innovative, since the Tocharian B s-preterite middle with *e*-grade (type ^B*neksate*) goes back to an asigmatic *e*-grade preterite, from which also the Tocharian A prt.[o] derives; see above 4.3.2. This becomes quite clear when we look at the usages of the Tocharian A root prt.[o] and the Tocharian B *e*-grade s-prt.[3] middle, as they agree exactly in meaning and often show the same oppositional causative stem.

Several verbs that form a Tocharian A prt.[o] or a Tocharian B e-grade middle s-prt.[3] have an active s-preterite attested with transitive meaning in either or both languages. We see this pattern in both languages in ^B*nək*-, ^A*nāk*- and ^B*ləwk*-, ^A*läwk*-, and in ^B*tsək*- and ^B*kəs*- without Tocharian A counterpart; see the examples below. Semantically, the preterite stems are in same oppositional relationship as the present and subjunctive stems.

^A*nāk*:- prt.[o] ‘perish; disappear’ (ex. 59, 60, ex. 67), s-prt.[3] ‘destroy; lose’²⁴⁷ (ex. 64)

64 TA A341 b7

koṭikarṇe sārthavāk ytāraṃ nākäs_{prt.act.3sg.} kāpñe śol

“Koṭikarṇa, the caravan-leader, **lost** his dear life on the road”

^B*nək*:- s-prt.[3] mid. ‘perish; disappear’ (ex. 65), s-prt.[3] act. ‘destroy’ (ex. 66)

65 TB PKAS17B b5

tumem cai ñakt(i) ompek neksante_{prt.mid.3pl.}

“Thereupon those gods **disappeared** then and there”²⁴⁸

66 TB PKAS7L a5

jāmadagniṃñe su rāme śampāsse po neks(a)_{prt.act.3sg.} kṣatriy(em) ///

“this conceited Rama, the son of Jamadagni, **destroyed** all the *kṣatriyas*”

^A*läwk*:- prt.[o] ‘light up (itr.)’ (ex. 67), s-prt.[3] ‘light up (tr.)’ (ex. 68)

67 TA A340 b3

lyokāt_{prt.mid.3sg.} wṣe śl-āsām nakāt_{prt.mid.3sg.} k_uli tmāk kū pākär tā(k tsopa)ts kapśño empele

“the night **brightened**; along with the seat the woman **disappeared** and instead a dog appeared, with a great body, horrifying”²⁴⁹

²⁴⁷ See Carling & Pinault (2023: 248).

²⁴⁸ A more literal translation of *ompek* would be purely local, ‘right there, just there’, which is difficult to fit into the context. See the translation by CEToM, ed. G.-J. Pinault, T. Illés & M. Peyrot, accessed 15 May 2023.

²⁴⁹ See the translation by Carling, Pinault & Winter (2009: 146–7) and Carling & Pinault (2023: 136).

68 TA A257 a7

*lyokäs*_{prt.act.3sg.} *swāñcenāsyō tatrisāk waśenyo poñcn ārkīsoṣi*

“he **illuminated** the entire world with rays and made it resound with his voice”²⁵⁰

^B*lawk*:- s-prt.[3] mid. ‘light up (itr.)’ (ex. 69), s-prt.[3] act. ‘light up (tr.)’ (ex. 70)

69 TB IOLToch285 b1

*lauksāte*_{prt.mid.3sg.} *yṣiye istä(k) ///*

“the night **brightened**. Suddenly...”

70 TB PKAS13A a4

*-ṣṣana*_{adj.-f.obl.pl.} *swāñcaintsa lyauksa*_{prt.act.3sg.} *śaiṣṣe*

“with [...] rays, he **lit up** the world”

^B*tsək*:- s-prt.[3] mid. ‘burn (itr.)’ (ex. 71), s-prt.[3] act. ‘burn (tr.)’ (ex. 72)

71 TB PKAS16.7 b7

*snai keś nrai(nta)ne nemcek tseksamai*_{prt.mid.1sg.}

“I certainly **burned** in countless hells”

72 TB Or 8212.163 a5

*ente sudä – śāno tsekār*_{prt.act.3pl.} *brahmaṇiṃ*

“when **they burned** his wife *Sudä*-,²⁵¹ the brahmin woman ...”

^B*kəs*:- TB s-prt.[3] mid. ‘be extinguished;’ (ex. 73), act. ‘extinguish’ (ex. 74)

73 TB THT421.1 b2

*/// (o)k tman-olyo kessante*_{prt.mid.3pl.} *tāw mat*²⁵² *śpālmeṃ tsārane*

“More than 80,000 **achieved nirvana** (lit. **were extinguished**) in this so excellent monastery”²⁵³

²⁵⁰ Trsl. by CEToM, ed. G. Carling, G.-J. Pinault, H. Fellner & B. Koller, accessed 25 July 2023.

²⁵¹ *sudä*- could be the beginning of a personal name (Peyrot *p.c.*).

²⁵² *mat* for *mant* ‘so, thus’ (Sieg & Siegling 1953: 280). Manuscript available on CEToM, accessed 15 May 2023.

²⁵³ See Schmidt (1974: 126): “Mehr als 80.000 erloschen in d[ies]em so vortrefflichen Kloster”.

- 74 TB THT₂₄₃ b₃
 /// (nrai)ṣṣana *kesasta*_{p_{rt}.act.2sg.} *pwāra* :
 “... you have extinguished the hellish fires”²⁵⁴

The preterite stem of ^A*käs-* is in disagreement with that of ^B*kəs-*, as it forms a reduplicated preterite of class [2] rather than an active s-preterite (ex. 75).

- 75 TA A₃₁₄ b₂
*puk ksāc kaksānt*_{p_{rt}.mid.3pl.}
 “they extinguished everything nearby”²⁵⁵

Two other verbs show evidence in both languages of transitive preterites from the stem patterns traditionally called “causative”, either class [2] or [4]: ^B*təm-*, ^A*tām-* and ^B*kən-*, ^A*kän-*. Starting with ^A*tām-*, the intransitive prt.[o] (ex. 76) is found in opposition to a rather aberrant causative preterite stem which is both reduplicated and shows the suffix -ṣā-: prt.mid.3pl. ^A*tatāmṣānt* (ex. 78). Only one other verb shows such a formation: *laläkṣāwā* (A₂₇₀ a₇) to the causative verb ^A*lāk-* ‘show’ (Malzahn 2010: 216). In Tocharian B, *təm-* does not attest any finite causative preterite, but a preterite participle matching the Tocharian A causative preterite is found: ^B*tetanmäṣṣu*; see 4.3.4. The inchoative meaning is expressed with the expected e-grade s-preterite middle (ex. 77).

- 76 TA YQ_{1.9} b₂
 /// (e)preraṃ śāk kālymentwaṃ wrasaśśi kācke *tamāt*_{p_{rt}.mid.3sg.}
 “in the air, in the ten directions, joy of the beings was born”²⁵⁶

- 77 TB THT₄ a₆
 /// sw (a)śrāddhe sruka-ntweṃ nrain=empelye *temtsate*_{p_{rt}.mid.3sg.} ///
 “He died an unbeliever (and) then in a terrible hell he was (re)born.”²⁵⁷

²⁵⁴ Restoration by Sieg & Siegling (1953: 146 fn. 1). See Schmidt (1974: 125): “... hast du die (höll)ischen Feuer zum Erlöschen gebracht”.

²⁵⁵ See Carling, Pinault & Winter (2009: 143).

²⁵⁶ Trsl. by Ji, Winter & Pinault (1998: 61).

²⁵⁷ Trsl. by CEToM, ed. H. Fellner, accessed 15 May 2023.

78 TA YQ3.3 a4

/// (*k_ule*)wāñ *sidārthem* *kāts kāmant k_ulewāñ* *tatūmṣānt-ām*_{prt.mid.3pl.-obj.3sg.}
 “women carried Siddhārtha in (their) womb, women gave birth to him”²⁵⁸

In both languages, the only preterite stem that is attested to ^B*kən-*, ^A*kän-* is a causative prt.[2], although the preterite participle ^B*kekenu* indicates that an *e*-grade *s*-preterite middle, and thus probably a Tocharian A prt.[0], existed at some point.²⁵⁹ The interpretation of the Tocharian A causative prt.[2] stem is somewhat disputed. Only one form is attested: prt.act.3sg. *kakām* (ex. 79). Ji, Winter & Pinault (1998: 29) translate the passage in an intransitive manner, but identify the form as the equivalent of ^B*kyana-*.

79 TA YQ1.2 b3

/// (*a*)jite *trāñkāṣ* *āntāne sās klyom metrak oktapuklyi kakām*_{prt.act.3sg.} · *tām*
praṣtanā^{ba}(*k*) /// *brāmnāsāṣ lyutār tāk*
 “... (A)jita says: When the noble Metrak became an eight-year old, just at that time ... he surpassed the Brahmins.”²⁶⁰

Malzahn (2010: 189, 570) advocates an intransitive reading ‘became’, while Kim (2009b: 29 fn. 36) tentatively suggests that the form could be transitive: “When the noble Metrak, eight years old, made happen (that)...”. Neither interpretation is unproblematic; we do not find the meaning ‘become’ in the intransitive paradigm of ^B*kən*, ^A*kän-*, but rather ‘come about, occur’. On the other hand, it would be syntactically peculiar for the object to occur so far behind the verb that it is lost in the lacuna, as suggested by Kim.

It is possible that an Old Uyghur parallel is attested, although the passage is extremely fragmentary (ex. 80, Geng & Klimkeit 1988: 86–7). The Old Uyghur verb *tükä-* can, besides ‘end’, also mean ‘be completed, perfected, achieved’ (Wilkens 2021: 769).

²⁵⁸ See Ji, Winter & Pinault (1998: 157).

²⁵⁹ The transitive imperative ^A*ṣkanā-ñy* (A56 b1, YQIII.7 a7) does not fit the prt.[2] formally, but may be a—circumstantial—indication of an oppositional active *s*-preterite (or *ā*-prt.[1]); see Malzahn (2010: 570), Peyrot (2013a: 731 fn. 87). The word ^B*kentsa*, ^B*keṃtsa* is attested amply in the Tocharian B material and could formally be an act.3sg. of an *s*-preterite to ^B*kən-*. However, as far as I can tell, all instances are better interpreted as perlativ singulars to ^B*keṃ* ‘earth’.

²⁶⁰ Trsl. by Ji, Winter & Pinault (1998: 29).

80 MaitrHami I 8b 26

... .. *yaši tükädi*

“... seine Lebensjahre **sind beendet.**”

If it is a parallel, the passage would be rephrased so the years of age are the subject, “his [8] years of life are completed/achieved”, but the meaning of the Old Uyghur verb fits the meaning of the Tocharian causative (TB *kyana*- ‘fulfil; achieve’, see ex. 81 and 82) better than the intransitive ‘occur, come about’. We may therefore be able to unify the various interpretations of the Tocharian A passage in this way: the meaning of the passage is “When the noble Maitreya became an eight-year-old”, but the literal translation should be “When the noble Maitreya completed/achieved eight years of age”.

The Tocharian A causative prt.[2] stem is matched by the TB causative prt.[2] *kyana*-, which clearly functions as the transitive and always exhibits the meaning ‘fulfil; achieve’ (ex. 81 and 82).

81 TB THT113 b2

/// *pontas ñis akālkānta kyānawa*_{prt.act.1sg.}

“I **fulfilled** the wishes of all”²⁶¹

82 TB THT224 a3–b1

läklentants ·rma šāp ritātai kr(u)ṭ^{b1} kärsatsi tusa krentewnants p(o) ak(e)

*sa=kyānasta*_{prt.act.2sg.}

“and if you have sought to understand the seed of the sorrows, then you **have achieved** happiness, the ultimate of the virtues”²⁶²

Besides 3pl. ^B*kyauwar(e)* ‘made pour’ to ^B*kaw*- ‘pour’, ^B*kyāna*- is the only causative prt.[2] verb that shows the palatalisation of initial *k*- to *ky*-. All other *k*-initial verbs have the regular palatalised variant *ś*-. Taken together with the non-palatalised Tocharian A form, this indicates that *y*-palatalisation in Tocharian B truly is secondary. There is a further form *kyānamar*, which looks like a subjunctive made from the preterite stem; recently, I. Itkin has presented two parallel forms from previously unedited fragments from the same manuscript.²⁶³

²⁶¹ See Schmidt (1974: 134): “Die Wünsche aller habe ich in Erfüllung gehen lassen.”.

²⁶² Trsl. by Peyrot (2013a: 380); for the translation of ‘seed’, see his footnote 517, same page.

²⁶³ At the online conference Tocharian in Progress, Leiden University, December 2020.

- 83 TB THT₄₀₁ b₄
*poyśñe akālk kyānamar*_{sbj.mid.1sg.}
 ‘I **will fulfil** (my) wish for buddhahood’²⁶⁴

Finally, two verbs do not show opposing forms. The first is ^B*pək-*, ^A*päk-* ‘ripen, cook’. The only finite preterite form attested in either language is prt.mid.3sg.-obj.3sg. ^A*pakt-äm* (A₃₄₁ a₇). Although it was originally translated as a transitive form by Sieg (1952: 40), the form has been interpreted as an intransitive since Couvreur (1954b: 260); see ex. 84.

- 84 TA A₃₄₁ a₇
*lyalypurši want wortā-ṃ kumpaṃ ṣūti śpāl pakt-äm*_{prt.mid.3sg.-obj.3sg.} *ymār tmaṃ*
kapśaṇi
 “the wind of karma threw her in the pot head-first, (and) quickly **her** body
boiled in it”

The words *ṣūti śpāl* were hesitantly interpreted as a compound ‘Kopf über’ by Sieg, Siegling & Schulze (1931: 247). In a recent suggestion, Carling & Pinault (2023: 494) revise the reading to *ṣūciśpāl* ‘needle-headed’, a calque on Skt. *sūci-mukha-*. The word refers to a type of *preta* (hungry ghost) which fits the narrative of the manuscript better than ‘head-first’ as it features several other hungry ghosts. See their translation in ex. 85.

- 85 TA A₃₄₁ a₇
*lyalypurši want wortā-ṃ kumpaṃ ṣūciśpāl pakt-äm*²⁶⁵ *ymār tmaṃ kapśaṇi*
 “The winds of deeds threw her in the pot. She, as a **needle-headed (ghost)**,
 cooked her body quickly therein.”

Carling & Pinault (2023: 494) explains the initial *ṣ-* of the form as “hyper-Sanskritization” of *sūci-* ‘needle’. It is, however, worth noting that Tocharian B has borrowed this word in its expected form with *s-*: *sucikar** ‘needle-case’ from Skt. *sūcighara-* (Adams 2013: 760). We may also note that there is no equivalent description of the woman in question in the Chinese parallel (Chavannes 1911: 251).

Even if we accept the interpretation of *ṣūciśpāl*, there is a problem with the translation of the passage from the point of view of prt.[o]: it takes *ṣūciśpāl* as the subject of *pakt-äm*, making the verb transitive. This is totally unexpected, as no other

²⁶⁴ See Schmidt (1974: 135): “... den Wunsch nach der Allwisserschaft werde ich verwirklichen”.

²⁶⁵ With a typo, *päkt-äm*, in Carling & Pinault (2023: 494).

prt.[o] forms are transitive, and in their treatment of the verb ^A*pāk-*, Carling & Pinault (2023: 275) do list the form with the other intransitive middle forms of this verb. However, with a small tweaking of the new translation, I think we are able to take *pakt-äm* as intransitive as expected. If the form *šūcišpāl* indeed means ‘needle-headed ghost’, it might be the object of the previous clause, in which case the object would be double-marked with a clitic and a full noun. Clitic doubling with right dislocation is rare in Tocharian A, but it does occur (Onishi 2022: 208–10). In this way, we may preserve *kapšaṇi* ‘body’ as the subject of *pakt-äm* (ex. 86). The meter supports the separation of *šūcišpāl* and *pakt-äm* as there is a caesura between them. Perhaps *šūcišpāl* was inserted into the narrative for metrical reasons.

86 TA A341 a7

‖ *lyalypurši want* ‖ *worta-ṃ kumpaṃ* ‖ *šūcišpāl* ‖ *pakt-äm ymār tmaṃ* ‖
kapšaṇi :

“The wind of deeds threw her, **the needle-headed (ghost)**, in the pot. Quickly,
her body boiled in it.”

In Tocharian B, no finite preterite forms are attested to *pāk-*, but the preterite participle *pepeku* strongly suggests an *e*-grade *s*-preterite. Most likely, the transitive preterite was expressed with an active *s*-preterite just as in ^B*nək-*, ^A*näk-*. For the preterite participle, see 4.3.4.

The other verb that shows no alternation is ^A*wäl-*. The *s*-preterite for ^A*wäl-* ‘die’ is remarkable, because it is the only stem in this group of verbs that is consistently active as well as intransitive.

87 TA A15 b4

*tmäṣ cam ypeyaṃ wäl wläs*_{prt.act.3sg.}

“Then in that land the king **died**”

Overall, the correspondence between the Tocharian A root prt.[o], on the one hand, and the Tocharian B *e*-grade *s*-prt.[3] middle, on the other, shows that using stem alternation to express the inchoative-causative alternation in the preterite goes back to Proto-Tocharian.

4.3.4. The preterite participle

The use of stem alternation to express inchoative-causative alternation is also found in the preterite participle in Tocharian B, where there is evidence for two different preterite participle stems in some verbs. Their use corresponds to the transitive

active and intransitive middle of the finite forms (Malzahn 2010: 236 fn. 7; Peyrot 2013b: 217–8). Both types are reduplicated, but the intransitive preterite participle has *e*-vocalism in the root $C_1eC_1eC_2\partial w$, while the transitive has zero-grade $C_1eC_1\partial C_2\partial w$. Unfortunately, this distinction would have been lost regularly in Tocharian A where weakening of the medial vowel means that the reflexes are identical: $C_1aC_1C_2u$.

On the basis of Tocharian B alone, we can be reasonably certain that this distinction in the participle is an archaic feature—at least going back to Proto-Tocharian. Since there is no difference in the finite preterite stem in Tocharian B, there is no synchronic motivation for a difference in the participle. This is underlined by other verbs that show a semantic difference between active and middle, but use only one preterite participle to express both meanings. For instance, in the preterite participle for ^B*kauta*- ‘mid. break (itr.); act. chop, cleave’ which also shows a semantic difference between active and middle, no such differentiation is made. The semantic distinction is close to that of ^B*nək*-, ^A*näk*- ‘mid. perish; act. destroy’, etc., in that the middle meaning ‘break (itr.)’ is inchoative and has no external agent, while the active meaning ‘chop, husk’ requires an external agent. The preterite participle ^B*kakautau* is used to express both meanings. In ex. 88, although the participle has passive meaning, the semantics are derived from the meaning associated with the finite active forms and requires an agent: ‘chopped, husked’. In ex. 89, the participle shows the meaning associated with the finite middle forms, namely an inchoative without an external agent: ‘broken’. This verb has a completely different stem pattern and history than the verbs with root prt.[o], but it serves to show that one preterite participle can express both the transitive and the intransitive meanings of a verb.

- 88 TB PKDAM507.37&.36 a36
 · *eñkarašana tānaṃ kalpa kakautauwa*_{prt.ptcp.f.obl.pl.}
 “he obtained *eñkara*-seeds, **chopped/husked**”

- 89 TB THT305 a6
 · *kakautau*_{prt.ptcp.m.nom.sg.} *ṣem ramt meṃṣträ*
 “he is sorrowful like a **broken** axle”

The pair ^B*neneku* ‘lost, perished (itr.)’, ^B*nenku* ‘destroyed (act./pass)’ provides the best examples. The formal distinction is also made in the abstracts, although the distinction in meaning is difficult to establish: ^B*nenekor* (IOLToch24 a3), ^B*nenkor* (THT11 b1) ‘loss, destruction, disappearance’.

90 TB THT229 b4–b5

po kle^{b5}*śaṁṇma nenku*_{prt.ptcp.m.nom.sg.} *mānte nākṣt ālyenkāts*
 “having **destroyed** all kleśas you destroy even more for the others”²⁶⁶

91 TB THT282 a6

*ślek śarsa hetubālike śaṇ palsko lalaitaṣ nenekoṣ-pā*_{prt.ptcp.m.obl.sg.-conj.}
 “Right then”²⁶⁷ Hetubālika understood that his own mind had fallen away and
been lost”²⁶⁸

^B*pepeku* also seems to be intransitive, although the examples are less clear.

92 TB THT1572 a3

*pepekwa*_{prt.ptcp.f.nom.-obl.pl.} *oko(ṇta) ///*
 “**ripened** fruits”²⁶⁹

93 TB THT409 b3

*(k_uśa)lamūlnta p(e)pekwa*_{prt.ptcp.f.nom.-obl.pl.}
 “the roots of merit [are] **ripe**”²⁷⁰

The transitive counterpart ^B*pepakṣu* which looks like a derived causative preterite participle is completely isolated within the stem pattern and has most likely been remodelled from expected **pepku*, cf. ^B*nenku* ‘destroyed’, ^B*hyelyūku* ‘lit’. A CEToM search (4 July 2023) for the sequence *-pk-* showed that all word-internal instances are either uncertain, personal names or borrowings: ^B*yapko** ‘a kind of noble’ in gen.sg. *yapkontse* (SIBToch13 3), adj.m.nom.sg. *yapkoṇe* (SIBToch11 10),²⁷¹ ^B*indrapkan* ‘?’ (THT484 a1),²⁷² *śwarāpkṣa* ‘an ingredient?’ (W13 b3),²⁷³ */// – rpkāne* ‘?’ (THT1446 a3). This could indicate that we are dealing with a phonotactic restriction. The question then is why **pepku* was not remodelled to †*pepaku*, a perfectly acceptable preterite participle to s-preterites, cf. ^B*kekamu* ‘come’, ^B*pepalyku* ‘burnt’.

²⁶⁶ Trsl. by Peyrot (2013b: 218). He suggests the meaning ‘even more’ for ^B*mānte* (cl. *mante*) which usually means ‘onwards’ to incorporate it into the phrase.

²⁶⁷ ^B*ślek*, lit. “together with, likewise, simultaneously” (Adams 2013: 680).

²⁶⁸ See Thomas (1967: 167): “zugleich wußte [erkannte] Hetubālika sein Denken herabgefallen und zugrunde gegangen [verloren-gegangen].”

²⁶⁹ ‘cooked (pass.) fruit’ is also a possibility, but ‘ripened’ seems more likely.

²⁷⁰ Trsl. by Adams (2013: 394).

²⁷¹ See Ching (2010: 316–7, 348, 438), Adams (2013: 528–9).

²⁷² See Ching (2010: 283–4).

²⁷³ See Adams (2013: 733) who suggests a restoration to an equally obscure *śwarāṣk*.

The answer can probably be found in the context of attestation of ^B*pepakšu*. The majority of attested forms are found in medical texts, i.e. in recipes for remedies of various diseases.

- 94 TB PKAS9a b5
 /// (devad)āru · śārttākru · cāvvi · niculaphal · tempa *pepakšu*_{prt.ptcp.m.nom.sg.} śā(l)ype
 /// “... deodar, boiled rice, Piper chava, fruit of Calamus rotang: with that
 cooked o(il) ...”²⁷⁴
- 95 TB THT497 b4
 sālesa kewt^{b4}ye wentsa *pepakšu*_{prt.ptcp.m.nom.sg.} kuñcītāšše śalype udāvarttāntse
 gurmantse sām̐tke
 “sesame oil **cooked** with *sāle* using cow dung is a remedy for a tumour caused
 by a disease of the bowel.”²⁷⁵

The prevalence of ^B*pepakšu* in medical texts resembles that of the present gerundive *pākšalle*, which is also highly frequent in this context:

- 96 TB W4 b2
 kuñcītāšše śalype śak traunta malkwersa *pākšalle*_{prs.ger.m.nom.sg.}
 “sesame oil, 10 trau, **is to be boiled** with milk”²⁷⁶
- 97 TB PKAS9A a4
 te *pākšälle*_{prs.ger.m.nom.sg.} śālype lipātsi
 “this **is to be cooked** so that the oil is left over”²⁷⁷

Since the two forms were frequently used side by side in these instructional contexts, it is conceivable that the preterite participle was affected by the present gerundive and remodelled.

^B*tetemu* ‘born’ is always intransitive. Since this verb does not have voice-valency alternation within the paradigm in Tocharian B, an oppositional transitive preterite participle †*tetmu* is not expected. Instead, there is a preterite participle attested to the derived causative verb: ^B*tetanmäššu* ‘generated, produced’.

²⁷⁴ Trsl. by CEToM, ed. G.-J. Pinault, M. Malzahn & M. Peyrot, accessed 15 May 2023.

²⁷⁵ See also the translation by Ching (2010: 237).

²⁷⁶ See Filliozat (1948: 80): “huile de sésame dix *trau*, à cuire avec du lait”.

²⁷⁷ Trsl. by CEToM, G.-J. Pinault, M. Malzahn & M. Peyrot, accessed 4 July 2023.

98 TB THT284 a2

*tetemoṣäts*_{prt.ptcp.m.gen.pl.} *po kest yokaiṣṣe läkle ste*

“to all those born, there is the sorrow of hunger and thirst.”

99 TB THT1556 a2

*(o)s(ta)-ṣmeñca śamaiške(ṃ) lyelyakormem orotstsai katkauñai**tetanmäṣṣu*_{prt.ptcp.m.nom.sg.}“having seen the boy, the householder generated great joy”²⁷⁸

^B*lyelyuku* is passive with an agent in the genitive or perlativ. This fits the general pattern well, since this form has zero grade in the root like ^B*nenku*. The palatalisation of the root initial consonant hints at a causative preterite, but it could quite easily be analogical to the finite preterite: Tocharian B s-prt.[3] act.3sg. *lyauksa*, mid.3pl. *lyuksamnte*.

100 TB SIB119(3) a5

·*pāñāktesa lyelyukoṣ*_{prt.ptcp.m.obl.sg.} *no śaiṣṣene ///*

“but in the world illuminated by the Buddha ...”

101 TB THT73 b3–b4

dhyananmaṣṣana swañca^{b4} *nts enenmem lyelyūkusa*_{prt.ptcp.f.nom.sg.} *sū(rya)kāmtṣi*
kerci ramt läktseci“lit up by meditation-rays from within like a shining sun-crystal palace”²⁷⁹

The distinction between the transitive s-prt.[3] and intransitive root prt.[o] of Tocharian A, while not retained in the finite stem in Tocharian B, can be inferred from the preterite participle.

A preterite participle whose initial palatalisation cannot be dismissed as analogical to a finite stem is ^B*ñeñmu*, ^A*ñañmu* ‘bent, bowed’. The formation must go back to Proto-Tocharian and implies a causative preterite of class [2] (Malzahn 2010: 232), but no finite forms of that stem are attested. In ex. 103, ^B*ñeñmu* must be transitive, since it agrees with ^B*su* ‘he’ (m.nom.sg.), not ^B*kektseñ* ‘body’ (f.obl.sg.).

²⁷⁸ There is no finite verb in the sentence. See the edition and Japanese translation by Ogiwara (2012: 141–2).

²⁷⁹ See Hackstein (1995: 124): “durch die Strahlen der Versenkung von innen her erleuchtet [scil. *kātso*] wie leuchtende Sūryakānta-Strahlen”. The form *kerci* used to be understood as a plural of ^B*kertte* ‘sword’ (Adams 2013: 211), but should rather be interpreted as a variant of *kercci* ‘palace’ (Del Tomba 2023: 318–9; Bernard 2023: 115–6).

102 TB THT248 a2

kos ñi cāmpāmñe tot weñe_u ñeñmu_{prt.ptcp.m.nom.sg} tārne

“As much as I have the ability, so much I will say, having **bowed** down the crown of the head”²⁸⁰

103 TB THT365 a3

tusa kakāccu ptye_usa su ke_ucä ñeñmu_{prt.ptcp.m.nom.sg} kektseñ yäprerne

“thus rejoicing he flew high, **bending** [his] body in the air”²⁸¹

In Tocharian A, the equivalent forms are all intransitive. This is not surprising, since all forms of this verb in Tocharian A are intransitive, even though they are formally active and show the morphological features of a causative; see Hackstein (1995: 68–9). In ex. 104, ^Añāñmusām (f.obl.sg.) agrees with ^Akapsiño (f.inst.sg.). Perhaps it was originally used as a passive in these types of phrases, i.e. “with bent body” and interpreted as intransitive subsequently.

104 TA YQ2.14 a8

/// kākkeyo kātkmām nām̐tsu ñāñmusām_{prt.ptcp.f.obl.sg} kapsiño śl-āñcālyi

“with happiness, joyful, with **bowed** body [and] hands put together”²⁸²

Peyrot (2013a: 765 fn. 370) suggests that ^Ananmū is an analogical replacement of ^Añāñmu. That might be the case, although it is also possible that it continues the original intransitive participle of the *CeCeCu-type, corresponding to an unattested TB †nenemu.

105 TA A217 b3

we sām ptāññāktac nanmū_{prt.ptcp.m.nom.sg} śl-āñcālyi

“he spoke to Buddha, **bowing** and with hands put together”

A third preterite participle ^Anmo attests yet another preterite stem, namely an *ā*-prt.[1] **nāmā*-. An accompanying *ā*-subj.[5] ^Anmā- is found in A213 a1. These stems are intransitive and obviously etymologically closely linked with ^Bnām-, ^Anām-, but constitute their own pattern and must formally belong to a verb of their own (Peyrot 2013a: 764 fn. 366, 367; Peyrot 2013b: 245–6).

²⁸⁰ See the translation by Peyrot (2013a: 709).

²⁸¹ Trsl. by Adams (2013: 357).

²⁸² See Ji, Winter & Pinault (1998: 134–5).

106 TA A213 a1
sne nmālune_{vn}. kapśiñño ā ///
 “without **bending** by the body ...”

Along with other aberrant features, the preterite participles to ^B*nəm-*, ^A*näm-* indicate that this verb is either in the transition away from the stem pattern characterised by an *e*-subj.[3] and a root prt.[o] or in the process of being analogically incorporated into it. From a diachronic perspective, I prefer the first option, since the Proto-Indo-European root behaves in a very similar way to other members of the group and since there are no other indications that the *e*-subj.[3] – root prt.[o] pattern was productive within and after Proto-Tocharian.

The evidence from the Tocharian B preterite participle further confirms that the use of voice alternation to express semantic difference alone was not an original feature of Tocharian B. This means that in Proto-Tocharian in both the subjunctive and the preterite, inchoative-causative alternation was expressed with stem alternation; only in the present was voice the only distinctive feature. As noted in 4.3.2, this is not a novel observation (Ringe 1990: 214; Jasanoff 2003: 180; 2019b: 63; Malzahn 2010: 112; Peyrot 2013a: 591), but it is an important starting point for the discussion of the origin of the root prt.[o]. This will be the topic of the next subsection.

4.3.5. The origin of prt.[o]

All the synchronic evidence compiled about the Tocharian A prt.[o] and the Tocharian B *e*-grade s-prt.[3] until now shows that Tocharian A preserves the more archaic state. Reconstructing the formation into Proto-Tocharian, a relative clear image of a Proto-Tocharian recessive, archaic formation appears: the 3sg. form, ^A*nakät*, ^B*neksate*, would be PT **nekte* ‘perished’ which in turn suggests a PIE preform **nok-to*. This would have alternated with a functionally causative s-preterite 3sg. **n’eksa*. With regard to the origin of the prt.[o], one issue is whether **nekte* and **n’eksa* originally reflected separate stems or whether they belong to the same paradigm, and of course, which stem(s) that might be. This is the question at hand in this section. I will discuss the various theories about the predecessor of **nekte*, before giving my own evaluation and hypothesis below.

Because of its archaic appearance, most scholars assume that the prt.[o] goes back to a Proto-Indo-European formation, but there is no agreement as to which. The issue of the origin of prt.[o] is reminiscent of that of the s-prt.[3]; see 2.2. Because of the mergers in the ablauting vowels and grammaticalisation of palatalisation, there

is almost no limit of options for explaining the various vowel grades in Tocharian. The presence and absence of palatalisation can be taken as original or analogical depending on what one wants to prove. While we should take the evidence for ablaut into account in the diachronic discussion, the most important factors when it comes to the origin of prt.[o] are therefore function and semantics, the plausibility of the analogies proposed, and possible cognate stems in Indo-European.

The root aorist or s-aorist

Krause & Thomas (1960: 247) derive the prt.[o] from root aorist middles that ended up in the blend of *s*-aorist and perfect forms from which they derive the Tocharian *s*-preterite; see 2.2.1. They do not give an account of how the two would have become mixed up in the prehistory of Tocharian in these verbs in particular. An even more serious problem is the root vocalism. A middle root aorist in either full-grade or zero-grade would not give the attested result: **nek-to* > TA †ñkät, **nk-to* > TA †nkät or even †ankät (Van Windekens 1982: 162–3; Adams 1988: 83).²⁸³

Ringe (1990: 214–215) also traces prt.[o] back to a middle root aorist and attempts to fix this phonological problem. He argues that a similar pattern is found in Greek, namely that intransitive middle root aorists are found opposite transitive active *s*-aorists is a pattern also found in Greek, e.g., itr. ἔβη ‘went’ ~ tr. ἔβησε ‘brought’. He addresses the problem of root vocalism by positing an analogy from the active *s*-preterite forms:

“After palatalisation had become phonemic in Proto-Tocharian, there is no reason why the root-vowel **e* of the active (which reflects PIE **ē*) could not have spread to the mediopassive without bringing its initial palatalisation with it.” (Ringe 1990: 215)

A very similar analogy is posited by Kortlandt (1994: 63), who argues that the Tocharian *s*-preterit in its entirety can be explained from the Proto-Indo-European sigmatic aorist with loss of the suffix **-s-* in certain forms. He extends this to the prt.[o], arguing it is simply the middle *s*-aorist with the ablaut grade introduced from the active with secondary redistribution of palatalisation. The fact that Ringe and Kortlandt have to assume that ablaut levelling took place exactly in the verbs with the largest semantic gap between active and middle is a major problem. Neither

²⁸³ Both scholars are addressing the proposal by Watkins (1962: 72-) that prt.[o] goes back to the Proto-Indo-European verbal adjective in **-to-*, but the phonological problem is the same.

scholar motivates why it took place here and not in, say, ^B*prək-*, ^A*präk-* ‘ask’ where palatalisation would be neutralised anyway and the meanings are much closer; see ex. 107 for the active and ex. 108 for the middle.

107 TA A340 a4

*mättak nāṣ kaśśi yasāṣ tāṣ **praksam***_{prs.act.1sg.}

“I am hungry myself, I **request** this from you (pl.)”²⁸⁴

108 TA A432 a2

*śomiṇ **pürkmār-ci***_{sbj.mid.1sg.-obj.2sg.} *māmṭne wram tāṣ tāmne peṃ mar nṣac smale*

“Girl, I **ask** you, how the matter is, so say it! Don’t [tell] lie[s] to me!”²⁸⁵

The presigmatic aorist

Jasanoff (1998: 310–1; 2003: 179–80, 198–9) takes a totally different approach from the ones above. For him, the fact that the sigmatic preterit active in Tocharian A is paired with the prt.[o] in the middle can be taken as evidence that the middle of the presigmatic aorist was in fact asigmatic, at least in roots with inchoative-causative alternation. This asigmatic middle corresponds, in Jasanoff’s view, to the Hittite *hi*-conjugation middle. Jasanoff (1998: 310–1; 2003: 179–80) suggests that the prt.[o] continues the asigmatic middle of the presigmatic aorist more or less directly: PIE **nók-o* → **nók-to* > PT **nekte* > ^A*nakät*; → ^B*nek-sa-te*. The only change necessary is the sigmatisation of the middle in later Indo-European (Jasanoff 2003: 179–80). From the point of view of Tocharian, the presigmatic aorist accounts very well for the prt.[o], both formally and functionally, because it is to primarily reconstructed on the basis of Tocharian. In a comparative perspective, however, there is not a lot of evidence for this type. Jasanoff (2019b: 59–60), with reference to Villaenueva Svensson (2006) points to forms like OCS *pode* ‘fell’ and the Vedic passive aorist as continuations of the same category, but although all three formations show the reflex of PIE **o*-grade in the root, their endings all differ and the connection is by no means secure. For the Slavic formation, see above (4.2.2) and for the passive aorist, directly below.

The passive aorist

Adams (1994: 23) also argues for a reconstruction of a 3sg. preform **CoC-o* underlying the prt.[o], but he connects it with the Vedic passive aorist rather than with the

²⁸⁴ See Schmidt (1974: 376): “Ich [bin] selbst hungrig; von euch erbitte ich dieses.”

²⁸⁵ Trsl. by Peyrot (2013a: 256), his brackets. See also Schmidt (1974: 377).

Hittite *hi*-preterite middle.²⁸⁶ This is a root formation found only in the 3rd person in Vedic and Avestan showing Brugmann's law in the root syllable consistent with PIE **o*-grade and an ending *-i* in the 3sg. The term "passive aorist" is used out of convention, but the function of the formation is foremost fientive-patiente (Kümmel 1996: 17). A zero-grade 3pl. is also attested in Vedic which corresponds in meaning to the 3sg. passive aorist and shows the endings *-ran* or *-ram*.

Formally and semantically, this proposal is not unattractive. Firstly, PIE **o*-grade is found in both formations. Secondly, the function of the passive aorist also speaks in favour of a connection to prt.[o]. When the basic meaning of the verb is intransitive, so is the passive aorist; when the basic meaning is transitive, the passive aorist is used as an oppositional formation in patientive function, often next to a regular middle aorist with reflexive meaning (Kümmel 1996: 18). This fits well with the oppositional intransitive meaning in Tocharian. It is also striking that both formations seem to be limited to the 3rd person, although that might be a result of faulty Tocharian A attestation. One possible word equation can be drawn, namely between Vedic *aroci* 'has shone' and *^hlyokāt* 'brightened'. A major drawback to the hypothesis is that Adams has to assume replacement of the ending in both Tocharian A and Vedic. The Vedic ending *-i* is particularly problematic, as it has very few possible comparanda in Indo-European verbal morphology. Adams (1994: 23) suggests a backformation from the active *iṣ*-aorist found next to some passive aorists, e.g., 3sg. *abodhi*, sbj.3sg. *bódhiṣat* (RV). Since the *iṣ*-aorist was an inner-Indic innovation created on the basis of *s*-aorists to *seṭ*-roots (Narten 1964: 80, 178), while the passive aorist must go back to PIIr. (cf. OAv. aor.pass.3sg. *vāci* 'was spoken' *srāuuī* 'was heard'), such a backformation is quite impossible.

Insler (1968: 329–30) suggests a replacement of the expected middle 3sg. singular ending **-a* (< **-o*) by the 1sg. **-i* due to analogy with the perfect middle where the 1sg. and 3sg. are identical: **-ai*. A similar and more elaborate analogy is proposed by Jasanoff (2003: 207–8), who suggests that the analogy started in the *seṭ*-root PIIr. **jani-* (< **ǵenh₁-*), where all forms of the root aorist but the 3sg. would have had a root-final **-i-*. It is not clear why the expected ending **-a* would be deemed insufficient and replaced by an ending from the 1sg., only in verbs that later did not inflect outside the 3rd person, especially since this ending is not found in the 3sg.

²⁸⁶ According to Jasanoff (2003: 154–5; 2019b: 15), the formation which resulted in the Vedic passive aorist belonged to what he calls *the stative-intransitive system*. They should thus be separated from the verbs of the *nəḱ*-type which within the **h₂e*-conjugation framework belong to the realm of the presigmatic aorist.

elsewhere in the system. Thus, neither of these analogical solutions is attractive.

Another explanation of the **-i* suggests a nominal origin, namely an adjectival *i*-stem in the neuter singular **CoC-i*: Gk. τρόφις ‘well-fed’ to τρέφω ‘raise’ (Kortlandt 1981: 123, Kümmel 1996: 19). According to its proponents, this theory explains the intransitive/passive value, the limitation to the 3rd person, and the ending *-i*. Within this theory, the 3pl. is a later creation. This is aptly criticised by Jasanoff (2003: 154), who argues that the *i*-stem adjectives in question are far more marginal than made out to be by proponents, while other more appropriate deverbal nominals were available in the proto-language (such as the **to*-verbal noun). A satisfying solution to the ending *-i* of the passive aorist has yet to be found, and thus any link to the Tocharian A prt.[o] remains rather uncertain. If a new solution should present itself, showing the antiquity of the passive aorist, this proposal is worth revisiting.

The perfect

Among the theories explaining the s-prt.[3] through syncretism, the most common approach has been to attribute prt.[o] to the perfect (Van Windekens 1982: 161; Adams 1988: 83–4; Winter 1994a: 293–4). Winter proposes that the strong **o*-grade of the singular was extended to the plural on analogy with the s-aorist strong grade **ē*, for which he takes the Indo-Iranian distribution as original.²⁸⁷ This allowed **o*-grade to be reinterpreted as a weak grade which in turn allowed a reinterpretation of the forms as middle. While I think this chain of events can be improved and that the theories of syncretism depend too much on the perfect when explaining the s-preterite, the basics of this proposal, namely that the Tocharian prt.[o] continues the Proto-Indo-European perfect, are very attractive.

First of all, the root vocalism is immediately understood: PIE **o* > PT **e* > TA *a*, TB *e*. Paradigmatic levelling from the singular to the plural, eliminating the zero-grade, is a fairly trivial innovation. The palatalisation of ^A*lyokät*, ^A*lyokänt* should in this case be taken as an innovation analogical to the s-prt.[3] act.3sg. ^A*lyokäs*. It is thus possible to take the s-prt.[3] mid.3sg. ^B*lauksäte* (IOLToch285 b1) as direct evidence of the non-palatalising PT **e*-grade (like Jasanoff 2003: 180 fn. 8). Malzahn (2010: 115–6) rejects this and proposes that ^B*lauksäte* is analogical to an *a*-prt.[1] implied by the abstract noun ^B*lalaukarne*:

²⁸⁷ I.e. **ē* throughout in the active, **e* throughout in the middle (Winter 1994a: 292).

109 TB THT568 a4

(yṣi)ntse *lalaukarne*_{abst.} ///

“at the **brightening** of night”, i.e. “at dawn”²⁸⁸

As convincingly argued by Adams (2012: 25 fn. 11), this form is far too uncertain and aberrant in the stem pattern to base such an argument on. As to the 1pl. form ^B*lyuksamnte*, the palatalisation must be secondary like in ^A*lyokät*, which is easy to imagine in light of the palatalisation in the *s*-preterite active as well as the subjunctive stems, e.g., *e*-sbj.[3] 3sg. ^B*lyuketär*, ^ʔ*e*-sbj.[2] 3sg. *lyústär*. It would be tempting to posit that the original zero-grade shines through in ^B*lyuksamnte*, but the form occurs in a text classified as “classical ~ late” by Peyrot and shows the late feature 1pl. ^B*-mnte* instead of *-mte* (Peyrot 2008: 156, 234). Positing an archaic feature in a form that otherwise looks late would not be very attractive.

110 TB PKAS14B a5

*pelaikneṣṣai läktsauñaisa lyuksamnte*_{prt.mid.1pl.}

“we **were enlightened** by the light of the law”²⁸⁹

Secondly, there are direct cognates between Vedic and Tocharian. Ved. pf.act.3sg. *nanāśa* ‘has disappeared’ and ^A*nakät*, ^B*neksate* ‘perished’ could continue the same intransitive PIE perfect 3sg. **nenokē* ‘is lost’. Likewise, ^A*lyokät*, ^B*lauksāte* ‘lit up’ and Ved. pf.act.3sg. *rurōca* ‘shines, is lit up’ can be traced back to PIE **lelouke* ‘is lit up’ (Kümmel 2000: 288–9, 432).²⁹⁰

There is another argument in favour of deriving prt.[o] from an *o*-grade formation like the perfect, namely that it can provide an explanation for the association between transitivity and palatalisation found in Tocharian verbs (Winter 1980a). Kortlandt has argued that:

“[...] the root vocalism of the perfect and the sigmatic aorist merged outside the 1st sg. form, which was easily subject to analogical levelling. As a consequence, palatalisation and its absence became associated with transitive versus intransitive paradigms [...]” (Kortlandt 1994: 62)

²⁸⁸ See Sieg & Siegling (1953: 357 fn. 1).

²⁸⁹ See Hackstein (1995: 124): “wir leuchteten [auf od. „wurden erleuchtet“] durch die Leuchte des Gesetzes”.

²⁹⁰ According to Kümmel (2000: 292–3), the transitive Vedic perfect forms *papā́ca*, *pece* ‘has cooked’ are innovative.

He does not make explicit which verbs he considers to be the nucleus of this association, although it cannot be the prt.[o] from which he cuts all ties to the perfect. However, the inchoative-causative group of verbs with preterites of class [o] would be exactly the right place for such an association to emerge.

The most important formal obstacle for this hypothesis is the lack of the expected reduplication in the prt.[o]. Any theory deriving prt.[o] from the perfect must assume that the reduplication was lost in the final stem. Jasanoff (2003: 162) argues that Tocharian preserves reduplication consistently, e.g., in the preterite participle and the reduplicated preterite of class [2] in Tocharian A, and derives prt.[o] from a **h₂e*-conjugation aorist middle that was never reduplicated to begin with. It is worth noting, however, that the reduplication syllables in question have been phonologically strengthened. The reduplicated types of the preterite participle and the reduplicated preterite of class [2] do not show the expected reflexes of PIE **Ce-* (or **Ci-*) > PT **Cʼə-*, but rather a full vowel **C^(ʰ)e-* or **Ca-*; see Peyrot (2010: 80–1) and Malzahn (2010: 246–9) for discussion on the reduplication in the preterite participle. It is difficult to determine whether all reduplication syllables underwent this strengthening; if other reduplicated stems retained the weaker morpheme **Cʼə-*, it is quite possible that this was lost in the prehistory of Tocharian. I return to this matter below.

Another formal feature which must be discussed are the perfect endings. Above in 2.3.1, I followed the *communis opinio* which takes many of the Tocharian preterite active endings as the reflex of Proto-Indo-European perfect endings. The preterite of class [o], however, does not employ active endings, but is consistently middle, showing endings that descend from the Proto-Indo-European present-aorist system, e.g., 3sg. ^B-te, ^A-t < PT **-te* as if from PIE **-to-i*. The formal discrepancy in endings must be explained if prt.[o] should plausibly be derived from the perfect. Below, I will give my proposals of how to solve these obstacles with the perfect theory.

Additions to the perfect theory

As mentioned above, there are good arguments for deriving the Tocharian A preterite of class [o] (and the *e*-grade *s*-prt.[3] middle in TB) from the Proto-Indo-European perfect. Some explanation is nevertheless required for the functional and formal discrepancies between the Tocharian and Proto-Indo-European formations: 1) how prt.[o] became associated with the *s*-preterite, 2) why and how reduplication was lost, and 3) why it adopted middle endings, when it was already marked with active preterite endings (from the perfect). I think all three phenomena are linked, although the relative chronology is difficult to establish. However, the matter of the endings

probably goes the furthest back in time, and for this reason, we should begin the discussion there.

The Proto-Indo-European present-aorist middle endings and the perfect endings show a lot of formal similarities and are presumed by many scholars to be related in the deeper history of Proto-Indo-European; see a.o. Meid (1975), Oettinger (1976), Kortlandt (1983: 312), Jasanoff (2003: 30–63) for various hypotheses. Especially in the 1sg. and 2sg., the resemblance—not to say identity—is striking:

pf.1sg.	*- <i>h₂e</i>	> CLuw. -(<i>h</i>) <i>ha</i> , Ved. - <i>a</i> , Gk. - <i>α</i>
SE mid.1sg.	*- <i>h₂(e)</i>	> Hitt. - <i>ha</i> , Ved. - <i>i</i> , → Gk. - <i>μην</i>
pf.2sg.	*- <i>th₂e</i>	> Hitt. - <i>tta</i> , Ved. - <i>tha</i> , → Gk. - <i>σθ</i> <i>α</i>
SE mid.1sg.	*- <i>th₂e</i>	→ Hitt. - <i>ttat(i)</i> , Ved. - <i>thās</i>

This resemblance is also found in Tocharian, if we accept that the perfect endings are continued as preterite endings (see 2.3.1). I argued (2.3.2 and 2.3.4) that in the 1sg. and 2sg. the perfect endings were stacked on top of the inherited secondary endings:

pf.1sg.	*- <i>h₂e</i>	> pre-PT *- <i>a</i>	→ prt.act.1sg. *- <i>(a)w-a</i>
pf.2sg.	*- <i>th₂e</i>	> pre-PT *- <i>ta</i>	→ prt.act.2sg. *- <i>(a)s-ta</i>

In the middle, the endings likewise seem to reflect the Proto-Indo-European endings, although both have received the preterite middle marker *-*i* and an *-*m*- has been introduced into the 1sg. in Tocharian B.

SE mid.1sg.	*- <i>h₂e</i>	> pre-PT *- <i>a</i>	→ prt.mid.1sg. *- <i>a-y</i>	→ pre-TB *- <i>m-ay</i>
pf.2sg.	*- <i>th₂e</i>	> pre-PT *- <i>ta</i>	→ prt.mid.2sg. *- <i>ta-y</i>	

These developments led to two sets of distinct preterite endings to stems from former aorists: one for active inflection, one for middle. This raises the question, however, of what happened to the preterite forms that were directly inherited from the perfect. Using the principle of forward reconstruction, we can understand it. If the theory of the origin of the Proto-Tocharian preterite endings is correct, inherited perfect forms would not originally have these endings (1sg. *-*(a)wa*, 2sg. *-*(a)sta*, 3sg. *-*(s)at*), because they were not the result of ending stacking like forms from older present and aorist stems. Rather, they would have the original inherited perfect endings (1sg. *-*a*, 2sg. *-*ta*, 3sg. *-*ʾ*) following the perfect stem directly; see Table 4.4.

Table 4.4: Projected perfect paradigm in pre-PT (**nək*- ‘perish’)

	PIE pf.		pre-PT	ex.	cf.	a-prt.	s-prt.
1sg.	*- <i>h₂e</i>	>	*- <i>a</i>	* <i>n’āneka</i>		*- <i>awa</i>	*- <i>awa</i>
2sg.	*- <i>th₂e</i>	>	*- <i>ta</i>	* <i>n’āneka</i>		*- <i>asta</i>	*- <i>sta</i>
3sg.	*- <i>e</i>	>	*-’ <i>ə</i>	* <i>n’ānek’ə</i>		*- <i>at</i>	*- <i>at</i>
1pl.	*- <i>me</i>	>	*- <i>m’ə</i>	* <i>n’ānəkm’ə</i>		*- <i>am’ə</i>	*- <i>m’ə</i>
2pl.	*- <i>e</i>	>	*-’ <i>ə</i>	* <i>n’ānək’ə</i>		*- <i>asə</i>	*- <i>s’ə</i>
3pl.	*- <i>r(s)</i>	>	*-’ <i>ər</i>	* <i>n’ānəkər</i>		*- <i>ar</i>	*-’ <i>ər</i>

This inflectional paradigm must have become unviable at a certain point; especially in the singular, the 1sg. and 2sg. would have looked like middle endings without tense marking (*-*r* in the present, *-*y* in the preterite). The 3sg. *-’*ə*, on the other hand, would have looked identical to the present ending of the thematic conjugation after the loss of final *-*t* after a vowel: e.g., prs.3sg. **ak’-ə* > **aś* → TB ’*ə*/e-prs.[2].3sg. *aśām* ‘leads’, PIE aor.3sg. **h₁lud-et* > **lad’ət* > **lət’ə* > prt.[6].3sg. ^B*lac*, ^A*lāc* ‘let go’.

Two methods could be implemented to rectify this confusing situation. Either the endings were adjusted to match the active endings or they were adjusted to match the middle one. In the verbs that form prt.[o], the expected meaning of the perfect, intransitive and stative-resultative, cf. Ved. pf.act.3sg. *nanāśa* ‘has disappeared’, *rurōca* ‘shines, is lit up’, would make it plausible that the endings were adapted to the middle. The middle inflection of the present formations to these verbs could have served as extra motivation for this change. See Table 4.5 for a schematic overview of the proposed change.²⁹¹

Due to their strong formal similarity to the middle, it is likely that the change started in the 1sg. and 2sg. and spread from there. The replacement of the 3sg. could be motivated by the formal likeness to the thematic present as mentioned above, as well as the fact that *-’*ə* is a relatively weak ending. Since the plural stem is identical to the singular (cf. TA 3sg. *nakāt*, 3pl. *nakānt*), it could have been renewed at any point after the singular.

²⁹¹ An alternative scenario could be that the former perfect stems were transferred to middle inflection before the middle preterite endings were marked with *-*y*. The identity of the 1sg. and 2sg. perfect and middle endings would make the transition very smooth, but it would make the use of the perfect endings as active preterite endings in most other verbs totally incomprehensible. For this reason, this scenario is unviable.

Table 4.5: Replacement by preterite middle endings

	pre-PT		PT
1sg.	<i>*n'āneka</i>	→	<i>*n'ānek-a-y</i>
2sg.	<i>*n'ānehta</i>	→	<i>*n'ānek-ta-y</i>
3sg.	<i>*n'ānek'ā</i>	→	<i>*n'ānek-te</i>
1pl.	<i>*n'ānākm'ā</i>		→ <i>*-mte</i>
2pl.	<i>*n'ānāk'ā</i>		→ <i>*-t(ā)</i>
3pl.	<i>*n'ānākār</i>		→ <i>*-nte</i>

Moving on to the relationship between the root prt.[o] and s-prt.[3] and the loss of reduplication. Above, I tried to show that the Tocharian s-preterite can be derived from the s-aorist, including the fully sigmatic middle paradigm; I also argued that it is unlikely that the s-aorist middle had valency-decreasing function in Proto-Indo-European (see 2.3.7). The former perfect stem—which eventually turned into prt.[o] in this hypothesis—would have quite a lot in common with the s-preterite active, including *e*-grade in the root and no element **-a-* before the endings, unlike the *a*-preterite:

s-prt.act. 1sg. **C'eC-āwa* 3sg. **C'eC-sat*

prt.[o].mid. 1sg. **C'ā-CeC-ay* 3sg. **C'ā-CeC-te*

It is quite possible that these two stems stood in opposition to each other in some verbs, e.g., ^A*lyokāt* 'lit up (itr.)', Ved. *ruróca* 'shines' < ^A*lelóuke*, ^A*lyokās* 'lit up (tr.)', Lat. pf.ind.act.3sg. *lūxit* 'shone' < ^A*(h₁e)lēukst* (Adams 2012: 51). But even if that is not the case, it is plausible that the two stems became paradigmatically linked as the respective actives and middles of each other. Functionally, the prt.[o] would fill a gap in the s-preterites with inchoative-causative semantics, namely the inchoative meaning in the preterite, which the sigmatic middle to the s-preterite could not designate. Formally, the absence of palatalisation from the old perfect *o*-grade would be regular in most middles, since these usually go back to zero-grade, which could further the reanalysis of the former perfect as a middle.

With regard to reduplication, there are several types of systemic pressure that could have affected it. First of all, the paradigmatic link with the s-preterite could have motivated the loss of reduplication in an effort to make the stems even more similar.

s-prt.act. 1sg. *C'eC-əwa 3sg. *C'eC-sat

prt.[o].mid. 1sg. *CeC-ay 3sg. *CeC-te

Having already received middle endings, the reduplication syllable may have seemed redundant to mark inchoativity. Elsewhere in the verbal system, reduplication in the finite verb was associated with transitivity, namely in the reduplicated causative prt.[2] (found in Tocharian A). The reduplication syllable in this formation has been strengthened phonologically (see above), which must be interpreted as an effort to retain it. If the idea that prt.[o] goes back to the Proto-Indo-European perfect is accepted, it must be assumed that no such strengthening effort was made. In that case, the reduplication syllable should be lost phonologically in the verbs that attest a prt.[o], since they all start with a single consonant, leaving *ə in an open syllable: e.g., *n'ə-nekte > *nnekte > *nekte > TA *nakät*. So, while the lack of reduplication is a problem for the theory that prt.[o] comes from the Proto-Indo-European perfect, it is not on its own reason enough to reject the theory.

In subsection 2.2.1, I criticised the syncretism hypothesis for the origin of the s-preterite for lacking motivations for the conflation of the Proto-Indo-European perfect and s-aorist stems. In this section, I hope to have shown that both formal and functional motivations exist for a small scale syncretism between the s-aorist and the perfect in this small group of verbs. The similarities between the perfect and the middle endings in Proto-Indo-European can explain why former perfect stems are inflected in the middle voice, while the Proto-Indo-European *o-grade of the paradigm gave it the appearance of a middle counterpart of the s-preterite. On the functional side, the meaning of the perfect is a good fit for the root prt.[o], and in verbs with semantics that are prone to inchoative-causative alternation, we can understand the connection between the active s-prt.[3] and the middle root prt.[o] as a mechanism to express both meanings in the preterite.

In this subsection, I hope to have given a plausible account of the root prt.[o] as a reflex of the Proto-Indo-European perfect. The discussion has touched upon its relationship with the s-prt.[3], but so far not on the relationship with the e-sbj.[3] or any of the other stems of the stem pattern. In the following section, the conclusions of this and the previous section on the e-sbj.[3] and well as conclusions from Chapter 2 will be tied together in order to present a unified account of the stem pattern from Proto-Indo-European to attested Tocharian.

4.4. The origin of the *e*-subj.[3] – root prt.[0] stem pattern

In this and the previous chapters, the origins of the various stems that participate in the *e*-subj.[3] – root prt.[0] stem pattern have been treated somewhat atomistically. The *s*-preterite of class [3] and the accompanying root subjunctive of class [1] were traced back to the Proto-Indo-European *s*-aorist, while the *e*-subjunctive of class [3] and the root preterite of class [0] were connected to the Proto-Indo-European stative (type **CeC-o*). In the present, the voice alternation was explained as a merger of inherited **e/o-* and **ǵe/o-* stems which left their voice to be the sole indicator of the difference between inchoative and causative semantics (3.7).

Still, it remains to be explained how the various stems became associated and coalesced into this specific stem pattern. One way to interpret the pattern is as inherited from an already defined subgroup. As we have seen, this is the approach of Jasanoff (2003: 174–214; 2008; 2019b), who takes most features as original features of the presigmatic aorist paradigm: the partly sigmatic *s*-prt.[3], the root prt.[0], the *s*-prs.[8], and both the root subj.[1] and the *e*-subj.[3], as well as their morphological marking of inchoative-causative alternation through voice. If this is correct, we would expect the CIE languages to show some signs of being innovative, for instance, by forming new or regular-looking stems.

If, on the other hand, the theories about the origin of the *e*-subj.[3] and the root prt.[0] presented in this thesis are correct, none of the verbs in this group can have inherited every single stem of their stem pattern directly. Some verbs must have inherited certain stems, while other verbs provided other stems. In order to understand which verbs contributed with which stems and how these stems came together to form the attested patterns, it is necessary to look at the Indo-European comparanda for the verbs in question. This is the topic of the following subsection.

4.4.1. Stems inherited from Indo-European

Fortunately—and probably not coincidentally—the majority of the roots that form *e*-subjunctives of class [3] and root preterites of class [0] have cognates in other Indo-European branches and must be inherited from Proto-Indo-European. This greatly increases the chances of understanding the origin of the stem pattern and emphasises the impression that the pattern is archaic—at least within Tocharian. As I argued directly above, it is important for us to examine the cognates to determine the most likely starting point of the stem formation of these verbs in the proto-language. In 3.7.2, the etymologies for the reconstructed roots are given, but I will reiterate them and their Tocharian reflexes in Table 4.6.

Table 4.6: Tocharian verbs with e-sbj.[3] and their PT and PIE reconstructions

Tocharian meaning	TB	TA	PT	PIE
‘burn’	<i>tsək-</i>	<i>tsäk-</i>	< <i>*tsək-</i>	< <i>*d^heg^{wh}-</i>
‘be born; beget’	<i>kən-</i>	<i>kän-</i>	< <i>*kən-</i>	< <i>*ǵenh₁-</i>
‘be extinguished; extinguish’	<i>kəs-</i>	<i>käs-</i>	< <i>*kəs-</i>	< <i>*g^wes-</i>
‘perish; destroy’	<i>nək-</i>	<i>näk-</i>	< <i>*nək-</i>	< <i>*nek-</i>
‘bow, bend (itr.); bend (tr.)’	<i>nəm-</i>	<i>näm-</i>	< <i>*nəm-</i>	< <i>*nem-</i>
‘light up’	<i>ləwk-</i>	<i>läwk-</i>	< <i>*ləwk-</i>	< <i>*leuk-</i>
‘cook, ripen’	<i>pək-</i>	<i>päk-</i>	< <i>*pək-</i>	< <i>*pek^w-</i>

**pek^w-* ‘cook; ripen’ and **d^heg^{wh}-* ‘burn’

The etymologies of the roots **pek^w-* ‘cook; ripen’ and **d^heg^{wh}-* ‘burn’ were discussed in 3.7. Both show evidence of an s-aorist and an active transitive **e/o*-present; **pek^w-* shows an additional middle **ġe/o*-present in Vedic, while **d^heg^{wh}-* probably formed an iterative present **d^hog^{wh}ġe/o-*. These two roots thus show the morphology of primarily transitive verbs. In contrast to this, we find five roots that show morphology related to intransitivity: **ǵenh₁-* ‘be born’, **g^wes-* ‘be extinguished’, **nek-* ‘disappear, perish’, **nem-* ‘bow’ and **leuk-* ‘light up’.

**ǵenh₁-* ‘be born’

PIE **ǵenh₁-* ‘be born’ is continued in ^B*kən-*, ^A*kän-* ‘occur; fulfil’ (LIV 2001: 163; Malzahn 2010: 570; Adams 2013: 170). In Proto-Indo-European, this verb formed a root aorist; cf. Ved. *ajani* ‘was born’, Gk. ἐγένετο ‘was born, came into being’, Arm. *cnaw* ‘gave birth; was born’, Lat. *genuī* ‘begat, gave birth’ (Harðarson 1993b: 167–8). A reduplicated present can be reconstructed on the basis of Lat. *gignō* ‘beget’, Gk. γίγνομαι ‘become’, Av. 3pl. *zīzanənti* ‘beget’, and indirectly in the Vedic reduplicated aorist *ājījanat* ‘has produced’ (Jamison 1983: 216–9). An intransitive **ġe/o*-present is attested in Ved. prs.ind.mid.3sg. *jáyate* ‘is born’, YAv. prs.inj.mid.3sg. *zaiiata*, and OIr. *gainethar* ‘who is born’, while a transitive **e/o*-present might be reflected in Ved. prs.ind.act.3sg. *jánati* ‘produces, gives birth’ and OLat. prs.act.3pl. *genunt* ‘beget’, if these go back to a common prestage (LIV 2001: 163–4; Schumacher 2004: 327–8; Matasović 2009: 151).²⁹² We also find evidence of a perfect: Ved. pf.act.3sg. *jajāna* ‘has

²⁹² De Vaan (2008b: 261) takes this form as secondary.

begotten; has been born', Gk. γέγονα 'have been born'.

**nek-* 'disappear, perish'

Both formally and semantically, ^B*nək-*, ^A*näk-* 'disappear, perish; destroy' matches Ved. *naś-* 'disappear' perfectly. We can therefore reconstruct PIE **nek-* 'disappear, perish'. Indo-Iranian attests a **je/o-* present in Ved. *naśyati* 'disappears', YAv. *nasiiēiti* 'strays from', a root aorist in Ved. sbj.3pl. *naśanti* 'will become lost', a reduplicated aorist in OAv. *anqsaṭ* 'disappeared' and probably Ved. inj.3sg. *neśat* 'verschwindet',²⁹³ and an intransitive perfect in Vedic *nanāśa* 'is gone'. A causative is reflected in Ved. *naśáyati* 'makes disappear', OP *vināśayatiy* 'damage', and Lat. *noceō* 'harm' (Kümmel 2000: 288; LIV 2001: 452; de Vaan 2008b: 411). Nominal forms to **nek-* are continued in many Indo-European branches and show that the meaning 'perish' is original alongside 'disappear': root noun **nék-* > Lat. *nex* 'murder',²⁹⁴ *u*-stem **nekū-* > Av. *nasu-* 'corpse', Gk. *véxw̃s* 'id.', PC **anku-* > OIr. *éc*, OBret. *ancou* 'death', and **nekro-* > Gk. *νεκρός* 'dead person' (de Vaan 2008b: 408; Matasović 2009: 37; Beekes 2010: 1004). The PIE *u*-stem **nekū-* 'dead' is also reflected in the thematic stem ^B*en̥kwe*, ^A*on̥k* 'man' < **n̥kwo-* 'mortal' (Adams 2013: 83).

**nem-* 'bow, bend (itr.)'

^B*nəm-*, ^A*näm-* goes back to **nem-* 'bow, bend (itr.)', also reflected in PIr. **nam-*. These are the only two branches to continue this root. In Indo-Iranian, we find an *s*-aorist in Ved. *abhi anān* (KS) 'has bent', *anañsata* (ŚB) 'has bowed', a thematic present in Ved. mid.3sg. *námate* 'bows', *námati* 'bends (tr.)',²⁹⁵ YAv. *nəmaite* 'bows', and a perfect in Vedic *nānāma* 'has bowed'. There is also a causative attested: Vedic *namayati* 'cause to bow', YAv. *nāmaieiti* 'bends' (LIV 2001: 453; Malzahn 2010: 685). The transitive active thematic present in Vedic is likely an oppositional factitive formation (Kümmel 2000: 279), while the *s*-aorist could be an even later formation. The formally identical root **nem-*, found in Greek *νέμω* 'allot, distribute', Gothic *niman* 'take' and Latvian *ņemu* 'take', should be kept separate; thus the LIV (2001: 453).

²⁹³ The reduplicated stem **na-nś-a-* seems to have been restructured analogically to the weak perfect stem *neś-* (Hoffmann 1967b: 64).

²⁹⁴ Perhaps originally, 'disappearance'.

²⁹⁵ An intransitive middle stem *namyá-* is also attested three times in Vedic (Kulikov 2012: 476–7).

**leuk- ‘become light, shine’*

^B*lawk-*, ^A*läwk-* ‘light up’ goes back to PIE **leuk-* ‘become light, shine’ (Hackstein 1995: 126–8; LIV 2001: 418–9; Adams 2012). As argued above, a root stem with a nondental middle 3sg. can be reconstructed on the basis of Hitt. *lukka-ta(rī)* ‘light up, dawn’. Ved. *rócate* ‘shines (itr.)’ and YAv. *raociṇt-*²⁹⁶ ‘shining’ attest an intransitive thematic present, while the Ved. pf. *ruróca* can be used both intransitively and transitively (Kümmel 2000: 429–32). An oppositional causative **loukéje/o-* should certainly also be reconstructed for the protolanguage on the basis of Ved. *rocáyati* ‘let shine’, YAv. *raocaiiēiti* ‘id.’, OLat. *lūceō* ‘let shine’ (de Vaan 2008b: 356).²⁹⁷ As discussed above, perhaps an oppositional s-aorist should be reconstructed.

**g^wes- ‘be extinguished’*

The reconstruction of the Proto-Indo-European root underlying ^B*kəs-*, ^A*kūs-* ‘be extinguished; extinguish’ is quite problematic. In the LIV (2001: 541), it is reconstructed as **(s)g^wesh₂-*, with the s-mobile and final **h₂* reconstructed to accommodate primarily the Greek data: aor. ἔσβη ‘went out, was quenched’ (contracted **ésg^weha* < **h₁ésg^wesh₂t*), prs. σβέννυμι ‘go out’. According to the LIV (2001: 542 fn. 1), the *set*-character can also be gleaned from the Vedic aorist *dāsīt*²⁹⁸ and the TA prt.ptcp. *kāksō**. These forms, however, can all be explained differently, mostly as secondary developments; see García Ramon (1982: 112–4), Jasanoff (2008: 156). The TA prt.ptcp. *kāksō**, attested in the f.nom.pl. *kāksont*, does not belong to this verb, but to the verb ^A*ksā-* ‘blind’ (Carling, Pinault & Winter 2009: 185; Carling & Pinault 2023: 174). Jasanoff (2008) also argues that the s-mobile is an inner-Greek innovation and reconstructs a simpler root **g^wes-*.

The quality of the velar has also been in dispute, due to the conflicting evidence of Hitt. *kišt-āri* ‘be extinguished’, *kāšt-/kišt-* ‘hunger’ on the one hand, and Got. *qist* ‘destruction’ on the other (Beekes 2010: 1314–5; Adams 2013: 188). It is also worth noting that the expected outcome of the root in Tocharian if it had an initial labiovelar would be **k^wəs-*; compare ^A*k^wäm-* ‘come’ < **g^wem-* ‘come’ (but ^B*kə(n)m-*). However, Kloekhorst (2008: 462–3) has convincingly argued that the Hittite forms

²⁹⁶ With **a* > **ə*/_N, and **ə* > **i*/_{i, c, j, ž} in Young Avestan; compare YAv. *-cinah* (final member of compound) ‘desire’ (Hoffmann & Forssman 1996: 63, 193).

²⁹⁷ Perhaps a variant **loukije/o-* can be posited on the basis of Arm. *lowc^canem* ‘light, kindle’ and Lith. *láukiu* (Klingenschmitt 1982: 194; LIV 2001: 419 fn. 7, 10b).

²⁹⁸ The root *das-* ‘waste; become exhausted’ is dissimilated from *jas-* ‘disappear, get lost’; cf. *dásamāna-*, *jásamāna-* ‘hungry, languishing’ (Mayrhofer 1992: 710–1; Kulikov 2012: 537, 551).

should be separated from the Tocharian verb ^B*kəs-*, ^A*käs-* ‘be extinguished’, pointing out that the root-final dental in Hittite must be an original part of the root, which he reconstructs ^(g)*hesd-* ‘starve’.²⁹⁹ In this light, it would be unfortunate to have to separate the Tocharian verb from the other Indo-European comparanda, which mean exactly the same. Rather, we may assume that expected ^{*}*kʷəs-* was delabialised, either in pre-Proto-Tocharian or even pre-Tocharian A.

Another problem with ^B*kəs-*, ^A*käs-* is that the stem formation is not uniform across branches. Especially whether the root formed a root aorist or an *s*-aorist divides the Greek and Indic material. Jasanoff (2008: 157–60) argues for an *s*-aorist on the basis of Greek ἔσβεσ(σ)α and the Tocharian evidence for an *s*-preterite. Leaving the Tocharian aside for now, the argument for the antiquity of the Greek *s*-aorist are the transitive nasal presents ζεινυμεν· σβεννυμεν (Hesych.) which seem to have been formed analogically to it (García Ramón 1982: 112–4). Jasanoff (2008: 162) explains the Greek intransitive aorist ἔσβη as an innovative ^{*}*eh₁*-stative, replacing the—in his model—original intransitive aorist ^{*}*gʷóso*, the cognate of which he finds in TB prt.mid.3pl. *kessante*. However, the fact that the Greek present formations are built on the *s*-aorist does not necessarily mean that the formation is archaic. Since the root ends in an ^{*}*-s-*, it is conceivable that some forms of a root aorist stem were reinterpreted as sigmatic in the prehistory of Greek.

It is also possible that the intransitive aorist ἔσβη reflects the root aorist, if Harðarson (1993b: 211) is correct that it has been renewed with the regular ending of the sigmatic and thematic aorist: ^{*}*h₁ésgʷest* > ^{*}*ésgʷes* → ^{*}*ésgʷese*.³⁰⁰ The benefit of constructing a root aorist, besides the perfective semantics, is the evidence from Vedic, in which we find an intransitive thematic aorist: Ved. aor.inj.act.3sg. *dasat* ‘be used up’, aor.ptcp.mid. *dásamāna-* ‘hungry, languishing’.³⁰¹ This fits well with the rest of the Vedic stem formation, where we find an intransitive ^{*}*ie/o*-present ipv.act.2pl. *níjasyata* ‘vanish!’ and a perfect *níjjāsa* ‘has disappeared’ (Kümmel 2000: 199).

Although ^{*}*gʷes-* and its Indo-European descendant forms present a myriad of complications, I cautiously follow the reconstruction of a root aorist to this root and include it in the group with morphology primarily associated with intransitivity.

²⁹⁹ These two roots may be added to the list of correspondences in which an addition of ^{*}*-d-* seems to derive a durative root from a telic one: ^{*}*mers-* ‘forget’ → ^{*}*mrsd-* ‘be merciful’, ^{*}*peis-* ‘crush’ → ^{*}*pisd-* ‘press’ (Lubotsky 2021: 234).

³⁰⁰ Either showing the Aeolic result of contraction, or secondarily introduced -η for -ει.

³⁰¹ With dissimilation of the root-initial consonant; cf. *jásamāna-*.

Uncertain etymologies

Lastly, there are two verbs that have less certain etymologies. The etymology of ^ʌ*wäl-* is somewhat debated, but the most common approach is to take the verb from PIE ^{*}*uelh₃-* ‘beat’; see 1.3.3 above. Hackstein (1995: 301) posits an original nasal present ^{*}*ul^h-ne-h₃-*, reflected in Latin *vellō* ‘pull out (tr.)’,³⁰² and an intransitive root aorist ^{*}*uelh₃-/ul^hh₃-* in Hitt. *walh^{-zi}* ‘strike, beat’; see also LIV (2001: 679), de Vaan (2008b: 659).³⁰³ In light of Hittite *walh^{-zi}* ‘strike’, it seems unlikely that the root stem would originally have been intransitive. Gk. ἐάλων ‘was defeated’ could reflect a fientive ^{*}*ul^hh₃-eh₁-*. If the etymology is correct, the semantics of TA ‘die’ must derive from an oppositional formation of some sort and the expected root-final *ā* of the root must have been analogically removed. Malzahn (2010: 893) suggests that the *ä*-grade of the active s-preterite in Tocharian A, 3sg. *wläs*, 1pl. *wälmäs*, suggests that an original middle underlies the stems. Middle voice would, of course, be expected considering the rest of the stem pattern, but in this case, we would expect a prt.[o] which would have had *a*-grade in Tocharian A from Proto-Tocharian ^{*}*e*, 3sg. †*walt*, 3pl. †*walänt*, so that would not explain the *ä*-grade. A connection to HLuw. *wala-* ‘die’, CLuw. (u)*walant(i)-* ‘dead’, as tentatively suggested by Melchert (1994: 254), is phonological and semantically compelling, but the Luwian word may rather be connected to a root ^{*}*g^wel(H)-*, and in any event, the comparison does not tell us much about the original stem formations;³⁰⁴ for the Hieroglyphic Luwian attestations, see Sasseville (2021: 366–7).

The other verb with an uncertain etymology is ^B*tām-*, ^A*tām-* ‘be born’. A tentative reconstruction of is PIE ^{*}*tem-* (LIV 2001: 624; Malzahn 2010: 654; Adams 2013: 309). While this is obviously phonologically sound, there is only one possible cognate, namely the Greek reduplicated aorist stem ἔτετεμε ‘found’. Adams (2013: 309) suggests that the Proto-Indo-European root meant ‘arrive’ which would be an attractive compromise between the Greek and the Tocharian meanings. Following Chantraine (1958: 309), the LIV (2001: 624) also connects the Greek present 3sg. τέμει. However, this Greek present probably continues the root ^{*}*temh₁-* ‘cut’, not ^{*}*tem-* ‘reach’, and

³⁰² But see van Beek (fthc.), who rather takes Lat. *vellō* from a root ^{*}*uelg^h-* ‘tear out’ with ^{*}*-lg^h-* > *-ll-*; cf. Skt. *varh-* ‘tear out’.

³⁰³ Hackstein (1995: 301) includes Hittite *hulle^{-zi}* ‘smash, defeat’ as a descendent of ^{*}*uelh₃-*. He proposes laryngeal metathesis to solve the anlaut, but as pointed out by Kloekhorst (2008: 360), ^{*}*h₃* would not yield *h* in front of *w* and it is therefore better to keep the verbs apart. In *walh^{-zi}*, the preservation of ^{*}*h₃* is irregular before consonantal endings, but Kloekhorst explains it convincingly as reintroduced from the vowel-initial 3pl.

³⁰⁴ See Malzahn (2016a: 285–6) and above 1.3.1.

should thus be separated from the reduplicated aorist, synchronically and diachronically (Beckwith 1996: 38–40).

Conclusions

In Table 4.7, there is an overview of the stems reconstructed for the 9 verbs in Proto-Indo-European. There are two general patterns in the securely reconstructible roots: some verbs seem to have had primarily intransitive morphology, including root aorists and perfects, the others seem to have formed primarily transitive stems such as aorists. Some of them have oppositional stems that increase or decrease the transitivity of the verb. For all verbs, either an **e/o-* or a ** $\acute{e}$ /o-* present is attested. The verb **leuk-* ‘light up’ belongs in the first group, but shows some special features. There are two verbs that form *e*-subj.[3] stems and have uncertain etymologies, ^B*təm-*, ^A*täm-*, and ^A*wäl-*. These will be discussed at the end of this section. For an overview of the reconstructed present stems, see Table 4.7.

It is noticeable that, for instance, **pek^w-* and **d^heg^{wh}-* have such different stem formations to **nek-* in the CIE languages. In 3.7.2, I argued that the heterogeneity in the CIE cognates spoke in favour of a retentive state, while the Tocharian homogeneity in their treatment of the present stems indicated innovation. The same is true probably outside the present. If, with Jasanoff, these three roots started out with the same sets of stems in the proto-language, it must be explained why they were not treated the same in the later stages of the proto-language. For this reason, I think coalescence in Tocharian, rather than divergence in CIE, is the key to understanding the stem pattern with the *e*-subj.[3] and prt.[0]. In the following section, I will propose a way that such a coalescence could have occurred in the prestages of Tocharian.

Table 4.7: Reconstructed PIE stems

	aorist	perfect	present
* <i>ǵen_h</i> - ‘be born’	* <i>ǵén_h</i> / <i>ǵnh₁</i> - act. itr.	* <i>ǵe-ǵón_h</i> ₁ -/ <i>-ǵnh₁</i> - itr.	* <i>ǵnh₁-ǵé/o-</i> mid. itr. * <i>ǵi-ǵen_h</i> ₁ -/ <i>-ǵnh₁</i> - act. tr. ? * <i>ǵén_h</i> ₁ - <i>e/o-</i> act. tr.
* <i>ǵ^wes-</i> ‘be extinguished’	* <i>ǵ^wés/<i>ǵ^ws-</i> act. itr.</i>	* <i>ǵ^we-ǵ^wós-</i> / <i>-ǵ^ws-</i> itr.	* <i>ǵ^ws-ǵé/o-</i> mid. itr.
* <i>nek-</i> ‘disappear, perish’	* <i>nék/nk-</i> act. itr.	* <i>ne-nók-</i> / <i>-nk-</i> itr.	* <i>nk-ǵe/o-</i> act. itr. * <i>nok-éǵe/o-</i> act. tr.
* <i>nem-</i> ‘bend, bow’		* <i>ne-nóm-</i> / <i>-nm-</i> itr.	* <i>ném-e/o-</i> mid. itr. * <i>nom-éǵe/o-</i> act. tr.
* <i>le_x</i> - ‘light up’	* <i>lé_x</i> / <i>luk-</i> mid. itr., 3sg. * <i>lé_x</i> - <i>o</i> (? * <i>lē_x</i> / <i>le_x</i> - <i>s-</i>)	* <i>le-lo_x</i> -/ <i>-luk-</i> itr.	* <i>lé_x</i> - <i>e/o-</i> mid. itr. * <i>lo_x</i> - <i>éǵe/o-</i> act. tr.
* <i>pek^w</i> - ‘cook, let ripen’	* <i>pék^w</i> / <i>pék^w-s-</i> act. tr.		* <i>pék^w-e/o-</i> act. tr. * <i>pk^w-ǵé/o-</i> mid. itr.
* <i>d^heg^{wh}</i> - ‘burn’	* <i>d^hég^{wh}</i> / <i>d^hég^{wh}-s-</i> act. tr.		* <i>d^hég^{wh}-e/o-</i> act. tr. * <i>d^hog^{wh}-éǵe/o-</i> act. tr. iter.
? * <i>tem-</i> ‘reach’	? redupl. * <i>te-tm-</i>		
? * <i>uel_h</i> ₃ - ‘strike’	* <i>ué_l</i> ₃ / <i>ul_h</i> ₃ - act. tr.		* <i>ul-né-h₃</i> -/ <i>ul-n-h₃</i> - act. tr.

4.4.2. Coalescence

In the previous section, I argued that the variety in stem formation of the Indo-European comparanda for the Tocharian verbs with e-sbj.[3] and root prt.[o] indicates that the homogeneity of the Tocharian stem formation is innovative. Some roots show morphology related to basic transitive meaning, while others show stems typically linked with intransitivity; see Table 4.7. In Tocharian, however, the verbs with e-sbj.[3] and root prt.[o] show stems from both types of morphology. In this subsection, I would like to present a hypothesis of how the transitive stems could

have been introduced into the stem pattern of the primarily intransitive verbs and vice versa.

While they differ in their stem formation in many ways, the roots in question also have several things in common. First of all, they form either **e/o-* or **je/o-* presents which tend to correlate voice and transitivity; i.e., apart from **nk-je/o-*, all intransitive stems are inflected with middle voice. Secondly, these verbs all have change-of-state semantics of the type that invites inchoative-causative alternations (Haspelmath 1993). Finally, the merger of velars in Tocharian enhanced the phonological similarity of the roots; with the exception of ^B*lawk-*, ^A*läwk-* and ^B*kas-*, ^A*käs-*, all roots belonging to the core of this pattern have the structure **Cak-* or **CaN-*. These similarities could account for continuous mutual influence between these verbs throughout the prehistory of Tocharian.

Most of these verbs seem to have been inherited with the capacity for inchoative-causative alternation expressed with both stem and voice alternation. As far as I can tell, the causative of the type **CoCejeti* is nowhere to be found in Tocharian, at least not in that capacity. However, in **gēnh₁-* ‘be born’ > ^B*kən-*, ^A*kän-*, **pek^w-* ‘cook’ > ^B*pək-*, ^A*päk-* and possibly ^B*lawk-*, ^A*läwk-*, causative function seems to be expressed with simple thematic stems. Since ^B*kən-*, ^A*kän-* behaves slightly differently than ^B*pək-*, ^A*päk-* etc. by forming a causative stem pattern as opposed to an s-transitive, it will be treated in the following section (4.4.3).

The starting point for the discussion in this section will be ^B*pək-*, ^A*päk-*. This will constitute the example for roots with anticausative alternation, i.e. roots in which the transitive meaning is basic to the root and the intransitive meaning is derived. In the following diachronic hypothesis, I do not mean to imply that any single verb is the locus for the behaviour of the whole group. In other words, when, e.g., ^B*pək-*, ^A*päk-* and ^B*lawk-*, ^A*läwk-* are highlighted in the discussion, they should be understood as representatives for their respective morphological type, not the sole instigators of the developments.

If we propel the present stems of these verbs from Proto-Indo-European into pre-Proto-Tocharian, we get a system with a transitive present with active endings, palatalising root vowel **ə* and the thematic suffix **ə/e* from the Proto-Indo-European **e/o-* present next to an intransitive present with middle endings, non-palatalising root vowel **ə* and a thematic suffix with palatalisation throughout **ə/e* from the Proto-Indo-European **je/o-* present.

PIE **CeC-e/o-* > pre-PT **CəC-ə/e-*

PIE **CeC-je/je-* > pre-PT **CəC-ə/e-*

As I have argued in 3.7.2, it is highly likely that these two stems merged. This would result in one present stem in which valency was expressed by the alternation of active and middle endings, as well as root initial palatalisation. In the preterite and subjunctive, however, there was no inherited stem to express the intransitive meaning; see Table 4.8.

Table 4.8: A projection of PIE **pekʷ-* into pre-PT

PIE <i>*pekʷ-</i> ‘cook’		
	tr.	itr.
prs.	<i>*pékʷeti</i>	<i>*pkʷǵeto(r)</i>
aor.	<i>*(h₁e)pékʷst</i>	—
pf.	—	—
	↓	↓
	pre-PT <i>*pək-</i>	
prs.	<i>*p’ək’ə</i>	<i>*pək’ətər</i>
sbj.	<i>*pek</i>	—
prt.	<i>*peksa</i>	—

The question is what stems would be available to supply the intransitive present with appropriate subjunctive and preterite stems. The answer can be found in the roots that shared some of the formal and semantics features, but had morphology associated with basic intransitive meaning such as **leuk-* ‘light up’ that formed presents and aorists in the middle voice and perfects. The presents of both types would be very similar, if not identical, and the preterite, deriving from the old perfect, would complement the *s*-preterite as a middle to an active, as outlined in 4.3.5. It is even possible that some of the primarily intransitive verbs formed oppositional *s*-aorists, which would make the relationship between the two preterite stems even more attractive; see Table 4.9.

Table 4.9: A projection of PIE **leuk-* into pre-PT

PIE <i>*leuk-</i> ‘light up’	
tr.	itr.
prs.	<i>*léuketo(r)</i>
aor. ? <i>*(h₁e)léukst</i>	<i>*(h₁e)léuko</i>
pf.	<i>*lelóuke</i>
↓	↓
	pre-PT <i>*lawk-</i>
prs.	<i>*lawk’atār</i>
sbj. ? <i>*lewk</i>	<i>*l’awke-tār</i>
prt. ? <i>*l’ewksa</i>	<i>*lewk’e → *lewkte</i>

In the subjunctive, the former nondental middle aorist is continued with the addition of present-subjunctive endings, parallel to other subjunctive stems from old aorists.

PIE 3sg. **léuko* > pre-PT **l’awke* → **l’awke-tār*

Under these circumstances, it is quite likely that the two proto-paradigms of verbs like **pək-* and **lawk-* would coalesce, filling in the lacunae in each other’s paradigms, so to speak. The resulting syncretism would more or less give the stem pattern reconstructible for Proto-Tocharian, with the exception of the present stem which has not yet been replaced with a sigmatic stem; see Table 4.10. For the further special development of **lawk-* ‘light up’, see 4.6 below.

Table 4.10: Pre-PT inchoative-causative stem pattern

	pre-PT <i>*pək-</i>		<i>*lawk-</i>	
	tr. act.	itr. mid.	tr. act.	itr. mid.
prs.	<i>*p’ək’ə</i>	<i>*pək’atār</i>	<i>*l’awk’ə</i>	<i>*l’awk’atār</i>
sbj.	<i>*pek</i>	<i>*pəketār</i>	<i>*lewk</i>	<i>*l’awketār</i>
prt.	<i>*peksa</i>	<i>*pekte</i>	<i>*l’ewksa</i>	<i>*lewkte</i>

Interpreting the stem pattern of verbs with *e*-subj.[3] and root prt.[o] as a result of inner-Tocharian convergence requires fewer assumptions than taking the stem pattern as an original Proto-Indo-European phenomenon. Within this hypothesis, the Tocharian data is compatible with its Indo-European comparanda, and we do not need to worry about how and why roots like **d^heg^{wh}*- ‘burn’ were treated differently than roots like **leuk-* ‘light up’ in CIE. Within Tocharian, however, not all roots with *e*-subj.[3] and root prt.[o] show exactly the same stem formation; ^B*kən-*, ^A*kän-* ‘occur’ and ^B*təm-*, ^A*täm-* ‘be born’ form their causative stems differently from the rest. In the following section, I will discuss how they too fit into the coalescence hypothesis.

4.4.3. The development of ^B*kən-*, ^A*kän-* ‘occur’ and ^B*təm-*, ^A*täm-* ‘be born’

^B*kən-*, ^A*kän-* ‘occur’ and ^B*təm-*, ^A*täm-* ‘be born’ depart from the most common pattern of verbs with *e*-subj.[3] and root prt.[o] in several ways. If it is correct that most of the verbs that follow this pattern developed it together from various starting points, it must be explained why these two verbs behave differently. The differences in stem formation are found in both Tocharian A and Tocharian B. First of all, in Tocharian B, the intransitive and transitive meanings are not distinguished by voice alone, but by stem alternation; the transitive is formed with a causative stem pattern with initial accent. Conversely, in Tocharian A, the semantic distinction is expressed only through voice in the present, whereas ^A*päk-*, ^A*näk-*, etc. show a stem alternation between an *s*-prs.[8] and a *nəsk*-prs.[10]. Tocharian A matches Tocharian B in the formation of the causative preterite, as described above (see 4.3.3, from p. 186).

For ^B*kən-*, ^A*kän-* ‘occur’, the pivotal form of the transitive paradigm is the preterite, prt[2].act.3sg. ^A*kakäm*, ^B*kyāna*, which has become central in the discussion of the origin of the whole class. The origin of the causative preterite of class [2] is a matter of some controversy, which cannot be treated in detail here. I will briefly outline my position in the discussion where it relates to the status of ^A*kakäm*, ^B*kyāna*; for more references and detailed discussion of the various theories, see Kim (2003: 194–7) and Malzahn (2010: 184–7; 2016b: 391–2). The first point of contention is whether the Tocharian A reduplicated causative prt.[2] and the Tocharian B unreduplicated causative prt.[2] reflect the same proto-formation or different ones. I follow the majority of scholars who derive them from the same source; see Schulze (1924), Couvreur (1947: 68–9), Krause (1952: 175), Krause & Thomas (1960: 244–5), Kim (2003: 197–8), Malzahn (2010: 187–8; 2016b), Peyrot (2013a: 490), Seržant (2014: 98–9).³⁰⁵ The

³⁰⁵ The earliest proponent of the opposite view, namely that the two languages represent

two formations correlate in distribution, in function, and in the formation of the preterite participle, e.g., prt.ptcp. ^Bśéśśamu, ^Aśaśmu to ^Bstām-, ^Aštām- ‘put, place’; see Kim (2003: 197–8), Malzahn (2016b: 391–2). We can therefore assume that ^Akakām, ^Bkyāna goes back to the same Proto-Tocharian proto-stem. The next issue is the meaning of the stem. Malzahn (2010: 184–5, 189, 570) posits on the basis of the Tocharian A example (ex. 79, p. 187) that the stem was intransitive, ‘became’. Combining the lack of palatalisation in ^Akakām and the secondary palatalisation in ^Bkyāna (instead of expected †^Aśaśām, †^Bśāna), she argues that the stem goes back to a former perfect **gégonh₁*-; cf. Gk. γέγονε ‘has been born’. This is an attractive possibility, but it is made complicated by the existence of the preterite participle ^Bkekenu which strongly indicates an *e*-grade *s*-preterite middle in TB **kensate*, which in turns foretells the existence of a prt.[o] in TA **kanät*. As I argued above (4.3.5), I would prefer to derive the other preterites of class [o], such as ^Anakät, ^Apakät, from the perfect, and I see no reason why the inferred form, TA **kanät*, should not share that origin. The Proto-Indo-European perfect thus could not have developed into ^Akakām.

Since a transitive reading of ^Akakām as ‘fulfilled’ has proven possible, which fits with the transitive preterite in Tocharian B, 3sg. *kyāna* (see 4.3.3, p. 187–189), we can seek a transitive origin for the prt.[2] stem. It is quite tempting to connect ^Akakām ‘became’ to the reduplicated present PIE **gígenh₁*-/**gígnh₁*- (with an additional thematic vowel in all attested branches; see the LIV 2001: 163). This was suggested by Harðarson (1997) for the Tocharian A causative prt.[2], who calls upon the causative reduplicated aorist in Indic as a parallel for the development of an imperfect to an aorist.³⁰⁶ In Vedic, it has been proposed that the reduplicated present **gígenh₁*-/**gígnh₁*- was the pivotal form in the creation of the causative reduplicated aorist; see Leumann (1962), Jamison (1983: 216–9). It is unlikely that the exact same

different original formations, is Lane (1948: 307–8) who compares the Tocharian B causative prt.[2] with the preterite type ^Blyāka ‘saw’ and further to the ‘long-vowel’ perfects of Latin and Germanic. This is supported by Adams (1978: 282; 1988: 87–8) and Pinault (1989a: 149; 2008: 599–600) who both connect the Tocharian A stem to the reduplicated causative aorist of Sanskrit, thus separating it from the Tocharian B stem. However, the Tocharian B causative prt.[2] has initial accent, whereas the ^Blyāka-type has medial accent, e.g., 1sg. *kyānawa* /*kyānawa*/, but *lyakāwa* /*lakāwa*/; additionally, the ^Blyāka-type can be neatly compared with the Tocharian A imperfect of the type ^Alyāk ‘saw’.

³⁰⁶ The lack of cognate formations of the causative aorist in Iranian speaks quite strongly against an inherited formation, so the Indic causative aorist can only be typological parallel, not a cognate formation (Jamison 1983: 217; Harðarson 1997: 98; Kim 2003: 218 fn. 56).

development happened in pre-Proto-Tocharian, as pointed out by Kim (2003: 221). However, Harðarson (1997: 100–1) presents evidence, especially from Greek and Sanskrit, that the reduplicated present had a tendency to be transitive-factitive. The historical core of the reduplicated preterite in Tocharian would therefore not be a single verb (**ġenh₁-*), but several verbs.

At the same time, it is hard to exclude that some Proto-Indo-European reduplicated aorists with transitive meaning are hiding in the Tocharian prt.[2]. If we take the Greek aorist ἔτετε ‘found’ seriously as a cognate to PT **təm-* ‘be born’, the reduplicated causative preterite stem *^tatämšā-* might represent this formation. This approach would actually help explain how an original Proto-Indo-European imperfect became a Proto-Tocharian preterite, which otherwise seems to have been a rare occurrence: the two stems could have been conflated and the imperfects reanalysed as aorists.³⁰⁷

The issue of the lack of (primary) palatalisation in *^kakām*, *^kyāna*, raised by Malzahn (2010: 184–5), is not solved by this approach and remains a problem. Perhaps influence from the intransitive perfect could be imagined since both stems were reduplicated, but it is difficult to understand why palatalisation would be given up in this verb, when it functioned as a semantic indicator in several other verbs. Nevertheless, by deriving prt.[2] from reduplicated presents and aorists we can understand the paradigms of *^kən-*, *^kän-* ‘occur’ and *^təm-*, *^täm-* ‘be born’ and why they depart from that of, e.g., *^pək-*, *^päk-* ‘cook’. In *^kən-*, *^kän-* ‘occur’, the reduplicated preterite was found in opposition to a full intransitive stem pattern and needed a way to form the present and subjunctive stems. These were provided by the causative pattern, rather than the s-transitive pattern, for the simple reason that the preterite was of class [2], not class [3].

As for *^təm-*, *^täm-*, if we accept the etymological link between PT **təm-* ‘be born’ and Greek ἔτετε ‘found’, we can explain both the meaning and the stem pattern through convergence with PT **kən-* ‘occur’. The semantic development suggested by the LIV (2001: 624 fn. 1, “erreichen” ⇒ ‘zustande bringen’ ⇒ ‘erzeugen’, i.e. ‘reach, achieve’ ⇒ ‘make happen’ ⇒ ‘produce, beget’) is plausible, and considering the meaning of **kən-*, which must have been undergoing the opposite development (‘be born; produce’ ⇒ ‘occur, happen; fulfil, achieve’), mutual interference at an

³⁰⁷ On the other hand, since there is no evidence for the original present stem of **tem-*, it cannot be excluded that *^tatämšānt* also reflects a reduplicated imperfect. This solution, however, would leave us without any stem cognates in other Indo-European languages and make the link to Gk. ἔτετε ‘found’ more tenuous.

intermediary stage seems likely.

Since the Proto-Indo-European starting point for **tem-* is practically unknown to us in terms of stem formation, its exact route into Tocharian is obscure. The reduplicated prt.[2] could certainly be interpreted as a cognate stem to Gk. ἔτετμε ‘found’. Perhaps it also had some of the prerequisites to participate in the intransitive pattern from the beginning (a perfect, middle **e/o-* or **ie/o-*present, a nondental ‘stative’). Alternatively, it could have received the intransitive paradigm (**tām’atār*, **tāmetār*, **temte*) very early in opposition to the inherited transitive and in analogy with **kən-*.

As Tocharian A and Tocharian B show different words for ‘die’ (^B*srāwka-* ‘die’), it is difficult to assess the time depth of the creation of the paradigm of **wāl-*. If the verb goes back to **uelh₃-*, the Proto-Indo-European nasal present must be continued in Tocharian A with restructuring of the suffix and loss of *a*-character: **-na-* → **-nə-sk’ə/e-* (Hackstein 1995: 302). As suggested by Malzahn (2010: 893), it is likely that the stem pattern of **wāl-* was remodelled after its antonym **tām-* at some point. It is possible that the verb was still transitive in Proto-Tocharian and only decreased in valency in pre-Tocharian A, where *nās*-presents of class [10] were linked to intransitivity. From that point, it could receive an *e*-subj.[3] on analogy with pre-TA **tām-* ‘be born’. In lieu of the recessive root prt.[0], a new active s-prt.[3] could have been created, as voice was no longer a meaningful marker of valency.

4.4.4. Conclusions

The main conclusion of this and the previous two sections (4.2–4.4) is that the stem patterns especially associated with the *e*-subj.[3] and the Tocharian A root prt.[0], while indeed being archaic in the Tocharian verbal system, need not reflect a special archaism within Indo-European. Instead, the hypothesis above embeds the Tocharian verb within a traditional model of Proto-Indo-European verb by incorporating several inherited formations, e.g., the **ie/o-*present, the nondental middle, the finite perfect. Each of these stem formations in the proto-language fits their Tocharian counterpart functionally and formally with—in my opinion—only a modicum of necessary assumptions.

The diachronic analysis thus yields a negative result with regard to the cladistic question, i.e., whether the stem pattern with an *e*-subj.[3] and a root prt.[0] is a Tocharian archaism compared with CIE. However, there can be no doubt that the stem pattern is archaic within Tocharian, and by studying it, new insights about the development of the Tocharian verb have been achieved. The similarity in stem pattern in the verbs in question can be understood through coalescence due to the

similarity in semantics, root structure, and—to some degree—inherited stem formation. Importantly, the middle voice in the inherited present and subjunctive stems and the formal similarity between the Proto-Indo-European perfect and middle endings explains the aberrant use of voice within the Tocharian system as a marker of inchoativity in these Tocharian verbs.

One question which has yet to be addressed is the position of this limited group of verbs in relation to other inherited verbs with oppositional stem patterns. In Chapter 3, some other verbs were discussed that seem to have been inherited into Tocharian with very similar sets of stems. To name one instance, **ueig-* ‘move away (from)’ formed an intransitive **e/o*-present, a root aorist and a perfect, like e.g., **leuk-* ‘light up’ and **nem-* ‘bow’. Yet, these verbs were not incorporated into the *e*-subj.[3] – root prt.[○] pattern, but form oppositional stem pattern pairs with *e*-prs.[3]-intransitives and *s*-transitives. This discrepancy must be explained and will be treated in subsection 4.6 below.

4.5. The competing subjunctives theory

With the conclusion of the first topic of this chapter, it is time to treat the second one: the development of the simple thematic presents from the point of view of the presigmatic aorist theory (see 4.1). According to Jasanoff (1998; 2003: 224–7), some verbs formed asigmatic simple thematic subjunctives to presigmatic aorists in the proto-language (the **uég^heti*-type). He (1998: 312) suggests that to this type of aorist, a competing sigmatic subjunctive, exemplified by **pék^w-se/o-*, was created in the proto-language before Anatolian branched off.³⁰⁸ The two subjunctives had different fates in Tocharian and CIE. In Tocharian, the **se/o*-stem became a present, while the **e/o*-stem continued in its role of subjunctive. In CIE, however, the *s*-subjunctive won out as a subjunctive, probably because the presigmatic aorist to which it belonged, was also being sigmatised. As a result, the **e/o*-stem was pushed into the present.

Thus, Jasanoff proposes a morphological innovation for the CIE languages, namely the reanalysis of the entire category of **e/o*-subjunctives to presigmatic aorists with inchoative-causative alternation as presents, explaining why we find **e/o*-presents next to *s*-aorists in certain CIE verbs. If established, this would be a

³⁰⁸ He reconstructs this formation through indirect evidence of the so-called **si*-imperatives in Hittite (Jasanoff 2003: 182–4; 2019b: 22–4), but see Oettinger (2007) and Søbørg (2020: 193–5).

highly context-dependent innovation and therefore constitute a significant piece of morphological evidence; see 1.2.1. In this section, I will refer to this theory of the origin of some of the simple thematic presents in CIE as ‘the competing subjunctives theory’.

The starting point for testing this hypothesis is to look at verbs which formed presigmatic aorists according to Jasanoff, to see whether they show the pattern predicted by the proposal in Tocharian: [8 – 2 – 3], i.e. PT **ṣa/se-prs*. [8], **ʾa/e-sbj*. [2], and *s-prt*. [3]. From the data in subsection 4.2.1, it is clear that the group of verbs with inchoative-causative alternation, *e*-subjunctives of class [3] (suffix ^B-*e*-, ^A-*a*-) and root preterites of class [o] in Tocharian A mostly do not. Only one verb that forms a Tocharian *e*-sbj. [3] also forms a thematic subjunctive of class [2] and only in Tocharian B: ^B*lwk*- ‘light up’. This is acknowledged by Jasanoff (1998: 312), who proposes that the thematic stem, e.g., **pék^we/o-*, was lost within Tocharian in the bivalent type.

The question is whether the pattern [8 – 2 – 3] must be explained this way, or if it can be accounted for differently. In the handbooks by Krause (1952: 77, 79) and Krause & Thomas (1960: 206), it is postulated that the pattern with the *ʾa/e-sbj*. [2] belongs to the “echte Kausativa” (Kl. VIIIb in their classification), that is, the *s*-transitive verbs found in opposition to intransitive verbs of the same roots. Thus, according to Krause & Thomas, the pattern [8 – 2 – 3] is in complementary distribution with the pattern [8 – 1 – 3], which they propose is only found to *s*-transitives without oppositional intransitives (“nichtkausative”, Kl. VIIa in their system). This idea, however, was thoroughly refuted by Hackstein (1995: 147–58), who shows that the rules of the distribution set up by Krause & Thomas are internally contradictory and that the formation of the subjunctive stem is not predicted by the existence of an oppositional intransitive.

Still, it is an interesting question why some verbs form an *ʾa/e-sbj*. [2], while others form a root sbj. [1], in stem patterns that are otherwise the same. The purpose of this section is to investigate the verbs with [8 – 2 – 3] to see if any other distributional pattern is present. If so, it may have a bearing on the origins of the pattern and could help us test the morphological isogloss proposed by Jasanoff. If the competing subjunctives theory cannot be upheld, we must try to explain the origins of the [8 – 2 – 3] pattern another way. In 4.5.1–4.5.3, all verbs that show this pattern are collected and analysed to see if a synchronic distribution can be established. If so, it may reveal something about the origins and productivity of the pattern [8 – 2 – 3]. In 4.5.5, the implications of the data for the competing subjunctive theory are discussed.

4.5.1. The *s*-transitive pattern with a thematic 'ə/*e*-sbj.[2]

The basic tenet of the competing subjunctive theory is that the Tocharian 'ə/*e*-sbj.[2] and *s*-preterite developed from the same aorist paradigm (from the subjunctive and indicative, respectively). The 'ə/*e*-subjunctive of class [2] is a very frequent stem class in Tocharian B, but this is primarily because of the prevalence of the stem pattern with an 'ə/*e*-prs.-sbj.[2] and an *a*-prt.[1]. Verbs that inflect according to this pattern come primarily from old *sk*-presents or other complex thematic stems; see Peyrot (2013a: 165). They are not relevant to the discussion at hand. Besides this type, the majority of simple thematic subjunctive stems are found next to *s*-preterites of class [3], indicating a relationship of some kind. In order to understand this relationship, we must start with a synchronic analysis of the data.

In Table 4.11, I have compiled all verbs that show evidence of the pattern *s*-prs.[8], 'ə/*e*-sbj.[2], *s*-prt.[3] in either Tocharian A or Tocharian B to see how they behave. This pattern is dubbed *s*-transitive regardless of whether they stand in opposition to intransitive or causative verbs. They are organised according to root structure (see below). The meaning of the *s*-transitive is given, as well as the stem pattern of any given intransitive and causative verbs that the roots form. There are some very clear tendencies in the verbs in Table 4.11, especially in Tocharian B. The Tocharian A data is more tricky, due to lack of attestation and the merger of *s*-prs.[8] and *sk*-prs.[9]. Nevertheless, the Tocharian A data supports the Tocharian B situation to a large degree.

First of all, the root structure of the verbs with an 'ə/*e*-sbj.[2] and a *s*-prt.[3] is remarkably uniform: the vast majority of roots have a weak vowel, *a*, *əy* or *əw* (realised *i* and *u*); the ones with simple *a* have a cluster consisting of a resonant or a nasal plus a stop. In the following, I will use the shorthands *CəRC*- and *CəWC*- for these roots structures.³⁰⁹ For this reason, the roots are organised according to root structure in the table. There are two verbs that show a root structure *CVC*- and have an 'ə/*e*-sbj.[2]: ^B*tsəm*- and ^A*kāw*- 'kill'. The latter verb is the only one with a full vowel in the root. Due to this relatively clear pattern, I think that root structure is a potential key factor for the distribution of the pattern [8 – 2 – 3]. In order to see if root structure actually is predictive with respect to the *s*-transitive stem pattern that individual verbs form, we must also take a look at the stem pattern [8 – 1 – 3]. If the distribution of stem patterns is complementary, we would expect to find no verbs with the pattern [8 – 1 – 3]. This will be explored in 4.5.4.

A second tendency in the data in Table 4.11 is that the majority of the presents

³⁰⁹ *R* = resonants and nasals, *W* = glides *y* and *w*.

found next to an *'ə/e*-sbj.[2] and an *s*-prt.[3] are *s*-presents of class [8]; there are only three verbs that form a different present, and in all three cases, it is an *sk*-prs.[9]: ^B*trenk*- 'adhere', ^A*tsärk*- 'torment' and ^B*ləwt*- 'expel; go away'. Finally, we may observe that all oppositional intransitive verbs attested in Tocharian B form an *e*-prs.[3]. However, since the *e*-prs.[3] and the *o*-prs.[4] are in near-complementary distribution depending on their root vocalism (Malzahn 2010: 367–71), it is possible that the formation of the *e*-prs.[3] in the roots in Table 4.11 is merely a result of the root structure *CaRC*-.

Because of the homogeneity of the data, it is worth considering whether the root structure tendency is strong enough to be predictive with regard to the formation of a stem pattern with *'ə/e*-sbj.[2] and *s*-prt.[3]. To determine that, we have to investigate the possible counterexamples. Before I do that in subsection 4.5.4, I will discuss the cases in which the attested subjunctive forms are ambiguous or point to several subjunctive classes (4.5.2) and the cases where Tocharian A differs from Tocharian B (4.5.3).

Table 4.11: Tocharian verbs with s-prs.[8], 'ə/e-sbj.[2], and s-prt.[3]

	s-tr. meaning	s-tr.	itr.	caus.
^B <i>kaw-</i>	'kill'	[8 – 1 – 3]		
^A <i>kāw-</i>	'kill'	[8 – 2 – 3]		
^B <i>tsəm-</i>	'increase'	[8 – 1 or 2 – 3]	[3 – 5 – 1]	
^A <i>tsäm-</i>	—		[4 – 5 – 1]	[8 – 9 – 2]
^B <i>trəyk-</i>	'err'	[8 – 2 – 3]	[3 – 5 – 1]	[9 – ? – 2]
^A <i>träyk-</i>	'err'	[8 – 2 – 3]	[3 – 5 – 1]	(PP)
^B <i>wəyk-</i>	'avoid'	[8 – 2 – ?]	[3 – 5 – 1]	[9 – 9 – 2]
^A <i>wäyk-</i>	—		[3 – 5 – 1]	[8 – 9 – 2]
^B <i>ləwk-</i>	'light up (tr.)'	[8 – 2 – 3]	[8 – 3 – 3]	
^A <i>läwk-</i>	'light up (tr.)'	[8 – ? – 2 or 3]	[? – ? – 0]	
^B <i>plənk-</i>	'sell'	[8 – 2 – 3]	[3 – 5 – 1]	
^B <i>krəmp-</i>	'disturb, hinder'	[8 – 1 or 2 – 3]	[3 – 5 – 1]	
^A <i>krämp-</i>	'disturb' ?	[8 – ? – ?]	[? – 5 – 1]	
^B <i>yərp-</i>	'observe'	[8 – 2 – 3]		
^B <i>šərp-</i>	'point out'	[8 – 2 – 3]		
^A <i>šärp-</i>	'point out'	[? – 7 – ?]		[8 – 9 – 2]
^B <i>spərk-</i>	'get lost'	[? – 2 – ?]	[3 – 5 – 1]	[9 – 9 – 2]
^A <i>spärk-</i>	'get lost'	[? – 1? – 3]	[? – 5 – 1]	[8 – 9 – 2]
^B <i>təlp-</i>	'purge'	[? – 2 – ?]	[? – 5 – ?]	
^B <i>pəlk-</i>	'burn, torment'	[8 – 2 – 3]	[3 – ? – ?]	
^A <i>pälk-</i>	'torment'	[? – 2 – ?]		[8 – ? – 2]
^B <i>pəyl-</i>	'listen closely'	[8 – 1 or 2 – ?]		

(Malzahn 2010: 66–71, 519–1000 s.v.; Peyrot 2013a: 720–847 s.v.)

The stems are indicated in this manner [prs. – sbj. – prt.]. See 1.5.1.

? in a stem slot indicates missing data, ? after a class number indicates uncertain analysis.

4.5.2. Verbs with ambiguous subjunctives

In Tocharian B, there are three s-transitive verbs that forms a subjunctive which could either be a root sbj.[1] or an 'ə/e-sbj.[2]: ^B*krämp-*, ^B*pəyl-* and ^B*tsəm-*. The first is ^B*krämp-* 'disturb, hinder', to which an infinitive is attested twice in the same context.

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*klesänmaşši sañi šek kräm̐tsi_{inf.}*³¹⁰ *preke* :

"It is time who always **hinders** the *kleşa*-enemies"³¹¹

Since neither *m* nor *p* can show palatalisation in Tocharian B, it is not possible to tell whether this infinitive reflects an athematic stem **krämp-tsi* or a thematic stem **krämp-ə-tsi* (Hackstein 1995: 150). If the root structure truly is predictive, we can cautiously assume that ^B*kräm̐tsi* reflects an 'ə/e-sbj.[2]; at least, *kräm̐tsi* offers no counterexample to the possible prediction. The same is true for ^B*pəyl-* 'listen closely', attested once in the subjunctive: *pilträ* (THT1543.g a2), which can reflect a root sbj.[1] or an 'ə/e-sbj.[2] if the root-final *-l-ə-* was depalatalised before *-t-* as in prs.mid.3sg. *kalträ* 'stands' to ^B*kəḷ-* (Malzahn 2010: 713).

The verb ^B*tsəm-* 'increase' likewise attests an infinitive ^B*tsam̐tsi* (IOLToch210 b4, b5, IOLToch247 a6; ^B*tsäm̐tsi* is found once in THT240 a2) as well as a sbj.mid.3sg. *tsam̐trä* 'will increase' (PKNS54 a1).³¹² Since both forms would take the *-ə-*formant if formed to a thematic stem, there is no way to determine the stem class. As described in 3.4.4, Tocharian A and Tocharian B do not agree on the present stem formation of the intransitive verb: *e*-prs.[3].3sg. ^B*t̐smetär*, but palatalised *a*-prs.[4].3pl. ^A*śamantär*. Without a diagnostic form in the transitive subjunctive, it is difficult to interpret the stem pattern properly, but if we assume that root structure is predictive, we would not expect ^B*tsəm-* to form an 'ə/e-sbj.[2].

The verbs with ambiguous subjunctives in this subsection present no counterevidence to the proposal that root structure plays an important role in the formation of 'ə/e-subjunctives of class [2] in s-transitive paradigms. We must wait for diagnostic forms to determine the formation of their subjunctive.

³¹⁰ Archaic spelling for classical ^B*krām̐tsi* /krām̐tsi/.

³¹¹ See Krause (1952: 33): "Es ist Zeit, daß die *kleşa*-Feinde ständig gehemmt werden".

³¹² The second form finite *tsäm̐tär-ne* (PKNS54 a2) cited by Hackstein (1995: 137) and Malzahn (2010: 985) should rather be read *t̐smāntär-ne*, i.e., an *a*-sbj.[5] mid.3pl. of the intransitive verb (Peyrot 2013b: 234).

4.5.3. Discrepancies in Tocharian A

Tocharian A does not show the same distribution as Tocharian B. First of all, there are much fewer verbs that form 'ə/e-subjunctives of class [2]. In Table 4.11, there are only two verbs that show a full *s*-transitive paradigm with an 'ə/e-sbj.[2], ^A*träyk*- 'err' and ^A*kāw*- 'kill' (see below), and one for which we can infer a pattern [8 – 2 – 3] on the basis of Tocharian B, ^A*pālk*- 'torment'. Besides these, only 6, possibly 7, verbs form 'ə/e-subjunctives of class [2] in Tocharian A.³¹³

Secondly, there are two instances where the *s*-transitive shows a different subjunctive stem than class [2]. According to Malzahn (2010: 970), the two broken forms *špärkä*/// in A234 a4 and a5 should be classified as root subjunctives of class [1]: act.3sg. *špärkä*(š). This could, however, also be analysed as an *s*-present; see Peyrot (2013a: 839). Unfortunately, the text is too fragmentary to give any contextual clues to the meaning. The reason for the initial palatalisation is somewhat unclear, but it is found elsewhere in Tocharian A, i.e., the subjunctive of the related causative verb: vn. ^A*špärkāšlune*. Since we also find it in thematic subjunctive in TB act.3sg. ^B*šparśam*, 3pl. ^B*špärkem*, one might speculate that this is the original locus of the palatalisation which then later spread; compare 'ə/e-sbj.[2].mid.3sg. ^B*lyuštār* 'lights up'. If ^A*špärkä*(š) indeed belongs in the subjunctive, it may have replaced the Proto-Tocharian thematic subjunctive.

^A*šärp*- 'point out' forms a *ñ*-sbj.[7]: opt.act.1sg. ^A*šärpñim* (A217 b7) 'should indicate'. Next to it, a causative verb is attested with no discernible semantic difference. Tocharian A subjunctives of class [7] with the thematic *-ñä/e*-suffix correspond to an overwhelming degree to Tocharian B root subjunctives of class [1] and must have systematically replaced this type within Tocharian A (Hilmarsson 1991a: 72–3). This, however, does not mean that the subjunctive replaced by ^A*šärpñim* was necessarily a root sbj.[1]. The 'ə/e-sbj.[2] is also a very recessive category in Tocharian A, and in light of the Tocharian B form, we should probably reconstruct a *'ə/e-subjunctive for Proto-Tocharian (Peyrot 2013a: 596).

Finally, there is one verb, running counter to the two verbs above, that shows an *s*-transitive paradigm with 'ə/e-sbj.[2] in Tocharian A, but a root sbj.[1] in Tocharian B: ^A*kāw*-, ^B*kaw*- 'kill'. The attested subjunctive forms in Tocharian A are: act.3sg.-obj.2sg. *kośši* (< **koš-ci*), 3pl. *kāwe*, *kāwe(ñc)*, and vn. *kolune*. The analysis of the Tocharian A subjunctive is disputed. The 3sg. form and the abstract noun are

³¹³ The other verbs that form an 'ə/e-sbj.[2] in Tocharian A are: *k'äm*- 'come', *yām*- 'do', *lä(n)t*- 'emerge', *kläyn*- 'be necessary', *weñ*- 'speak', *en*- 'instruct', and perhaps *ākl*- 'teach (act.); learn (mid.)' but see Peyrot (2013a: 720 fn. 4).

ambiguous and could also reflect a root *sbj.[1]*. The 3pl. forms, however, show the thematic ending *-eñc*. Since this is the only unambiguous ending, Peyrot (2013a: 728–9 fn. 64) interprets the stem as an *ʔ/e-sbj.[2]*. Malzahn (2010: 607) interprets the stem as a root *sbj.[1]* with secondary replacement of the athematic ending *-iñc* by *-eñc*; see also Carling & Pinault (2023: 111). There is a parallel to this change in the verb ^A*āy-* ‘give’, in which the act.1sg. *em* indicates an athematic stem of class [1], while the act.3pl. *āyeñc* indicates an *ʔ/e-sbj.[2]*; see the discussion by Hackstein (1995: 151–2). In the absence of evidence of the athematic stem of ^A*kāw-* in Tocharian A, we should follow the positive evidence and posit an *ʔ/e-sbj.[2]* for Tocharian A, as also pointed out by both Hackstein and Peyrot. That being said, it seems highly likely that the Tocharian A *ʔ/e-sbj.[2]* is recent and may just be restricted to the act.3pl.

Summarising the TA data that contradicts the Tocharian B stems, there is no compelling evidence that Tocharian A continues an archaic state in any of the verbs discussed. For ^A*spärk-*, there is circumstantial evidence for an old thematic subjunctive in the root-initial palatalisation, for ^A*šärp-*, the subjunctive is innovative and has obscured the original situation, and for ^A*kāw-*, the evidence that it formed an *ʔ/e-sbj.[2]* is shaky and an original root *sbj.[1]* in Proto-Tocharian is more likely, based on the Tocharian B evidence. In the next subsection, the verbs that may provide counterevidence to the notion that the root structure *CəRC-* is a predictive feature for the *s*-transitive with *ʔ/e-sbj.[2]* will be discussed.

4.5.4. The *s*-transitive pattern with a root *sbj.[1]*

In the previous two subsections, I have argued that the two verbs that may show evidence of the *s*-transitive pattern with *ʔ/e-sbj.[2]*, but have a root structure other than *CəRC-* and *CəWC-*, namely ^B*tsəm-* ‘build, grow’ and ^A*kāw-* ‘kill’, do not present counterevidence to the possibility that root structure predicts whether a verb forms an *s*-transitive with a root *sbj.[1]* or with an *ʔ/e-sbj.[2]*. However, in order to test the prediction, we must not only look at the pattern [8 – 2 – 3], but also its counterpart, the *s*-transitive pattern with a root *sbj.[1]*. If there are roots with *CəRC*-structure that form *s*-transitives of the pattern [8 – 1 – 3], there is no complementary distribution between the root *sbj.[1]* and the *ʔ/e-sbj.[2]* in this context, and the root structure is in that case not predictive.

In Table 4.12, I have compiled all *s*-transitives with *s*-prs.[8], root *sbj.[1]* and *s*-prt.[3]. They are organised according to root structure and any oppositional intransitive and causative verbs are given next to them, just like in Table 4.11. Verbs in root final *-tk-* and *-sk-* are excluded. The verbs with ambiguous subjunctive stems discussed in ^B*tsəm-*, ^A*tsäm-* and ^B*krəmp-*, ^A*krämp-* are also listed in Table 4.12

Table 4.12: Tocharian verbs with s-prs.[8], root sbj.[1], and s-prt.[3]

	s-tr. meaning	s-tr.	itr.	caus.
^B ar-	‘abandon’	[8-1-3]	[4-5-1]	
^A ār-	‘abandon’	[8-7?-?]	[4-5-1]	(PP)
^B er-	‘evoke’	[8-1-3]		
^A ar-	‘evoke’	[8-7-3]		
^B nak-	‘blame’	[8-1-3]		
^A nāk-	‘blame’	[8-7-3]		
^B kaw-	‘kill’	[8-1-3]		
^A kāw-	‘kill’	[8-2-3]		
^B plak-	‘agree (act.); ask permission’	[8-1-3]		
^A plāk-	‘ask permission’	[?-?-3]		
^B tsak-	‘glow’	[8-?-3]		
^A tsāk-	‘glow’	[8-1-3]		
^B kəl-	‘bear (act.); drive (mid.)’	[8-1-3]		
^B käl-	‘bear’	[8-?-2]		
^B rək-	‘extend over (tr.)’	[8-1-3]	[?-5-?] ^α	
^A räk-	‘extend over (tr.)’	[?-?-3]		
^B rəw-	‘open (tr.)’	[8-1-?]		
^A räw-	‘open (tr.)’	[8-?-?]		
^B tsəm-	‘increase’	[8-1 or 2-3]	[3-5-1]	
^A tsäm-	—		[4-5-1]	[8-9-2]
^B nək-	‘destroy’	[8-1-3]	[8-3-3]	
^A näk-	‘destroy’	[8-1-3]	[10-3-0]	
^B pək-	‘cook, make ripen’	[8-1-?]	[8-3-3]	
^A päk-	‘cook, make ripen’	[8-?-?]	[10-3-0]	
^B tsək-	‘burn (tr.)’	[8-1-3]	[8-3-3]	
^A tsäk-	‘burn (tr.)’	[8-?-?]	[10-3-0]	

^B <i>prək-</i>	‘ask’	[8 – 1 – 3]		
^B <i>präk-</i>	‘ask’	[8 – 1 – 3]		
^B <i>pləw-</i>	‘float, soar’	[8 – 1 – 3]		[9 – 9 – ?]
^A <i>pläw-</i>	‘float, soar’	[1 – ? – 1]		
^B <i>krəmp-</i>	‘disturb, hinder’	[8 – 1 or 2 – 3]	[3 – 5 – 1]	
^A <i>krämp-</i>	‘disturb’ ?	[8 – ? – ?]	[? – 5 – 1]	
^B <i>rənk-</i>	‘raise, lift’	[8 – 1 – 3]	[? – 5 – 1]	
^B <i>lənk-</i>	‘hang (tr.)’	[8 – 1 – ?]	[1 – ? – ?]	[9 – ? – ?]
^A <i>länk-</i>	‘hang (tr.)’	[8? – 7? – ?]	[1 – 7? – ?]	[8? – ? – ?]
^B <i>tsəwk-</i>	‘suckle’	[8 – 1? – 3]	[? – 5 – 1]	
^A <i>tsäwk-</i>	‘drink’		[S – 5 – 1]	
^B <i>tsənk-</i>	‘flay’	[? – 1 – ?]		
^A <i>tspänk-</i>	‘flay’	[8 – ? – ?]		

(Hackstein 1995: s.v.; Malzahn 2010: 66–71, 519–1000 s.v.; Peyrot 2013a: 720–847 s.v.)

The stems are indicated in this manner [prs. – sbj. – prt.]. See 1.5.1.

? in a stem slot indicates missing data; ? after a class number indicates uncertain analysis; S = suppletive stem.

^α If this intransitive paradigm belongs with the *s*-transitive, the *a*-sbj.[5] stem has an unexpected full vowel in the root: ^B*raka-*, opt.mid.3pl-obj.1sg. *rākoyentär-ñ* (THT271 a1). This may be matched by a preterite participle *rarākau* (THT565 a5); see Peyrot (2013a: 358 fn. 453, 801).

Table 4.12 shows a much different situation to that of Table 4.11. There are much fewer *s*-transitives with an *ʾə/e*-sbj.[2] than with a root sbj.[1]; disregarding the ambiguous cases ^B*tsəm-* and ^B*krəmp-*, there are 18 verbs that form *s*-transitives of the type [8 – 1 – 3] in one or both of the two Tocharian languages, while there are 11 verbs that form *s*-transitives of the type [8 – 2 – 3].

It also worth noting that fewer roots with *s*-transitives of the type [8 – 1 – 3] also form an intransitive verb, and these intransitives are more diverse than the intransitives formed next to *s*-transitives with *ʾə/e*-sbj.[2]. If we disregard the uncertain intransitive ^B*raka-* attested next to ^B*rək-* ‘extend over’ (see n. α in Table 4.12) and the ambiguous ^B*tsəm-* and ^B*krəmp-*, there are only 7 verbs out of 17 in Table 4.12

with an oppositional intransitive, 3 of which are the type TB [8 – 3 – 3], TA [8 – 3 – 0]. The other four are of various types, showing direct evidence of a root prs.[1] and an *o*-prs.[4], and indirect evidence of an *e*-prs.[3] due to the ablaut of the *a*-sbj.[5] and *a*-prt.[1] of ^B*rənk*- and ^B*tsəwk*- (Malzahn 2010: 815, 995). In the group of verbs with an *ə/e*-sbj.[2] (Table 4.11), there are also 7 verbs that form oppositional intransitives, meaning that the proportion of verbs that form intransitives is bigger in this group. Besides ^B*ləwk*- ‘light up’ that forms an oppositional intransitive with the pattern [8 – 3 – 3], an intransitive pattern [3 – 5 – 1] is either attested or can be inferred for the verbs in Table 4.11.

With regard to root structure, the verbs in Table 4.12 are also much less homogeneous than the verbs in Table 4.11; we find the pattern [8 – 1 – 3] in almost all possible root structures:

- VC-, e.g., ^B*ar*- ‘abandon’
- CaC-, e.g., ^B*nak*- ‘blame’
- CRaC-, e.g., ^B*plak*- ‘agree (act.); ask permission’
- CəC-, e.g., ^B*nək*-, ^A*näk*- ‘destroy’
- CRəC-, e.g., ^B*prək*-, ^A*präk*- ‘ask’
- CəRC- in ^B*rənk*- ‘raise, lift’
- And possibly CəWC- in ^B*tsəwk*- ‘suckle’ (see below).

For the purposes of this section (4.5), the latter two root types are the most important; if there are verbs with the root structure CəRC- and CəWC- that form *s*-transitives with a root sbj.[1], there is no complementary distribution between type [8 – 1 – 3] and [8 – 2 – 3] according to root structure.

There are two verbs with the structure CəRC- and one with the structure CəWC- that may form *s*-transitive verbs of the type [8 – 1 – 3]: ^B*rənk*- ‘raise, lift’, ^B*lənk*- ‘hang (tr.)’ and ^B*tsəwk*- ‘suckle’.

The meaning of ^B*rənk*- is somewhat debated, but the attested forms can probably be united in the meaning ‘raise, lift’. This fits the intransitive verb formed to the same root, ^B*rənkə*- [ʔ – 5 – 1], well, as the meaning there can be established as ‘ascend, climb up’ (Malzahn 2010: 815–6; Adams 2013: 575). For the attested presents, Ogihara (2009: 222–5) gives the meaning ‘build’, prs.act.3sg. *rañkṣām* (THT1459 a3) ‘builds’ and prs.ger. (*rä*)ñkṣalle (IOLToch112 a4) ‘to be built’, which could be a specialised meaning of ‘raise’. The subjunctive is only attested in one form, inf. *rañktsi* (ex. 112).

112 TB THT238 b3

/// *naintate*³¹⁴ *cimpyāsta-ṇñ apāyntameṇ kauc **raṇktsi***_{inf.} :

“... you could **raise** me up high out of the evil states”

Synchronically, the infinitive ^B*raṇktsi* must reflect a root sbj.[1]; the idea that infinitives to ^ʾ*e*-subjunctives of class [2] can show depalatalised root-final consonants before the infinitive suffix, advocated by Krause & Thomas (1960: 224), cannot be upheld (Hackstein 1995: 149; Malzahn 2010: 319). If root structure can predict which verbs form a root sbj.[1] and which an ^ʾ*e*-sbj.[2], then ^B*raṇk-* shows the “wrong” subjunctive. We must take it as a real counterexample to the prediction.

The intransitive verb formed to ^B*laṇk-* ‘hang’ was treated in subsection 3.3.1, where I argued that the root present of this verb looks archaic, both formally and semantically, compared to the simple thematic present found in other Indo-European languages. The *s*-transitive to this verb forms a *s*-prs.[8] in both Tocharian languages, TB prs.mid.3pl *läṅksentär*, TA prs.act.3sg. *läṅkäṣ*. In Tocharian B, this is matched by a root subjunctive of class [1]: sbj.act.1sg.-obj.2sg. *laṅkām-c* (ex. 113).³¹⁵ The form is clearly transitive, and its interpretation as a subjunctive is supported by its position in apodosis of a potential conditional (Peyrot 2013a: 311–2).

³¹⁴ If *naintate* should be read as one word, it should perhaps be amended to *naittate* ‘it broke down’, an *a*-prt.[1].mid.3sg. of the verb *naytta-* ‘collapse, break down’, which is otherwise only attested in the active voice. Alternatively, *naintate* is quite similar to loc.pl. *nraintane* ‘in the hells’ which would fit the context, but we would need to assume that an <r> was omitted through a scribal error. See Sieg & Siegling (1953: 141 fn. 15).

³¹⁵ The interpretation of the transitive verb stems in Tocharian A is debatable. Tocharian A attests a *ñ*-subjunctive of class [7], opt.act.1sg. *läññim* (A37 b3), which is typically taken as the functional equivalent of the Tocharian B root sbj.[1] in the *s*-transitive paradigm (Malzahn 2010: 840; Peyrot 2013b: 808). Carling & Pinault (2023: 399–400), however, interpret the form as intransitive ‘may I dangle’. The context, however, is too uncertain: *raṇ läññim kosne* /// “may I hang (obj.?) on ... as long as ...” (see CEToM, A37, ed. G. Carling & G.-J. Pinault, accessed 26 January 2024). As far as I know, there are no other examples of a *ñ*-sbj.[7] in Tocharian A in a stem pattern with a root prs.[1], so the traditional analysis, taking the Tocharian A *s*-prs.[8] and *ñ*-sbj.[7] as equivalents of the Tocharian B *s*-transitive, is preferable. For the causative Tocharian B *sk*-prs.[9] and the TA prt.ptcp. *lyalyänku* (A194 b2), see Peyrot (2013a: 809 fn. 749).

113 TB PKAS18A b2–b3

*tum(em) cai ostaññi nāksa^{b3}nte-ne skarāre-ne kampāl mā päst kalatar matsisa
kauc lañkām-c*_{sbj.act.1pl.-obj.2sg.}

“Then the householders reprimanded him and threatened him: “If you do not bring back the cloak, **we will hang you high up by your hair.**”³¹⁶

The s-transitive verb ^B*tsawk-* ‘suckle’ does not have a Tocharian A counterpart, but a cognate of the intransitive verb ^B*tsawka-* ‘suck’ [? – 5 – 1] is found in the stem ^A*tsäwkā-* ‘drink’ which provides the suppletive *ā*-sbj.[5] and *ā*-prt.[1] stem to ^A*yok-* ‘drink’. The evidence for positing a root sbj.[1] comes from an alleged gerundive ^B*tsukälle*, attested twice on the wooden tablet SIP139.d: nom.sg.? *tsukäle* (b col.iii 2), abl.sg. *tsukälememñ* (a3); see Lévi (1913: 320), Adams (1999: 740), Ching (2010: 327–8). As pointed out by Malzahn (2010: 995), the meaning of a gerundive to this word, ‘to suckle, to give suck’, is unexpected in a caravan travel passport; Ching cautiously suggests the meaning ‘nurse’, while Adams (2013: 809–10) suggests a lexicalised abstract meaning ‘fosterage’ (ex. 114).

114 TB SIP139.d a3

*purñāsä ñem śamaśkem tsukälememñ*_{ger.abl.} *tärkäte*

“(s)he let a boy called Purñāsä go **from his nurse/fosterage**”

Either meaning is conceivable, but if ^B*tsukäle* is a lexicalised form meaning ‘nurse’ or ‘fosterage’, its significance as a counterexample is limited. The productive subjunctive stem may be different. It is also possible that the form ^B*tsukäle* belongs to a different verb altogether. The grounds for positing a root sbj.[1] stem to ^B*tsawk-* are too uncertain.

Summarising the last three subsections (4.5.2–4.5.4), there are two unquestionable counterexamples to the prediction that roots form s-transitive patterns form a *’ə/e*-subjunctive of class [2] if they have the root structure *CəRC-*: ^B*rənk-* and ^B*lənk-*. Since there are quite a few uncertain or ambiguous forms in the data, it is possible that more counterexamples will be uncovered in the future, for instance if a diagnostic form of ^B*tsəm-* or ^B*krəmp-* appears. The evidence from ^B*tsawk-* is not strong enough to stand on its own, so it is possible that the root structure *CəWC-* can indeed be used to predict the pattern [8 – 2 – 3]. However, we

³¹⁶ See the edition, commentary and translation by Pinault (2008: 65–73): “Par suite, ces commensaux le blâmèrent [et] le menacèrent : « Si tu ne rapportes pas le manteau, nous te pendrons en haut par les cheveux. » ”.

should be quite cautious with making conclusions on the basis of three verbs (^B*lawk*- ‘light up’, ^B*trayk*-, ^A*träyk*- ‘err’, and ^B*wäyk*- ‘avoid’). As the current data stands, we may conclude that there is a very strong tendency in the data that the verbs that form the stem pattern [8 – 2 – 3] have the root structure *CāRC*- or *CāWC*-.

4.5.5. Consequences for the competing subjunctives theory

From the conclusion that the vast majority of verbs with the stem pattern [8 – 2 – 3] has the root structure *CāRC*- or *CāWC*-, we may start to interpret the results of the last four subsections (4.5.1–4.5.4) with special regard to the consequences for the competing subjunctives theory.

As discussed in 4.5.1 and 4.5.4, the verbs that form the pattern [8 – 2 – 3] are very homogeneous with regard to root structure, especially compared with the other pattern [8 – 1 – 3]. For one thing, in Table 4.11, it was clear that the predominant type of oppositional intransitive verb formed next to *s*-transitives with an *’ə/e*-subj.[2] has an *e*-present of class [3], and in general, the verbs with [8 – 2 – 3] are found more frequently in opposition to intransitives than verbs with *s*-transitives of the type [8 – 1 – 3]. These facts indicate that the pattern [8 – 2 – 3] has become productive in a limited part of the vocabulary, namely to verbs with the root structure *CāRC*- or *CāWC*-, especially if they form intransitives of the pattern [3 – 5 – 1]. The fact that the pattern was productive rather recessive, at least at a certain point in Tocharian prehistory, could in turn indicate that it was innovative within the branch.

This calls into question the explanation for the lack of thematic subjunctives of class [2] in the verbs that purportedly formed presigmatic aorists. If **nək*-, **pək*- started out with a transitive root subjunctive of class [1], we can understand why they did not replace that stem with an *’ə/e*-subjunctive of class [2], simply because their root structure was *CāC*- rather than *CāRC*-. If, however, they started out with an *’ə/e*-subj.[2] in their transitive stem pattern, it is not easy to see why this stem would have been replaced with a root subj.[1].

Secondly, the fact that a majority of the verbs that form the *s*-transitive [8 – 2 – 3] pattern also form intransitives with *e*-presents of class [3] poses a structural problem within the **h₂e*-conjugation framework. These verbs belong to a completely different class of **h₂e*-conjugation aorists, namely the stative-intransitive type (Jasanoff 2003: 163–5). This includes, e.g., **lawk*- ‘shine’, **wäyk*- ‘disappear’, **trayk*- ‘be confused, lost’. According to Jasanoff (2003: 171–3), this type formed a **h₂e*-conjugated aorist with **o/e*-ablaut in Proto-Indo-European (→ Tocharian *a*-subj.[5]) and a root stative-intransitive **CC*-or (→ Tocharian *e*-prs.[3] and *o*-prs.[4]). While these may potentially have formed an asigmatic thematic subjunctive **CēC-e/o*-,

there is no reason for a second sigmatic subjunctive to have been produced in these verbs, for the simple reason that they did not form sigmatic indicative stems. To summarise, the pattern predicted by Jasanoff does exist, but it is found in a different part of the verbal system than expected and ends up working against the hypothesis. In my opinion, this discrepancy should be considered direct counterevidence to the theory of the competing subjunctives as an explanation for the lack of simple thematic presents in Tocharian. The proposed isogloss, i.e. the two competing subjunctives and the difference in their treatment in Tocharian and CIE, cannot be substantiated, and in light of this, this area of verbal morphology does not provide evidence for the early separation of Tocharian.

The distribution of the [8 – 2 – 3] pattern has other consequences. It seems to have close ties with the intransitive paradigm with an *e*-prs.[3], an *a*-sbj.[5] and an *a*-prt.[1] (see Table 4.11) with which it forms oppositional pairs, often with the same type of semantic alternation that we find in the verbs with *e*-subjunctives of class [3] (suffix ^B-*e*-, ^A-*a*-) and root preterites of class [o] (type ^A*nakät*, ^B*neksate* ‘perished’). Interestingly, in the stem pattern associated with the inchoative *e*-sbj.[3] and root prt.[o], we also find both root subjunctives of class [1] and *ʔ*/*e*-subjunctives of class [2] in the oppositional functionally causative paradigm. Within the same realm of Tocharian morphology, we thus find several different strategies for expressing inchoative-causative alternation. From an Indo-European point of view, this is especially interesting since some of the verbs seem to have started out with a similar inflection in Proto-Indo-European, but have different stem patterns in Tocharian. In the following section (4.6), I will discuss possible reasons for the application of different strategies in the development of these stem patterns.

4.6. The distribution of stem patterns

In section 4.4, I proposed that some intransitive and transitive Proto-Indo-European roots, such as **pekʷ-* ‘cook’ and **nek-* ‘disappear, perish’, which had a similar root structure, influenced each other to such an extent that they ended up with the same stem pattern in Proto-Tocharian. Previous to that, in section 3.4, I proposed that several verbs found with intransitive stem patterns with *e*-prs.[3] and *o*-prs.[4] in opposition to *s*-transitive or causative stem patterns had Indo-European starting points that were very similar to **pekʷ-* ‘cook’ and **nek-* ‘disappear, perish’, for instance, **dem(h₂)-* ‘build; grow’ and **ueǵ-* ‘move away’. Yet, these roots do not inflect according to the stem pattern with *e*-sbj.[3] and root prt.[o]; nor do they form a present stem which shows intransitive meaning in the middle and transitive

meaning in the middle (see 3.7). Instead, they form an intransitive verb with the pattern [3 – 5 – 1] which alternates in all stems with an *s*-transitive with the pattern [8 – 1 – 3] or [8 – 2 – 3]. If the hypotheses presented in this thesis so far, concerning both the treatment of the individual verbs in 3.4 and 3.7 and the creation of the inchoative-causative alternating stem pattern with *e*-subj.[3] and root prt.[o] in 4.4, are to be accepted, it must be explained why verbs with relatively similar starting points were treated differently in the prehistory of Tocharian.

4.6.1. The productivity of [8 – 1 – 3] and [8 – 2 – 3]

In order to understand why inherited verbs ended up with different stem patterns to express the same or similar semantic alternations, we have to understand the processes behind the strategies. Part of the answer comes—in my view—from the tendency identified in section 4.5, namely that roots with verbs that form an *s*-transitive stem pattern [8 – 2 – 3] are overwhelmingly of the structure *CəRC*- and *CəWC*-. As I argued in 4.5.5, the distribution of the pattern [8 – 2 – 3] compared with the pattern [8 – 1 – 3] indicates that the former was productive at a certain point and as a result of that, it must be secondary in some verbs.

There is another point that supports the theory that the *s*-transitive [8 – 2 – 3] pattern is relatively recent: the near-absence of the pattern [9 – 2 – 3]. I follow the hypothesis by Peyrot (2013a: 515–24) that the Proto-Tocharian present of class [8] with the thematic suffix **-šə/se-* originated in a subset of verbs forming presents of class [9], **-šə/ske-*; see also Couvreur (1947: 62–3) and above (3.6). From that point of view, we may have expected to find the pattern [9 – 2 – 3] in some verbs, just like we find the pattern [9 – 1 – 3]. This is not the case, however. As can be seen in Table 4.13, the only verbs with an *sk*-prs.[9] and an *s*-prt.[3] that form an *ʔ/e*-subj.[2] also form a root subj.[1]: ^B*ləwt-* ‘expel (act.); go away (mid.)’, ^B*tsark-* ‘burn, torment’, and possibly ^B*trenk-* ‘adhere’. In light of this, it is quite likely that the *ʔ/e*-subj.[2] stems to these verbs are later creations, but the exact circumstances and mechanisms involved must be discussed in more detail.

Table 4.13: Table 4.12: Tocharian verbs with *s*-prs.[8], *ʔ/e*-sbj.[2], and *s*-prt.[3]

<i>s</i> -tr. meaning	<i>s</i> -tr.	<i>itr.</i>	<i>caus.</i>
^B <i>ləwt-</i>	‘expel (act.); go away (mid.)’	[9 – 1 and 2 – 3]	
^A <i>läwt-</i>	‘remove’	[8 – 7 – ?]	[? – 9 – ?]
^B <i>tsark-</i>	‘burn, torment’	[9 – 1 and 2 – 3]	
^A <i>tsärk-</i>	‘torment’	[? – 2 – ?]	
^B <i>trenk-</i>	‘adhere’	[9 – 1 and 2? – 3]	

Within the Couvreur-Peyrot hypothesis of the origin of the *s*-prs.[8], it is not just the pattern [8 – 2 – 3] that is an innovation. In the other *s*-transitive pattern [8 – 1 – 3], the present stem with the suffix **-ṣə/se-* was also created at a certain point. In 3.7.2 (starting p. 151), I argued that the verbs of the type **nək-* ‘perish; destroy’, **pək-* ‘cook’, **tsək-* ‘burn’, in which the *s*-prs.[8] was inchoative in the middle and causative in the active, were the ideal place of origin from which the stem pattern [8 – 1 – 3] could spread as an oppositional transitive. This cannot have been the only locus for the pattern [8 – 1 – 3]; we find it in non-oppositional verbs, some of which are inherited and probably also continue an older pattern [9 – 1 – 3], e.g., **prək-* ‘ask’. It is also important to keep in mind that—although they are traditionally classified as “*Kausativa*” opposite intransitive “*Grundverben*”—many *s*-transitive verbs are probably more original than their intransitive counterparts. Hackstein (1995: 154–8) has shown that many *s*-transitive verbs with either a root sbj.[1] or an *ʔ/e*-sbj.[2] correspond in valency with the Proto-Indo-European root they can be derived from and should be considered primary in a diachronic perspective.³¹⁷ Nevertheless, some *s*-transitive verbs must have been created secondarily. Within the theories about the various points of origin for the pattern [8 – 1 – 3] presented in this paragraph, this pattern had a strong basis for productivity as a transitive stem pattern, which explains why we find it to all root types in Tocharian.

The question is then where the pattern [8 – 2 – 3] comes from: neither verbal stems nor stem patterns arise *ex nihilo*. The absence of an equivalent pattern with an *sk*-prs.[9] instead of an *s*-prs.[8] indicates that the present stem plays an important role in the distribution of the pattern. In addition, it is important to note that a present of class [8] is not expected in at least three of the verbs forming *s*-transitives with *ʔ/e*-sbj.[2], according to conditions for the *s*-prs.[8] and the *sk*-prs.[9] laid out

³¹⁷ Similarly, Seržant (2014).

by Peyrot (2013a: 516–9). If ^B*yarp-* ‘observe’, ^B*šarp-* ‘point out’, and ^B*špark-* ‘get lost’ (see Table 4.11, p. 226) all formed an **sk*-present in (pre-)Proto-Tocharian, we would expect them to develop an epenthetic *ə* between the root-final and the suffix-initial clusters: *-rCsk-* > **-rCəsk-*. Peyrot (2013a: 518–9) only discusses this with regard to root-final clusters in final *-k-*, but I will assume that the phonological mechanism would work the same with a different stop. Likewise, it is plausible that roots with a final cluster *-lC-* would develop the same way, although there are no examples of this; if that is the case, we would expect an *sk*-present in ^B*pəlk-* ‘burn; torment’ as well. On the other hand, Peyrot (2013a: 519) proposes that roots ending in a nasal-initial cluster, *-NC-*, were exempted from this epenthesis as the nasal was homorganic with the following stop, making the cluster easier to pronounce. The *s*-present is therefore expected in ^B*plənk-* ‘sell’. The same is the case for ^B*trəyk-* ‘err’, ^B*wəyk-* ‘avoid’, and ^B*ləwk-* ‘light up (tr.)’ since they end in a single *-k-*.

It is likely that the stem pattern [8 – 2 – 3] came into being in a small subset of verbs from which it gained limited productivity. One promising candidate for membership in this subset would be PT **wəyk-* ‘avoid’ < PIE **ueig-* ‘move away (from)’. If the hypothesis outlined in 3.4.3 is correct, namely that the intransitive verb **wəyka-* is based on the root aorist of **ueig-* while the transitive verb **wəyk-* is based on an inherited simple thematic present, we can understand the limitation of root structure and the absence of the pattern [9 – 2 – 3] as two sides of the same coin. The most likely chain of developments is in my opinion the following:

- 1) A transitive *s*-preterite was created to serve as the preterite for the simple thematic present: prs. **ueig-e/o-* > **wəyk-’ə/e-* → prt. **weyk-Ø/sa-*. As discussed in 3.4.3, I can see two reasons why an *s*-preterite was chosen here. Firstly, a productive *a*-preterite was out of the question, since such a stem was already utilised in the intransitive preterite. Secondly, the *s*-preterite was used in other oppositional verbs to mark a transitive present, e.g., in **pək-* ‘cook (tr.)’.
- 2) Subsequently, the simple thematic present was pushed into the subjunctive by a productive *sk*-present: → [9 – 2 – 3] (Hackstein 1995: 136).³¹⁸ There was no inherited root subj.[1] to this verb as it did not form an *s*-aorist in Proto-Indo-European (whence the root subj.[1], see 2.1.3).

³¹⁸ Hackstein posits an inner-Tocharian **se/o*-present rather than a **ske/o*-present, but the principle is the same.

- 3) The *sk*-present developed into an *s*-present regularly, as **wəyk-* is a *k*-final root: → [8 – 2 – 3] (Peyrot 2013a: 516–7).
- 4) The pattern [8 – 2 – 3] became productive in roots with the same root structure, probably initially in other verbs that formed oppositional presents with *e*-prs.[3] parallel to **wəyk-* ~ **wəyka-*.³¹⁹

I would prefer to reckon with a situation that does not rely on a single verb. As the etymology of ^B*plānk-* ‘sell’ is uncertain,³²⁰ we cannot use it as input in the same way as **wəyk-*, but I do find it likely that similar circumstances would have been present for some roots in *-NC-* that form intransitive verbs with [3 – 5 – 1] next to transitives with [8 – 2 – 3]. Above, I mentioned the likelihood that *-lC-sk*-presents would develop in a parallel manner to *-rC-sk*-presents by developing an epenthetic vowel between the root and the suffix. However, lacking any evidence to that effect, we could also assume that *-lC-sk-* would simplify to *-lC-s-*, in which case, a root like ^B*palk-* ‘burn; torment’ may perhaps be added to the nucleus group of the [8 – 2 – 3] pattern.

The etymological background and interpretation of the other verbs of this type must be a topic for future study. Nonetheless, even if no other verbs can be positively identified as contributors to this pattern, the scenario outlined above on the basis of **wəyk-* is internally coherent and consistent with both the Tocharian and other Indo-European material.

Two final questions remain with regard to the relationship between the type **nək-* and the type **wəyk-* in pre-Proto-Tocharian. The first is why we find a verb with an *ʾə/e*-subj.[2] in the transitive paradigm in the first group, i.e., in **ləwk-* ‘light up’; the second is why the inchoative stems associated with the **nək*-type did not become productive, if the functionally causative stems did. These two questions will be discussed in the following two subsections (4.6.2 and 4.6.3).

4.6.2. The stem pattern of **ləwk-*

In a manner of speaking, the verb **ləwk-* has a foot in both camps with regard to stem pattern; it complies with the expected pattern related to the *e*-subj.[3] and root prt.[o],

³¹⁹ A final development in the specific case of **wəyk-* is the creation of a causative verb with a Proto-Tocharian *sk*-prs.-subj.[9] and a causative prt.[2] ‘remove; make disappear’.

³²⁰ See Pinault (1994a: 366–7) for a possible etymology connecting Lat. *liceō* ‘be for sale’ with a preverb **pe-*.

except in the transitive subjunctive where it forms a thematic subjunctive of class [2] in the middle voice; see Table 4.14. The middle inflection is unique in oppositional transitives to the *e*-sbj.[3] group, but it is found in the *s*-transitive in opposition to the *e*-prs.[3], at least in Tocharian B; cf. TB opt.[2] mid.3sg. *pałysıtār* (sic),³²¹ opt.[2] mid.1sg. *triśımar*.

Table 4.14: Stem patterns of ^B*lawk*-, ^A*läwk*-³²²

	itr. 'light up'		tr. 'light up'	
TB	prs.	[8] mid. 2sg. <i>lukstar</i>	[8] act. <i>luksäm</i>	
	sbj.	[3] mid. <i>lyuketär</i>	[2] mid. <i>lyuštär</i>	
	prt.	[3] mid. <i>lauksäte</i> ^α	[3] act. <i>lyauksa</i>	
TA	prs.		[8] act. <i>l_ukäş</i>	
	sbj.			
	prt.	[o] mid. <i>lyokät</i>	[3] act. <i>lyokäs</i>	
(Adams 2012: 30)				
^α With archaic spelling for ^B <i>lauksate</i> .				

In subsection 4.4.2, ^B*lawk*- was used as an example for the development of the intransitive verbs in the *e*-sbj.[3] – root prt.[o] stem pattern. This supposes that the original transitive subjunctive was one of class [1], as in, e.g., 1sg. ^B*neku*, 2sg. ^A*nakät* ‘will destroy’, inf. ^B*paksi* ‘to cook’, ^B*tsaktsi* ‘to burn’. However, the match between Ved. *rócate* ‘shines’ and ^B*lyuštär* ‘lights up (tr.)’ in stem formation and diathesis suggests that the thematic subjunctive is inherited.³²³ This is proposed both by Adams (1988: 50) and Hackstein (1995: 127) who propose that the inherited simple thematic stem

³²¹ See Malzahn (2010: 318).

³²² Malzahn (2010: 855–6), following Schmidt (1999: 281, 283), adds causative prt.[2] ^A*lyalyuk* ‘lit up’ (YQ2.1 a6) to the stem pattern, but this should rather be analysed as a variant of the preterite participle to the *s*-prt.[3] stem, ^A*lyalyuku** attested in the absolutive *lyalyukuräş* (YQ1.8 a2) (Ji, Winter & Pinault 1998: 68–9; Adams 2012: 28).

³²³ Hittite *lukki*-²²ⁱ ‘set fire to’ should be kept apart. For arguments on why the Hittite verb does not continue a simple thematic present, see Kloekhorst (2008: 532). For a discussion on whether this verb can continue the causative-iterative **CoC-éje/o*-type, see Sasseville (2021: 250–2).

was pushed into subjunctive function by a new sigmatic present.³²⁴ The idea is quite attractive, since that exact process seems to have happened in other verbs.

The problem with the suggestion is the discrepancy in transitivity between the Vedic and the Tocharian forms. In the stem pattern with *e*-sbj.[3] and root prt.[o], where voice is meaningfully distributed, it is difficult to see how an originally intransitive middle form could become transitive analogically. Rather, it is much more likely that the *'a/e*-sbj.[2] ^B*lawk-'a/e-* (mid.) was created secondarily, analogically to the *s*-transitive pattern with *'a/e*-sbj.[2]. The motivation for this could have been root structure. The verb **lawk-* 'light up' is the only verb that forms an *e*-sbj.[3] and a root prt.[o] which has the structure *CəWC-*. Analogy with **wayk-* and **trayk-* may have prompted the creation of **lawk-'a/e-*, replacing an earlier root sbj.[1]. While the glides are different, the verbal stems with full-vowels show diphthongs: compare *s*-prt.[3].act.3sg. *traiksa* 'erred' with *lyauksa* 'lit up'.

In this light, the middle inflection of **lawk-'a/e-* is not as aberrant, as there are other instances of *s*-transitive *'a/e*-sbj.[2] forms in the middle.³²⁵

4.6.3. Productivity of the *e*-sbj.[3] and the root prt.[o].

If the hypotheses about the productivity of [8 – 1 – 3] and [8 – 2 – 3] above (4.6.1) are to be accepted, the final question one must ask is why the inchoative paradigm found next to [8 – 1 – 3] in verbs like **nək-* and **pək-*, namely [8 – 3 – o], enjoyed no such productivity. I think three factors can be identified which seem to have acted as gate keepers for the *e*-sbj.[3] – root prt.[o] pattern: semantics, root structure, and present formation.

Starting with semantics, the meaning of the roots must have played an important role for the choice of strategy. The *e*-sbj.[3] (suffix ^B*e-*, ^A*a-*) and the root prt.[o] clearly mark inchoativity, not merely intransitivity. In comparison, the verbs that form *e*-prs.[3] and *o*-prs.[4] are not always inchoative; a few are not even intransitive; see Winter (1980a: 424–5), Carling (2003b), Malzahn (2010: 367–9). If the (pre-)Proto-Tocharian meaning of a given verb was intransitive, but not inchoative, it would not

³²⁴ The tentative suggestion by Hackstein (1995: 127), followed by Ringe (2000: 132) and the LIV (2001: 418–9 fn. 5), of an aorist subjunctive underlying both the Vedic and the Tocharian forms is somewhat uneconomical, since we would have to assume that the reinterpretation from aorist subjunctive to present happened independently in Indo-Iranian and Tocharian, only for it to be made into a subjunctive in Tocharian once more. Further, there is no other good candidate for a Proto-Indo-European present in the attested languages.

³²⁵ For instance, TB opt.mid.3sg. *pälyšitär* (THT20 b2, for expected *pälyšitär*).

have been incorporated into the *e*-subj.[3] – root prt.[o] pattern. There are some roots, however, to which the intransitive verb expresses a change of state without agency of the subject and the *s*-transitive verb introduces a causing agent of the action, for instance:

intransitive		s-transitive	
^B <i>palka</i> -, ^A <i>palkā</i> -	‘burn (itr.)’	^B <i>palk</i> -, ^A <i>palk</i> -	‘burn, torment’
^B <i>planka</i> -	‘be sold’	^B <i>plank</i> -	‘sell’
^B <i>krampa</i> -, ^A <i>krämpā</i> -	‘be disturbed’	^B <i>krämp</i> -, ^A <i>krämp</i> -	‘disturb, hinder’

Considering the near semantic identity of ^B*palk(a)*-, ^A*palk(ā)*- ‘burn (itr./tr.)’ and ^B*tsək*-, ^A*tsäk*- ‘burn (itr./tr.)’, we must look for other factors that could explain the distribution of stem patterns in these words.

One of these factors must be root structure. I have argued above that it was a very important feature for the spread of the *ə/e*-subj.[2] in the *s*-transitive pattern. It was also noted in 4.4.2 that the verbs with the pattern [8 – 3 – o] are very homogeneous. In that section, I also proposed that the complex of stems came together through coalescence, in part due to the formal similarity of the roots. It is possible that the pattern [8 – 3 – o] enjoyed some productivity at an early stage, but if so, it must have been limited to roots of the *CəC*-type. If it at some point came into competition with other strategies, such as intransitives with *e*-prs.[3] (suffix ^B*-e*-, ^A*-a*-) and *o*-prs.[4] (suffix ^B*-o*-, ^A*-a*-), it is likely that the latter types would have won out as they were formed to a more diverse range of roots.

Besides semantics and root structure, I think there is a third factor which could have allowed **nək*-, **pək*-, etc. to retain the stem pattern with *e*-subj.[3] and root prt.[o], while simultaneously preventing it from spreading, namely the use of voice alternation rather than stem alternation in the present. Because of this, the inchoative and causative meanings were anchored to the same stem. I proposed in 3.7.2 that original **e/o*- and **je/o*-presents merged and were replaced by a productive *sk*-present (→ *s*-present). As the present stem was a well-marked productive type, it may have prevented the wholesale replacement of the intransitive stems by the productive intransitive *e*-prs.[3] stem pattern—or at least slowed it down.

In the chronology of Tocharian, I think we must reckon with two waves of productivity with regard to expressing intransitive-transitive alternation. First, the early limited spread of the *e*-subj.[3] – root prt.[o] stem pattern. It seems likely that semantics and root structure could have prevented verbs from forming *e*-subjunctives of class [3] and root preterites of class [o]; if they did not have inchoative

meaning and the root structure *CəC-*, they could not be included in the type. After the productivity of the stem pattern with *e*-subj.[3] had ended, the stem patterns with *e*-prs.[3] (suffix ^B-*e-*, ^A-*a-*) and *o*-prs.[4] (suffix ^B-*o-*, ^A-*a-*) became the preferred method of forming oppositional intransitives—inchoative or otherwise. This scenario seems to me to be the simplest way of explaining the two strategies for expressing inchoative-causative alternation, as well as the limited, archaic-looking distribution of the *e*-subj.[3] – root prt.[o] type.

4.7. Chapter conclusions

This chapter had two goals. The first was to investigate the subjunctive stem of class [3] with the suffix ^B-*e-*, ^A-*a-*, the root preterite stem of class [o] (type ^A*naküt*) and the stem patterns associated with them, in order to assess whether the stem pattern constitute an archaic feature of Indo-European morphology (sections 4.2, 4.3, and 4.4). If it does, it would be potentially be a strong piece of evidence in favour of the Tocharian Second hypothesis, since it would show non-sigmatic middle forms in a paradigmatic relationship with *s*-aorists and also substantiate the notion that Proto-Indo-European verbs could have inherent inchoative-causative alternation marked only with voice.

Following Kortlandt (1994: 63) and to some extent Jasanoff (2003: 201–6), I reached the conclusion that the origin of *e*-subj.[3] can be found in the 3sg. of the so-called stative formation of Proto-Indo-European, i.e. 3sg. **CéC-o*, which received regular Tocharian middle endings: **CəC-e-tər*. The prt.[o], on the other hand, most likely goes back to the Proto-Indo-European perfect. The two stems became paradigmatically linked with transitive *s*-preterites and root subjunctives in the preterite and emerging subjunctive in certain verbs with both inchoative and causative meaning expressed by an alternation in voice in the present stem. The perfect, in particular, was reinterpreted as the middle equivalent of the *s*-preterite because of the similarity of their root vocalism and the resemblance of the inherited perfect endings to the middle endings. It is therefore not necessary to posit asigmatic middle forms to the *s*-aorist, *pace* Jasanoff (2003: 201–6).

Furthermore, I do not think that the *e*-subj.[3] – root prt.[o] pattern in Tocharian provides evidence that some Proto-Indo-European roots had inherent inchoative-causative alternation expressed primarily through voice, as proposed by Malzahn (2010: 56–7). Instead, it is more likely that stem alternations were used as the primary marker of the semantic difference, sometimes accompanied by voice. These stem alternations were inherited into Tocharian, but because they ran into both

phonological and morphological difficulties, repairs were made that in turn helped facilitate a much more regular system, leaving voice as the defining marker of inchoative-causative alternation.

The other subject treated in the chapter was the idea that (pre)sigmatic aorists formed two types of subjunctive stems in Proto-Indo-European, the **CéC-e/o*-type and the **CéC-se/o*-type, and that these developed differently in Tocharian than in the CIE languages. According to Jasanoff (1998: 312; 2003: 224–7), the first type continued as a subjunctive in Tocharian and the latter as a present, while the reverse happened in the proto-language of the CIE branches, constituting an isogloss between Tocharian and CIE. In section 4.5, I dubbed this ‘the competing subjunctives theory’.

To test the theory, I collected all Tocharian verbs with stem patterns that had an *s*-prs.[8] and an *’ə/e*-subj.[2] to see if their distribution could inform the hypothesis in some way. The survey showed a clear link between *s*-transitive patterns forming an *s*-prs.[8], an *’ə/e*-subj.[2] and an *s*-prt.[3] and roots with the structure *CəRC*- and *CəWC*-. Many of these roots also form intransitive verbs with *e*-prs.[3] (suffix ^B*-e*-, ^A*-a*-), *a*-subj.[5] and *a*-prt.[1]. Since, according to the **h₂e*-conjugation theory (Jasanoff 2003: 171–3), the verbs forming this type of intransitive stem pattern descend from stative-intransitive roots without any sigmatic stems, this distribution is completely unexpected. Presigmatic aorists and their competing subjunctives in **-e/o*- and **-se/o*- should not be found next to these types of roots. Since the verbs that are posited as old presigmatic aorists in Tocharian never have transitive *’ə/e*-subj.[2] forms, the competing subjunctives theory cannot account for the attested stem patterns, even within its own framework of reconstruction.

In order to explain the stem pattern [8 – 2 – 3] in a different way, I proposed that the strong tendency for *s*-transitive verbs with the root structure *CəRC*- and *CəWC*- to form an *’ə/e*-subj.[2] rather than a root subj.[1] can be explained as secondary productivity. The origin of the pattern [8 – 2 – 3] can probably be found in verbs like **wəyk*- ‘avoid’ < PIE **ueig*- ‘move away (from)’ which formed a simple thematic present in Proto-Indo-European, pushed into the subjunctive in Tocharian.

The two topics are connected on the synchronic as well as the diachronic level. Firstly, they concern the same stem formations, e.g., *e*-subjunctives and *e*-presents of class [3], *s*-presents of class [8] and *s*-preterites of class [3], and these stems are used to indicate either an increase or a decrease of transitivity. Secondly, some of the inherited verbs in each group seem to start with the same inflection from Proto-Indo-European; e.g., both **pek*^w- and **dem(H)*- have inherited transitive active simple thematic presents and *s*-aorists, while both **ləwk*- and **ueig*- seem to have started out with intransitive thematic presents, root aorists and perfects. In section 4.6, I

argued that it was the interplay between semantics and root structure that—to a large extent—determined which Proto-Tocharian stem pattern each verb ended up in.

There are still many aspects of Tocharian verbal valency and its origin that need to be elucidated. The relationship between *e*-prs.[3] and *o*-prs.[4], and the origin of the causative stem patterns have not been touched in this chapter. Much has already been written on the subject; it is my hope that the discussion of this chapter will help move forward future research in this regard.

Chapter 5 The Indo-European **nt-* participle

5.1. Indo-European participles in Tocharian

To understand why Indo-European participles are relevant to the cladistic position of Tocharian, we have to start on a different branch of the Indo-European family tree: Anatolian. The status of the inherited participles in Anatolian is somewhat of a problem in Indo-European linguistics. The point of contention is the fact that the only participle formant identifiable in the Anatolian languages is the suffix **-nt-* which in the rest of Indo-European forms the active participle to present and aorist stems. The problem from a diachronic perspective is that this suffix forms subject/patient-oriented participles in Hittite; they are subject-oriented when formed to intransitive verbs and passive when formed to transitive verbs. In addition, they have stative-resultative rather than processual semantics (Grestenberger 2017: 114–5; Melchert 2017: 217; Fellner & Grestenberger 2018: 65–7):

akkant- ‘having died, dead’ to *āk⁻ⁱ/akk-* ‘die’
uwant- ‘having come’ to *we^{-zi}/uwa-* ‘come’

appant- ‘seized’ to *epp^{-zi}/app-* ‘seize’
piyant- ‘given’ to *pai⁻ⁱ/pi-* ‘give’

A growing number of scholars have in recent publications pointed to this discrepancy as evidence for an early split of the Anatolian branch (Pinault 2013: 38–

g; Melchert 2017: 219–20; Fellner & Grestenberger 2018; Kloekhorst & Pronk 2019).³²⁶

In Tocharian, on the other hand, all three participle suffixes of Indo-European are found: **-nt-* in the agent noun formations ^B*-ñca*, ^A*-nt* (and possibly others), **-mh₁nó-* in the participle ^B*-mane*, ^A*-mām*, and **-uos-* in the preterite participle in ^B*-əw*, *-au*, ^A*-äw*, *-o*. Only the verbal adjective in **-tó-/*-nó-* is not reflected directly. Although these Tocharian suffixes do look immediately recognisable as Indo-European, there are substantial formal and functional problems with each one. Notably, most verbal noun formations in Tocharian are contextually oriented, including the *m*-participle and the preterite participle,³²⁷ and the descendants of the **nt-* and **mh₁nó-* participles are generally not morphologically linked to the active and middle voice, respectively (Malzahn 2010: 480; Pinault 2012a: 229; 2012b: 179). This is highly interesting for the discussion on the position of Tocharian because of the discrepancy between Anatolian and CIE. Potentially, the Tocharian situation reflects a prestige before the participle formations were associated with active and middle voice and may thus be closer to Anatolian than to the CIE branches in this regard (Pinault 2012a: 229; Peyrot 2017: 339–40). The earliest comparison of the Tocharian participles with Hittite is Benveniste (1936: 232), but the discrepancy with the classical Indo-European languages was noted already by Lévi & Meillet (1914: 18–20).

Perhaps most puzzling is the fact that ^A*-nt* and ^B*-ñca* exist side by side with other agent noun suffixes, many of which have a similar phonological structure (*-NC-*) and the same non-gendered inflection: nom.sg. *-a*, obl.sg. *-ai*, nom.pl. *-añ*. Their exact syntactic and morphological analysis is disputed as they show both participial and substantival elements. Whether and how these agent nouns are linked, and indeed whether they even go back to the Indo-European participle in **-nt-*, has been met with widely different interpretations in the scholarship. The matter of the *nt*-formations is thus important for the question of the position of Tocharian; if, in Tocharian, the cognate of the CIE active participle is neither active nor a participle, it may constitute an archaism.

In this chapter, the cladistic aim is to test whether the reflexes of the PIE **nt*-participle in Tocharian and its supposedly middle counterpart in **-mh₁no-* indeed show any affinity with the active and middle voice, respectively. In terms of Tocharian historical grammar, the aim is to elucidate the prehistory of the variety of

³²⁶ Also cautiously, Oettinger (2013: 156–7).

³²⁷ This is shown in the ongoing (independent) work by A. Kuritsyna (Moscow) and A. Warries (Leiden). For the orientation of the preterite participle, see Seržant (2020: 225–30).

NC-formations found predominantly in Tocharian B. After giving some preliminary information on participles and verbal nouns cross-linguistically (5.1.1) and in Tocharian (5.1.2), I present a synchronic description of the various formations in *-NC*- and ^B*-mane*, ^A*-mām* (5.2). In 5.3, I address the cladistic question; this is done by collecting and analysing the meanings of the ^B*ñca*- and ^A*nt*-forms and the ^B*mane*- and ^A*mām*-forms that are found to verbs that have a semantic distinction between the active and the middle. Section 5.4 is dedicated to answering the second aim, namely how the variety of *NC*-forms are related and how they came about in Tocharian. This results in a unified analysis for the suffixes of the structure *-NC*-. Finally in section 5.5, the chapter conclusions are given.

5.1.1. Oriented and relative participles

A participle is an adjective derived from a verb which is functionally incorporated into the verbal inflectional system and has verbal valency. In the language families of the world, participles are found extensively in Eurasia, commonly in Africa, and rarely in the Americas and Oceania (Haspelmath 1994: 152–3; Shagal 2019: 6, 10–1). In grammars of Indo-European languages, verbal adverbs, also known as converbs, are sometimes referred to as participles, since they are often formally identical to the participles in these languages; cf. Eng. *He was lying in bed reading* (adv.), *the reading* (adj.) *student was interrupted*. Often, however, these categories are formally distinct; cf. Hungarian prs.ptpc. *síró*, cv. *sírva* ‘crying’ (Ylikoski 2003: 187). In this chapter, I will adhere to the narrower definition of participle, i.e., a verbal adjective showing both verbal and adjectival syntactic features.

Following Haspelmath (1994: 153–4), there are two semantic types of participles. The first is the inherently oriented participle which is morphologically marked as referring to a specific participant of the verb (most commonly the agent or the patient). The second type is the relative participle whose reference is determined syntactically. This type is much rarer than oriented participles, but has been shown to exist, for instance, in the Northeast Caucasian language Lezgian (Haspelmath 1994: 154) and as an areal feature in Siberian languages (Shagal 2018: 71–2).

On the typology of voiced participles, Haspelmath states:

“There are no special participles for other voices, e.g. “reflexive participles” or “middle participles” (whatever is meant by “middle”). (Haspelmath 1994: 152)

This statement is of course at odds with nearly all introductory descriptions of Indo-

European grammar, which posit four participles for Proto-Indo-European: the ‘active’ participle in **-nt-*, the ‘middle’ participle in **-mh₁nó-*, the ‘perfect active’ participle in **-uos-*, and the verbal adjective in **-tó-/ *-nó-* (Meier-Brügger 2002: 186–7; Fortson 2010: 108–9; Beekes 2011: 279–80). The first two are formed to the present and aorist stems, while the third is formed to the perfect. The **-tó-/ *-nó-*-adjective is formed directly to the verbal root and is therefore not a part of the conjugational system to the same extent as the other three.

There is a way to unite the traditional Indo-European participle system with the framework of Haspelmath (1994). Grestenberger (2017) has shown that the active and middle participles are not inherently marked for voice themselves, but rather aligned with the voice of the finite verb. It therefore seems likely that the participles in **-nt-* and **-mh₁nó-* both had inherent orientation towards the agent/subject. While there may not be a middle participle in the semantic sense, the **mh₁nó-*-participle is marked morphologically for middle voice, while the **nt-*-participle is marked for active voice. They are thus essentially allomorphs of the same participle.

5.1.2. Nominal verb forms in Tocharian

The Tocharian languages have an extended system of verbal nouns and adjectives. In Table 5.1, all Tocharian verbal nouns and adjectives formed either directly to the root or a verbal stem are listed. Secondary formations like the absolutive, e.g., ^B*pālkormen*, ^A*pālkoräš* ‘having gone’, formed with the ablative from the abstract noun in ^B*-or*, ^A*-or*, are not included. Remarkable for most of these formations is that they are not marked for voice and are contextually oriented (Seržant 2020: 225–30; Kuritsyna 2022; Warries 2022a). For examples of both agent and patient orientation of the preterite participle, see ex. 115 and 116 for agent orientation, ex. 117 and 118 for patient orientation (courtesy of A. Warries, p.c., his translations).

115 TB PKAS7C a4

*tane šemi ksa onolmi yāmor yāmoš*_{p_{rt},ptcp.m.nom.pl.}

‘[there are] some beings here **who have done** a deed’

116 TA A394 a4

*waštaš läntässi pratim yāmu*_{p_{rt},ptcp.m.nom.sg.}

‘**having made** the decision to leave the house (/ become a monk)’

117 TB THT242 a4

*lkāntār-c yāmwa*_{p_{rt},ptcp.f.obl.pl.} *nauš yārpona*

‘they see the good merits **done** by you earlier’

118 TA A7 b3–4

*wrasaśśi āñmaši īme yāmu*_{prt.ptcp.m.nom.sg.}

“the image of the self **has been made** by humans”

From a formal point of view, at least two of the formations have clear Indo-European origins; the preterite participle continues the perfect participle with some remodelling (Peyrot 2010), while the present participle continues the middle participle: PIE m.nom.sg. **-mh₁nó-s* > PT **-manæ* > ^B*-mane*, ^A*-mām*; see Fellner & Grestenberger (2018: 73–4) for references and Indo-European examples. Formally and functionally, the *m*-participle is aberrant. It does not inflect for either number or gender and is often used adverbially rather than adjectivally;³²⁸ see subsection 5.2.8 for examples.

The agentive formations ^B*-ñca*, ^A*-nt* are even more complicated. It is clear that the suffixes do not continue the Indo-European *nt*-participle suffix directly since that suffix would be lost in the nominative singular. Nor are they formally identical to each other: a Tocharian B palatal *c* does not correspond to a TA dental *t*. They do, however, exhibit very similar syntactic behaviour. While they are categorised as agent nouns in Table 5.1, this analysis is not clear-cut. Primarily on syntactical grounds, Fellner (2014b; 2017) classifies them as proper participles. In Tocharian B, there is a host of other agent noun formations that are similar to *-ñca* in either form or function, some of which are matched in Tocharian A, e.g., the occupational title ^B*-ntsa*, ^A*-nts*.³²⁹

Since there is disagreement on the word class of some of these formations, it naturally follows that the nomenclature used to describe them shows a degree of variation. Following Malzahn (2010: 480–95), I will use ‘*m*-participle’ ^B*-mane*, ^A*-mām* as it is clear and unambiguous. For the conglomerate of suffixes in PT **-Nca*, I will use the neutral term ‘*nt*-formation’ or *NC*-formation inspired by Hilmarsson (1986: 223–6)

³²⁸ There are some exceptions to this, e.g., ^A*knānmām* ‘wise’, which has been lexicalised as a proper adjective. Some secondary case forms are attested as calques from Sanskrit; see Dietz (1981: 136–7).

³²⁹ The only Tocharian A form with this suffix, *wāpañts** is assured from the abstract *wāpāñtsune* ‘weaving’ (YQ3.1 a8).

Table 5.1: Tocharian participles, agent nouns and verbal adjectives

Tocharian B		Tocharian A	
prs.- ^B <i>ñca</i> ^α	<i>weṣṣeñca</i> ‘speaker, speaking’	prs.- <i>nt</i>	<i>kärsnānt</i> ‘knower, knowing’
prs./sbj.- <i>nta</i>	<i>weñenta</i> ‘orator’	sbj.- <i>nt</i>	<i>pekant</i> ‘painter’
sbj.- <i>ntsa</i>	<i>wapāntsa</i> ‘weaver’	sbj.- <i>nts</i> [*]	<i>wāpants</i> [*] ‘weaver’
sbj.- <i>ca</i>	<i>kärsauca</i> ‘knower, knowing’	—	—
prs.- <i>uki</i>	<i>erṣuki</i> [*] ‘evoker, evoking’	—	—
prs.- <i>mane</i>	<i>kausemane</i> ‘killing’	prs.- <i>mām</i>	<i>kosmām</i> ‘killing’
prs.- <i>mo</i>	<i>cämpamo</i> ‘being able’	prs.- <i>m</i>	<i>cämpam</i> ‘being able’
prt.-(<i>a</i>) <i>u</i> ^β	<i>kakāwu</i> ‘killed’	prt.-(<i>ā</i>) <i>u</i>	<i>kāko</i> ‘killed’
(Itkin & Kuritsyna 2020; Friis 2021: 2)			
^α The stem to which the suffixes are added are indicated with superscript, e.g., ^{prs.}			
^β With reduplication in some classes.			

5.2. Tocharian verbal nouns in -NC- and related suffixes

The morphosyntactic analyses of some of the Tocharian agentive formations in -NC- are disputed in the scholarship; see Pinault (2012a: 229), Fellner (2017), Peyrot (2017: 328–9), Fellner & Grestenberger (2018: 68), Itkin & Kuritsyna (2020). Some analyses take the productive formations, such as ^B-*ñca*, ^A-*nt*, as participles, while others interpret them as agent nouns. In order to understand the development and Indo-European starting point of the formations in -NC- and related formations, we must first examine their synchronic morphology and usage. In this section, I give an overview of the various verbal noun suffixes with a suffix of the structure -NC-, the two suffixes that seem to be functionally related, ^B-*ca* and ^B-*uki*, as well as ^B-*mane*, ^A-*mām*. The focus of the survey is on their formal classification and possible patterns in their distributions. The inflection of the NC-forms, ^B-*ñca*, ^B-*nta*, ^B-*ntsa*, ^A-*nt*, ^A-*nts*, as well as ^B-*ca*, can be found in Table 5.2. A list of parameters can be set up to determine the functional nature of the NCa-formations (Fellner 2017: 74; Peyrot 2017: 328–9). They comprise of both syntactical, morphological, and semantic features; see Table 5.3. A more general representation of these parameters is also found in a table of Haspelmath (1994: 171) depicting the features of various participant nominalisations.

Table 5.2: The agentival declension

	TB	ex.	TA	ex.
nom.sg.	-a	<i>preñca</i> ^α	-Ø	<i>aršänt</i> ^β
voc.sg.	-ai	<i>preñcai</i>	-Ø	<i>aršänt</i> ^γ
obl.sg.	-ai	<i>preñcai</i>	-ām	<i>aršäntām</i> ^γ
gen.sg.	-antse	<i>preñca</i>	-āp	<i>aršäntāp</i> ^γ
nom.pl.	-añ	<i>preñcañ</i> ^γ	-añ	<i>aršäntañ</i>
obl.pl.	-am	<i>preñcam</i>	-ās	<i>aršäntās</i> ^γ
gen.pl.	-ats	<i>preñcats</i> ^γ	-āsši	<i>aršäntāssi</i> ^γ

^α *ñca*-form to ^B*pər*- ‘bring, carry’, ‘ə/e-prs.[2].

^β *nt*-form to ^A*ar*- ‘evoke’, s-prs.[8].

^γ Form not attested, inferred from other verbs.

Table 5.3: Parameters for agent nouns and participles

realm	parameters	in favour of agent noun	in favour of participle
syntax	object in the	genitive	oblique (acc.)
	modification by	adjectives	adverbs
	attributive use	no	yes
morphology	inflection is	substantival	adjectival
	gendered inflection	no	yes
meaning	translation of Sanskrit	agent nouns	participles
	semantics are	permanent	temporary

5.2.1. Tocharian B -*ñca*

In Tocharian B, the suffix -*ñca* is found almost exclusively to thematic presents of class [2], [8], [9] and [10] (see Table 1.3). The only exceptions are *e*-prs.[3] ^B*mäskeñca* ‘being, becoming’, *a*-prs.[5] ^B*sawāñca* ‘eating’ and *a*-prs.[5] ^B*māñca* in ^B*māñca kauntse* ‘sunset, west’ (Burlak & Itkin 2000: 33; Itkin & Kuritsyna 2020: 86). The verb ^B*y*- ‘go’ uses a root prs.[1] stem for the finite forms, but its *nt*-form is made to the thematic

stem variant ^B*yne-*: ^B*yneñca* ‘going’; cf. prs.1pl. *ynem*, 3pl. *yanem*, *m*-ptcp. *ynemane*. Almost 300 forms are attested in the Tocharian B corpus, an overwhelming majority of which are in the nominative singular. Nominative plural and oblique as well as genitive forms are also attested to varying degrees, while other case forms are rare, but do exist.³³⁰

Starting with the syntactical parameters from Table 5.3, there is no doubt that the *ñca*-forms assigns the oblique. In the corpus, there are at least 41 examples of this (see ex. 119 and 120), and no examples of genitive case assignment to counter.

119 THT197 b4

*mäkte ñake käkse*³³¹ *wreme emalyašše kektseñne stmauṣ avasth yainmu sak*_{obl.sg.}
*tanmaššeñca*_{nom.sg.} *mäsketrä*

“Just as a cold object, touching the body in a hot state, is a **generator of pleasure**”³³²

120 THT33 a6

*kuse no ostmeṣ ltu yāṣṣu*_{obl.sg.} *śawāñca*_{nom.sg.}

“But who has gone from the house, **eating alms food**”

As for modification, there is one example of an adjectival modifier (ex. 121) against at least 10 adverbial (ex. 122 and 123).

121 PKAS2B a2

*hiraṇḍašše ṣalypempa tetriwu nemcekaññe*_{nom.sg.}³³³ *po tekanma nākšeñca*_{nom.sg.}

‘mixed with castor oil, it is an **infallible destroyer** of all deceases’

122 PKAS7K a1

*kektsenne po*_{adv.} *yneñca*_{nom.sg.}

“**going completely** into the body”

³³⁰ My dataset consists of 277 *ñca*-forms. Their case and number distribution is as follows: nom.sg. 162, obl.sg. 51, nom.pl. 25, obl.pl. 11, gen.sg. 10, com.sg. 5, voc.sg. 3, gen.pl. 3, all.sg. 1, loc.pl. 1. The data set may not be exhaustive.

³³¹ Catt, Huard & Inaba (2020: 199–201) argue convincingly that the obscure word *käkse* represents a copying error by the scribe for a previously unattested TB word *wakse* ‘cold’, cognate of ^A*wpäs* ‘cold’.

³³² Translation based on Catt, Huard & Inaba (2020: 195).

³³³ An adjective derived from the adverb ^B*nemcek* ‘certainly, surely’ (Adams 2013: 364). The position in the sentence indicates attributive use.

123 THT228 a3–a4

ceṃ arāñcats po yso-^{a4}mo poyśiññ-ākalk preñcaṃ_{obl.pl.} še_{adv.}

“of these hearts all together, continuously carrying a Buddha-wish”

There are some examples of attributive use (ex. 124), although the majority of cases are predicative (ex. 125) or substantival (ex. 126); cf. Dietz (1981: 13, 144). All in all, the data backs up the syntactic arguments brought forth by Fellner (2017: 77–9).

124 THT 3597 a3

maiyyā-preñcai_{voc.sg.} vikṣnu ///

“O powerful Viṣṇu”³³⁴

125 PKAS7M a4

preke kauṣeñca_{nom.sg.} läkleñ

“time is a killer because of suffering”³³⁵

126 PKAS5C a5

kalymisa keś taṣeñcañ_{nom.pl.} papāṣṣorñe mällarṣkaṃ³³⁶ wāṣmoñ tākoy-ñ³³⁷

“May the ones making considerations in the right direction, striving towards moral behaviour, be my friends”

With regard to inflection, the situation is different. Although the distinction between adjective and substantive declension in Tocharian B is not clear-cut, there are certain endings that belong to one or the other. In the genitive singular, two such endings exist, adjectival *-’epi* and substantival *-(a)ntse*: adj. m.gen.sg. *kreñcepi* ‘good’, prt.ptcp. m.gen.sg. *kälpoṣepi*, subst. gen.sg. *kaunantse* m. ‘day, sun’, gen.sg. *rintse* f. ‘city’. Here, *-ñca* aligns with the substantives: *weṣṣeñcantse* (THT251 a4) ‘for a speaker’, *aiṣṣeñcantse* (PKAS7I b2) ‘for a giver’. In addition to this, Peyrot (2017: 328)

³³⁴ Schmidt (1983b: 273): “o du kraftvoller Viṣṇu”. ^B*maiyyā-preñcai* is a vocative singular compound of *maiyya* ‘power’ and *preñca* ‘carrying’; cf. Peyrot (2010: 152).

³³⁵ Trsl. CEToM, ed. G.-J. Pinault, M. Malzahn & M. Peyrot, accessed 27 September 2023.

³³⁶ This form *mällarṣkaṃ* (obl.pl.) seems to be an adjective derived from *malla-* ‘crush, oppress’, preserving a more archaic meaning ‘pressing (for)’ in the sense ‘striving towards’ (Adams 2013: 490–1).

³³⁷ The expected Tocharian B opt.act.3pl. form would be either *tākoṃ* or *tākoyeṃ*. Peyrot (2008: 142–4) has argued that the short form is the more archaic of the two and that the longer form is a neologism with a reintroduced stem formant ^B*-oy-* which he proposes is regularly lost through sound change. This form must have been restored improperly, possibly due to the following object marker. The context prohibits a 3sg.

mentions the vocative singular in ^B-*ai* as a point in favour of the substantival analysis. However, this ending is only found in this declensional type, nom.sg. -*a*, obl.sg. -*ai*, nom. pl. -*añ* and in the *mo*-adjective, e.g., ^B*klyomo*, voc.sg. ^B*klyomai* ‘O noble one’. Since most of the other members of this class are on the border between substantive or adjective, this argument carries less weight than the genitive singular.

A strong morphological argument in favour of the substantival analysis is the fact that the *ñca*-formation does not have a separate feminine. This is unexpected for a verbal adjective or participle; cf. prt.ptcp. m.nom.sg. ^B*yāmu*, f.nom.sg. ^B*yāmusa*. There are a handful of feminine plural forms with the ending -*na* in the *Vinayavibhaṅga* and *Karmavācanā*, e.g. *kālaṣeñcana* (THT1105 a5) ‘bringing’, *yamaṣṣeñcana* (IOLToch257 b2) ‘doing’, but these must be secondary derivatives. See ex. 127 for masculine and ex. 128 for feminine reference.

127 PKAS7A b3

/// (os)t(a)-*ṣm(e)ñca*_{nom.sg.} *śāte* (ṣ)ai *procer ṣa narahānte sū*_{m.nom.sg.}
 “There was a rich **householder**; he was the brother of Narahānt”³³⁸

128 THT30 a1–a2

*mā wat nai sā_u tne nesām ytārye*_{f.nom.sg.} *ksa lakle nautṣṣeñca*_{nom.sg.}
 “Or isn’t there any **way** [f.] here **that makes** sorrow disappear?”³³⁹

The last parameters are concerned with the meaning and use of the *ñca*-formation. This is surveyed in Dietz (1981) who shows that *ñca*-forms are used to a large extent to render deverbal Sanskrit forms in -*ín*-; see also the list in Fellner (2017: 79). These Sanskrit forms are primarily agentival in meaning; some function as adjectives and some as substantives (Debrunner 1954: 328–50; Lowe 2017: 94–6, 140–4, 186–93). For this reason, Fellner (2017: 79) is able to use the correspondence between Skt. *ín*-forms and TB *ñca*-forms as evidence for an adjectival interpretation of the latter, while Peyrot (2017: 329) can use them to argue in favour of an agent noun interpretation. In addition to *ín*-forms, *ñca*-forms translate several other types of Sanskrit verbal nouns and adjectives.³⁴⁰

³³⁸ Trsl. CEToM, ed. G.-J. Pinault, M. Malzahn & M. Peyrot, accessed 27 September 2023.

³³⁹ Trsl. Peyrot (2013a: 354); the addition in brackets is mine. See also Sieg & Siegling (1949b: 49) who amend the reading to *mā wa nnai* and translates: “Es gibt ja hier noch keinen Weg, der das Leid schwinden macht”.

³⁴⁰ See Fellner (2017: 80) for more examples.

TB nom.sg. *tsain yamäṣeñca* (THT 305 b7) ‘arrow maker’

Skt. nom.sg. *iṣukāra* (Udv. XXXI 8d) ‘id.’

TB nom.pl. *takarškñ-eršeñcañ* (PKAS7G b2) ‘evoking graciousness’

Skt. nom.pl. *prāsādikāḥ* (Mkv. XLVIII) ‘amiable’

The evidence from the translation of Sanskrit texts is therefore somewhat ambiguous. It is noteworthy, however, that the *ñca*-formation is not used as the standard method of rendering the Sanskrit present active participle. In fact, Dietz (1981: 59) lists only one example, gen.sg. ^B*āksaṣe(ñcatse)* rendering Skt. gen.sg. *jāgarato* ‘waking’. Instead, the Sanskrit active participle is very often translated with the Tocharian B *m*-participle; see 5.2.8.

Semantically, the *ñca*-formation is used to describe permanent or inherent characteristics (ex. 129, 130), often pertaining to the Buddha as in ex. 131 (Dietz 1981: 144; Pinault 2012b: 182).

129 IOLToch305 b6

*mit pit leśp preñcamne*_{loc.sg.} *śpālmem*

“honey is superior **in removing**³⁴¹ gall and phlegm”

130 THT407 a6

*eśnesa meñkitse tākoy kacāp ompä pärkre-śāyeñca*_{nom.sg.}

“If there were a turtle deprived of eyes there, **long-living**”

131 SIP1 a3–a4

*pāliskoṣṣe cau wemacitreṃ śanmāṣṣeñcai*_{obl.sg.} *y(l)ai(-ñä-^{aa}ktentse prākrem)*
śanmausa

“**binding** this Vemacitra of the mind with the firm bond of Indra”³⁴²

Summarising the features of the ^B*ñca*-formation, it is clear that it cannot be classified entirely as a participle or an agent noun; see Table 5.4.

³⁴¹ Lit. “carrying (off)”.

³⁴² See Pinault (2008: 303): “ô toi qui lies ce Vemacitra de la réflexion avec le (solide) lien du dieu Indra!”. Vemacitra is a leader of the Asuras (Pinault 2008: 298).

Table 5.4: Parameters for the ^B*ñca*-formation

realm	parameters	in favour of agent noun	in favour of participle
syntax	object in the		oblique
	modification by	(adjectives)	adverbs
	attributive use		yes
morphology	inflection is	substantival	
	gendered inflection	no	
meaning	translation of Sanskrit		miscellaneous
	semantics are	permanent	

5.2.2. Tocharian B *-nta*

The ^B*nta*-forms are far less prevalent than the ^B*ñca*-forms. In fact, less than a handful of verbs have such a form attested; see Table 5.5 for all attested forms.³⁴³ The suffix causes stem-final palatalisation and follows the same declension as *-ñca*. The attested forms are primarily formed to the present stem, taking the *e*-formant of the thematic suffix in thematic stems. ^B*weñenta* is an exception which appears synchronically to be formed to the thematic subjunctive stem ^B*weñ-ə/e-*. This is a morphological hapax within both *nta*- and *ñca*-formations. The *sk*-present of class [9] in Tocharian B, *weşşeñca*, must be secondary in view of the Tocharian A suppletive present *tränk-*; see Winter (1977: 134–5). The form ^B*weñenta* can therefore be taken as an archaism of the original present stem, possibly alongside the *mo*-adjective ^B*weñmo* (Malzahn 2010: 343).

³⁴³ There is one possible form *kapānta** from ^B*kapa-/kawa-* ‘crave’, attested in an adjective m.nom.pl. *kapāntaşşi* (G-Su1 1b), but the reading is uncertain (Adams 2013: 147–8; Itkin & Kuritsyna 2020: 98). Pinault (1987: 134–6) rather interprets the form as *kaşāntaşşi*, a *şşe*-adj. to a plural form of ^B*kaşāy* ‘defect, degeneracy’ from Skt. *kaşāya-*. In the context, either possibility seem possible: G-SU1 1b *koyñ kakāyaş po ka[s/p]āntaşşi* ‘All having opened the mouth, all are pits of degeneracy/craving’.

Table 5.5: Attestations of the ^B*nta*-formation

root	form	attestations
<i>kau</i> - ‘kill’	nom.sg.	<i>kauṣenta</i> ‘murderer’ THT126 b4, PKAS6H a6
	obl.sg.	<i>kauṣentai</i> PKAS4A b3, PKAS5C a6- b1, PKNS25 & 26 b5, PKNS27 a4, THT127 a3
	nom.pl.	<i>kauṣentañ</i> PKAS7H a6, PKAS17J b6
		<i>kauṣṣenta(ñä)</i> THT1350 b4 ^α
	gen. pl.	<i>kauṣentaṃts</i> THT 228 b5
<i>nəm</i> - ‘bend’	voc.sg.	<i>ñmäntai</i> ‘bender’ PKNS83 b7
<i>prä</i> k- ‘ask’	obl. pl.	<i>prekṣentaṃ</i> ‘interrogator’ IOLToch131 b1
<i>yok</i> - ‘drink’	nom. pl.	<i>yokäntañ</i> ‘drinker’ THT248 a3
<i>weñ</i> - ‘speak’	nom. sg.	<i>weñenta</i> ‘speaker, orator’ PKAS7I a2, PKAS7J b4
	gen. pl.	<i>weñentaṃts(ä)</i> PKAS6D a6, THT1286 a6
	per. pl.	<i>weñentaṃtsa</i> PKAS7L b4
	loc. pl.	<i>weñentanne</i> ^β PKAS7C b1

^α Restoration by Thomas (1974: 79). Note that CEToM reverses the recto and verso (accessed 15 September 2023).

^β Pinault (2007: 210) reads *weñentänne* with hypercorrect <nta>. Comparison with assured <nta> and <nta> (e.g. a1 *nraiynthane*, a2 *kraupentär-ne*), however, shows that the expected <nta> should be read here.

The *nta*-formation is more substantival than the *ñca*-formation and, in most ways, it functions as an agent noun, both syntactically, morphologically, and semantically. Unfortunately, there are no attested examples of an *nta*-form with an object so it is impossible to tell whether the formation takes genitive or oblique case assignment. There are no examples of either attributive use or adverbial modification,³⁴⁴ but there are at least two cases of adjectival modification of ^B*weñenta*

³⁴⁴ The example of an attributive Tocharian B *nta*-form cited by Fellner (2017: 77) cannot be maintained. In THT1368 b4, the following phrase is attested: *///ntanne onolmenne* (both loc.pl.), reasonably restored to *(kauṣṣe)ntanne onolmenne* ‘to the killing beings’ since it

(ex. 132, 133). Whether the paradigm of *-nta* shows the same substantival features as *-ñca* is not possible to say, since there are no examples of either the genitive or vocative singular. Neither is there any evidence of gendered inflection.

132 PKAS7I a1-a2

*śak no weñ(a pärkāwnta pudñäkte śpā)^{a2} lmeṃ weñenta_{nom.sg.}*³⁴⁵

‘But the Buddha, the excellent **speaker**, has talked of ten advantages’

133 PKAS7J b4

skwassu mäsketrä weñenta_{nom.sg.} spāntaitse

‘he becomes a happy and faithful **speaker**’

Semantically, these forms seem to designate permanent characteristics. *Pace* Pinault (2012b: 180), the *nta*-formation are not less habitual than the ^B*ñca*-formation. In fact, the two seem to denote occupations (^B*kauṣenta* ‘murderer, executioner’ and ^B*prekṣenta* ‘interrogator, judge’), while ^B*weñenta* ‘speaker, orator’ is used often as a characteristic of the Buddha. The character of ^B*yokantañ* is less clear, since the word is only attested once.³⁴⁶ In a translation of Sanskrit, the form ^B*kauṣṣenta* renders a verbal adjective in *-ka*.³⁴⁷

TB nom.pl. *snai kauṣṣentañ* (THT 1350 a4) ‘harmless’³⁴⁸

Skt. nom.pl. *ahimsakāḥ* (Udv. XXX 46b) ‘id.’

Table 5.6 shows first and foremost the fragmentary nature of our corpus of *nta*-forms. The evidence there is, points in the direction of an agent noun.

probably translates Sanskrit *hiṃsekaṣu manuṣyeṣu* (Thomas 1974: 87; Dietz 1981: 42). If (*kauṣṣe*)*ntanne* had been attributive, regular Tocharian syntax would warrant an oblique plural, not a locative. Since the phrase is clearly calqued, it cannot inform the syntactical discussion on the ^B*nta*-formation.

³⁴⁵ Restoration by Sieg (1938: 41).

³⁴⁶ Most likely, THT565 b4 *yokānta* does not belong here, but should be restored to (*pra*)*yokānta* ‘prayogas (a crystal)’ (Winter 1980b: 469).

³⁴⁷ Dietz (1981: 42) restores *kauṣe(antai kälpāṣ)ṣā(ṃ kauṣenta)* (THT34 b2) to translate Skt. *hantāraṃ labhate hantā* ‘a murderer catches a murderer’ (Udv. XIV 3a), but since the suffix is fully restored, these forms do not constitute independent evidence.

³⁴⁸ The context is missing, so a syntactic analysis is not possible.

Table 5.6: Parameters for the ^B*ñca*-formation

realm	parameters	in favour of agent noun	in favour of participle
syntax	object in the	—	—
	modification by	adjectives	
	attributive use	no	
morphology	inflection is	—	—
	gendered inflection	—	—
meaning	translation of Sanskrit		(1 verbal adjective)
	semantics are	permanent	

5.2.3. Tocharian B *-ntsa*

The suffix ^B*-ntsa* is typically described as a formant of agent nouns. While it follows the declension of ^B*-ñca* in all attested forms, the synchronic facts surrounding ^B*-ntsa* are more complex than those of ^B*-ñca* and ^B*-nta*. The suffix was originally read as *-ttsa* and equated with the *-tsa* of ^B*aknātsa* (^A*āknats*) ‘foolish; a fool’. Updated readings have now shown that the suffix rather contains *-n-ts-*; it can thus be categorised with the other suffixes of the ^B*-NCa* type (Schmidt 2001: 20–1). Whether and how the suffix is related to the *-tsa* of ^B*aknātsa* is still subject to debate; see below 5.2.4. Moreover, there is not yet a *communis opinio* on exactly what words constitute this group. In this subsection, I will give an overview of the forms to be included and comment on the most important details. For a detailed discussion of each individual form, see Friis (2021: 4–9).

We can determine the meaning of some of the agent nouns with reasonable certainty, either because their derivational base is clear or because of Sanskrit parallels. This is the case for ^B*wapāntsa* ‘weaver’, ^B*naskāntsa** ‘spinner’, ^B*tarkāntsa** ‘carpenter’ (Skt. *takṣaka* ‘id.’),³⁴⁹ ^B*walāntsa** ‘hindrance’ (Skt. *nīvaraṇa-* ‘id.’) and *sparttāmtsa* ‘practitioner’. Recently, the *ntsa*-form ^B*paikāntsa* was identified in an inscription from a Qizil cave: Kz-181-ZS-Z-01 (Ching & Ogihara 2020: 109). This is

³⁴⁹ The verbal basis for this verb is a bit unsure. Thomas (1977: 110) connects it to ^B*tark-* ‘twist’, but as neither the root vowel nor the lack of *a*-character matches the ^B*ntsa*-form, Malzahn (2010: 486) sets up a new root ^B*tarka-* ‘do carpentry vel sim.’

clearly derived from ^B*päyka*- ‘paint’ and probably means ‘painter’. Slightly less certain cases include gen.pl. *sarātsaṃts* (Tumšūq 97 a2) ‘to planters (?)’ if to ^B*sar*- ‘plant’ (Pinault & Ogihara 2010: 185) and perl.sg. *warwantsaisa* (5x) ‘through the receiver (?)’ if to ^B*wərpa*- ‘receive; enjoy’ (Ching 2010: 251; Adams 2013: 630).

This leaves four *ntsa*-forms that are much more uncertain. The hapax *taktsāntsa* in U 5208 a7 was connected to Sanskrit *tákṣan*- and Greek τέκτων ‘carpenter’ and translated ‘einer, der etwas kann’ by K. T. Schmidt *apud* Mayrhofer (1992: 614) and ‘expert, capable person’ by J. Schindler *apud* Ringe (1996: 4). This connection, however, should be given up since the initial vocalism of the Tocharian B form *ta*- does not correlate with the Greek and Sanskrit forms, which reflect PIE **te*-, and the meaning seems to be determined on etymological grounds (Pinault 2002a: 130–1). A better proposal was set forward by Peyrot, Pinault & Wilkens (2019: 79) who take the form as an agent noun formed from ^B*taksa*- ‘destroy, crush’ with *t*-epenthesis, matching the Old Uyghur parallel: prs.ptcp. *uvdači* to *uv*- ‘crush, crumble’.³⁵⁰

The agent noun *tällaikāntsa** looks like a compound form, but the constituent parts are not entirely clear. It certainly seems like a title, found once in apposition to *tlaiyna* ‘women’ (sic for nom.-obl.pl. *klaiyna* ‘women’, Sieg & Sieglings 1953: 302):

134 THT484 a2

ikām ṇune piś tällaik(a)nts(am)_{obl.pl.} tlayn(a) ///

“On the 29th (day), five *tällaikāntsa*-women ...”³⁵¹

It has been proposed that the first member of the compound is ^B*talle* ‘burden’, with the full form being either *tälle-ikantsa* ‘burden goer’ ⇒ ‘porter’ (Adams 2013: 315) or *tälle-aikantsa* ‘burden knower’ (Malzahn 2010: 487 fn. 18). Due to the context of its attestation, neither option is compelling. It is possible that the word should be segmented differently as *täl-laikāntsa*; the second member would then be derived from the verb ^B*layka*- ‘wash’. The first member could either reflect *täl*-, *tār*- or *tān*- with assimilation, none of which are independent words.³⁵²

³⁵⁰ See Adams (2013: 302–3) for the possible etymologies of ^B*taksa*-.

³⁵¹ See Friis (2021: 8).

³⁵² One speculative solution would be that the first member is indeed ^B*talle* ‘burden’ with haplology, considering Eng. *a load of laundry*: **tälle-laikantsa* → **täl-laikantsa* > *tällaikāntsa*.

Table 5.7: TB agent nouns in *-ntsa*

form	meaning	verbal root	attestation
<i>tarkāntsa</i> [*]	‘carpenter’	? <i>tarka</i> - ‘do carpentry’	PKNS107 b1
<i>naskāntsa</i> [*]	‘spinner’	<i>naska</i> - ‘spin’	THT2718 a6
<i>paikāntsa</i>	‘painter’	<i>pāyka</i> - ‘paint’	Kz-181-ZS-Z-01 1, 2
<i>wapāntsa</i> ^α	‘weaver’	<i>wapa</i> - ‘weave’	THT1165+1548 b2, THT375 a2, a4, b2, Kg-025- ZS-R-01 2 ^β
<i>walāntsa</i> [*]	‘hindrance’	<i>wala</i> - ‘cover’	THT229 b1–b2
<i>sparttāntsa</i>	‘practitioner’	<i>spartta</i> - ‘turn; behave’	THT558 a2
<i>warwāntsa</i> [*]	‘receiver (?)’	? <i>wārpa</i> - ‘receive’	THT2687 8, THT2718 5, THT2722A 2, THT2842 4, THT2843 2
<i>sarāntsa</i> [*]	‘planter (?)’	? <i>sar</i> - ‘plant’	Tumšūq 97 2
<i>taksāntsa</i>	‘grinder (?)’	<i>taksa</i> - ‘grind’	U5208 a7–a8
<i>tāllaikāntsa</i>	‘?-washer (?)’	? <i>laika</i> - ‘wash’	THT443 a4, ^γ THT484 2, THT2683 a9
? <i>mallāntsa</i> [*]	‘(op)presser (?)’	? <i>mala</i> - ‘(op)press’	THT4062 a1
? <i>kewyomntsa</i> [*]	‘cattle-keeper (?)’	? <i>yānm</i> - ‘get, obtain’	THT2694 2

(Friis 2021: 4–9)

^α Cf. TA abst. *wāpāntsunē* ‘weaving’^β *wawāntsa* with colloquial *p > w* / *V_V*, see Ching & Ogihara (2020: 275).^γ Previously THT444 a2, but joined with THT443 (CEToM, ed. M. Braun, accessed 14 September 2023).

The form *mall[a]ntsasmem* (THT4062 a1, wood tablet) is quite difficult, due to the aberrant -s- before the ablative ending; see the discussion in Ching (2013: 69). Schmidt (2001: 20–1), who was the first to identify the form, proposed the translation ‘vintner’, ultimately derived from ^B*mälla*- ‘oppress, deny’ (< PIE **melh₂-* ‘grind, mill’, cf. Hitt. *malla*ⁱ, Lat. *molō*, Got. *malan* ‘grind, mill’). However, Ching (2013: 74–83) has convincingly shown that Schmidt’s analysis of the tablet as pertaining to the selling of wine is erroneous. Instead, she argues that the tablet is to be understood as a tax receipt. This leaves ^B*mallāntsa** in a precarious situation, since the meaning of the word very much depends on the context of its attestation.³⁵³ While it is still possible that *mallāntsa** is an agent noun in -*ntsa* to the verb ^B*mälla*-, its exact semantics are beyond our reach at this point.

Even more obscure is *k(e)wyomntsai*, which may be another compound *ntsa*-form comprising of ^B*ke*_u ‘cow’ and the verb ^B*yānm*- ‘get’, meaning ‘cattle-keeper’ *vel sim.* (Ching & Ogihara 2010: 97 fn. 43). It is, however, equally likely that it reflects an adjective ^B*kewye*_u* in the feminine oblique singular, also meaning ‘cattle-keeper’ as proposed by Pinault apud Ching (2010: 401 fn. 91); cf. ^B*yenme*_u ‘gatekeeper’. See the discussion in Friis (2021: 8–9).

There are not that many good examples of the syntactic use of the *ntsa*-forms, but what we have certainly indicates a noun. There are no examples of an object in either oblique or genitive. There is one example of modification by adjectives (ex. 135); furthermore, ^B-*ntsa* generally occurs in substantival position, often in adposition to a personal name (ex. 136). In ex. 134 above, *tällaik(a)nts(am)* could be attributive to *tlaiyna*, but it may rather be a compound. In any case, it seems to denote an occupation rather than an ongoing action.

135 THT 1548.a a2

/// – *wakicepi epastiyepi wapāṃntsantse*_{gen.sg.} *wasa* ·

“to the excellent, skilful weaver she gave”

136 Kz-181-ZS-Z-011

*ikām-šwer kṣuntsa štarce mene paikāntsa*_{nom.sg.} *raktasene*_{PN.nom.sg.} *ptanma šem*

“In the twenty-fourth regnal year in the fourth month, the painter Raktasene came (to) the stupas”³⁵⁴

³⁵³ Ching (2013: 69) suggests that that *mall[a]ntsasmem* is a loan word with a nominative singular †*mallantsas*. This is unlikely since ablative case suffix should be added to the oblique in Tocharian.

³⁵⁴ See Ching & Ogihara (2020: 109).

The *ntsa*-forms follow the inflection of the other *N**Ca*-formations: nom.sg. *taktsāntsa*, obl.sg. *wapāntsai*, gen.sg. *wapāmntsantse*, obl.pl. *walantsaṃ* (sic),³⁵⁵ gen.pl. *tālaikantsaṃ*. Formally, *tarkāntsam* (PKNS₁₀₇ b₁) looks like an oblique plural, but from the context and the Sanskrit original, it is clear that the underlying form must be nominative plural. This is a known Tocharian B phenomenon, although the exact circumstances are somewhat unclear (Peyrot 2008: 78–9; Del Tomba 2023: 166–9).

- 137 Skt. Uv. XVII 10c *dāruṃ namayanti takṣakā*
 TB PKNS₁₀₇ b₁ *or namseṃ tarkāntsam*
 “the carpenters bend wood”

There is one instance of a feminine plural formed with the suffix *-na*: f.gen.pl. *naskantsānaṃs* (THT2718 a6) ‘female spinners’. This seems to function as an overt, almost derivational, marking of feminine gender. Recalling ex. 134 once more, it is clear that feminine marking was not obligatory in the *ntsa*-forms.

- 138 THT2718 a6
 /// (na)s(ka)tsānaṃs_{f.gen.pl.} cokiś śalywe wsāwa: śaṅk ///

“I gave lamp oil to the female spinners: 1 pint”

Also semantically, everything points to the interpretation of ^B*ntsa*-forms as substantives. They are used to translate Sanskrit agent nouns (ex. 137) and abstract nouns: Skt. *nīvaraṇa*- ‘hindrance’ ⇒ ^B*walāntsa** ‘idem’. In addition, they denote permanent states (ex. 139) or occupational titles (ex. 135, 136, 137, 138).

- 139 THT558 a2–a3
*ompostām spartāmtsa*_{nom.sg.} *sū pañākte kã*-^{a3} *ṣṣintse palsko yānmāṣṣeñca*
māsketrā

“If afterwards [he is] a practitioner [of discipline], he becomes an achiever of the mind of the Buddha”

It is noteworthy that several of the occupational titles pertain to activities that traditionally take place in the household: *wapāntsa* ‘weaver’, *naskāntsa** ‘spinner’, and possibly *taktsāntsa* ‘grinder’ if it relates to a kitchen activity and *tālaikāntsa** if derived from ^B*laika*- ‘wash’.³⁵⁶

³⁵⁵ Archaic text, THT229 (Peyrot 2008: 220).

³⁵⁶ The Old Uyghur verb *uv-* ‘crush, crumble’, from which the parallel *uvdači* to *taktsāntsa* is derived, can refer to food production: *ol etmek uvdi* ‘(s)he crumbled the bread’ (Clauson 1972:

Table 5.8: Parameters for the ^B*ntsa*-formation

realm	parameters	in favour of agent noun	in favour of participle
syntax	object in the	—	—
	modification by	adjectives	
	attributive use	no	
morphology	inflection is	substantival	
	gendered inflection	no	
meaning	translation of Sanskrit	agent nouns	
	semantics are	permanent	

5.2.4. Possible related words in TB -(*n*)*tsa*, TA -(*n*)*ts*

There are three words that hold special positions in the discussion of -*ntsa*: ^B*preṃtsa* ‘pregnant’, ^B*aknātsa*, ^A*āknats* ‘fool(ish)’ and ^B*lāntsa*, ^A*lānts* ‘queen’. They are all formally similar to the occupational titles, but differ in significant details, each in their own way.

Starting with ^B*preṃtsa* ‘pregnant’, it is attested four times, only in medical texts (IOLToch306 b5, W33 a6, THT505 a2, b4).³⁵⁷ Synchronically, ^B*preṃtsa* is not formed to the subjunctive stem like the occupational *ntsa*-forms, but to the present stem. This is unsurprising as ^B*pār-*, ^A*pār-* is suppletive in the subjunctive, preterite, and imperative (TB subj. *ay-* ‘give’, prt. *kama-*, ipv. *as-* ‘fetch’; TA prt.-subj. *kāmā-* ‘bring’). In the early scholarship, the word was taken as a variant of ^B*prentse* ‘instant, moment’; cf. ^B*še-prentse* ‘in an instant, instantly’, ^A*prañk* ‘instant, moment’ (Couvreux 1955: 224; Sieg 1955: 76). Later, Schmidt (1975: 292–5) showed that it could be analysed as an adjective meaning ‘pregnant, fertile (of women); potent (of men)’, originally from the Proto-Indo-European feminine present active participle **b^her-ont-ih₂-* ‘carrying’; cf. Skt. *bhārantī*, Gk. *φέρουσα*.

Imberciadori (fthc.: 588–90) argues against this proposal, pointing to the lack of *a*-affection (also called *a*-umlaut) in the word; with *a*-affection, PT **pərentsa* should

4–5).

³⁵⁷ A fifth instance should most likely be restored in THT505 a5: *p(r)e(tsa)* ^{b1}*māsketrä* ‘she becomes pregnant’ (Schmidt 1975: 293 fn. 24).

have given TB †*prāntsa*.³⁵⁸ Considering that *a*-affection seems to be morphologically dependent (Peyrot 2013a: 64), and that neither of the agent noun suffixes ^B-*eñca* nor ^B-*enta* show evidence of it,³⁵⁹ the absence of it in ^B*premtsa* is not a major issue in my opinion and I accept Schmidt's etymology.

The form would have undergone the following semantic developments, according to Schmidt:

‘carrying, bearing’ (f.)
 ⇒ ‘child-bearing’
 ⇒ ‘pregnant, fertile (of women)’
 ⇒ ‘potent, fertile (of men)’

The last step can now be disregarded, as it was shown by Carling (2003a: 91) that the passage in question does not pertain to a male, but a female patient, suffering from uterine cancer (ex. 140); see also the discussion in Friis (2021: 12–4). The meaning ‘pregnant’ is entirely consistent with the other attestations of the word (ex. 141).

140 IOL Toch 306 b5

/// (kā)*tso staukkanatär-me šle yasar kalträ klainats premtsa*_{nom.sg.} *ynāñm yamasträ*

‘Their stomach grows, likewise the blood stands still. She is deemed by the women to be **pregnant**.’³⁶⁰

³⁵⁸ Imberciadori (fthc.: 589–91) instead suggests that ^B*premtsa* is an original perlicative of an unattested noun meaning ‘child’, either ^B**preṃ* (nom.-obl.sg.) or ^B**pire* (nom.sg.), ^B**preṃ* (obl.sg.), both derived originally from PIE ^B**b^her-* ‘carry’. This proposal is formally and semantically possible, but several assumptions are necessary, including accepting the unattested base noun and the conversion from a perlicative case form to an adjective.

³⁵⁹ The nom.-obl.pl. of *nt*-stem nouns and adjectives are also missing *a*-affection: adj. f.nom.-obl.pl. ^B**krenta* ‘good’, ^B**erkenta* ‘black’, noun a.nom.-obl.pl. *cärkenta* ‘garlands’, *pakenta* ‘parts, portions’.

³⁶⁰ My translation (Friis 2021: 13). The restoration of (kā)*tso* ‘stomach’ is suggested by Couvreur (1955: 223–4). In the following line, the monosyllabic *tso* is seemingly repeated, which Winter (1962b: 113 fn. 10) and Schmidt (1975: 294) take as the word for ‘penis’. With the updated interpretation by Carling (2003a: 91), Couvreur’s original suggestion (1955: 223 fn. 10) of the accidental dropping of the syllable <kā> should be revived (F. Dragoni, p.c.).

141 THT 505 a2

*t. eše yokale pretsa*_{nom.sg.} ///

“...is to drink together with ..., [she becomes] **pregnant**”³⁶¹

The final instance of this word is found in W33 a6. The reading of the entire line is problematic, since a lot has been erased. In the scholarship, there are at least two different interpretations:

transcription and translation by Filliozat (1948: 76):

142 TB W33 a6

---- *k. --- yo waṃpretsa mäskemtr*

“... sont par ...”

transcription by Sieg (1955: 76), translation by Broomhead (1962: 31):

---- *k. --- yojam pretsa mäskemträ*

“they will be a mile (away) in a moment”

Owing to the fragmentary nature of the passage, the following transcription is also possible and seems better given the context:³⁶²

---- *k. --- yokäm*_{prs.act.3sg./3pl.} *pretsa*_{nom.sg.} *mäsketrä*

“... **drinks** ..., she becomes **pregnant**”

To sum up, an *ntsa*-form *preṃtsa* in the meaning ‘pregnant (person)’ can be posited for Tocharian B. There is no reason to assume that the word also pertains to male potency; contra Schmidt (1975: 294), Adams (2013: 452–3). Since all the examples are substantival, it seems likely that *preṃtsa* had become substantivised in the meaning ‘a pregnant person’, although we cannot rule out that it was also used attributively outside the narrow scope of medical texts.

The second word with ties to the *ntsa*-formation is ^B*aknātsa*, ^A*āknats* ‘fool(ish)’. For many years, the word was considered a part of this group, since the occupational

³⁶¹ See Sieg & Sieglings (1953: 313). The text exhibits other late features, e.g. a5 *śwale* < prs.ger. *śwalle* ‘is to eat’ (Peyrot 2008: 66), so the lack of the nasal in the suffix may be explained that way. On the other hand, the perl.sg. *šukaunsa* ‘week’ has not undergone monophthongisation, so Peyrot (2008: 222) classifies the text as classical/late.

³⁶² The text continues: W33 a4–5 *kuñci*³⁶⁵ (*taṣṣe ṣa*) *lypesa špärikaṣalle tumem pärwentsai mālasa yokalle* “it is to be dissolved in sesame oil, then it is to be drunk in aged *mālo*”.

suffix was read ^B*-ttsa* rather than ^B*-ntsa*, e.g., *wapattsa* (THT 375 a4) ‘weaver’; see Krause (1952: 47), Hilmarsson (1991b: 124–5), Adams (1999: 576). With Schmidt’s corrected reading of the suffix to *-ntsa* (Schmidt 2001: 20 fn. 17), the relationship between ^B*aknātsa*, ^A*āknats* and ^B*-ntsa*, ^A*-nts** has become more obscure.

There is no verbal stem in either Tocharian languages from which this form could have been synchronically produced. The verbal root *knā-* ‘know’ is found in Tocharian A where it exhibits a unique stem pattern: *nā-prs*. [6] *knānā-*, *s-prt*. [3] *kñas*-³⁶³ and *ñ-sbj*. [7] *kñāñā/a-*. A possible cognate is found in ^B*nana-* ‘recognise’ if it derives from PT **kna-na-* (Malzahn 2010: 679; Peyrot 2013a: 440–1).

Table 5.9: Paradigm of ^B*aknātsa*, ^A*āknats* ‘fool(ish)’

	TB	TA
nom.sg	<i>aknātsa</i>	<i>āknats</i>
obl.sg	com. <i>aknātsai-mpa</i>	<i>āknatsām</i>
gen.sg.	—	—
nom.pl.	<i>aknātsañ</i>	<i>ākntsāñ</i>
obl.pl.	<i>aknātsamts</i>	
gen.pl.		<i>ākntsāśsi</i>

Nonetheless, there are significant similarities between ^B*aknātsa*, ^B*āknats* and the occupational suffix ^B*-ntsa* (^A*-nts**). They follow the same declension (see Table 5.2) and neither show any gender distinction. In other ways, the word patterns more like some of the other NC-formations, in that it is used both as an adjective (ex. 143 and 144) and as a substantive (ex. 145 and 146); see Hackstein (2012: 156).

143 TB THT81 a2–3

walo ^{nom.sg}*aknātsa* *su mārsau şañ añm atsaik ñem araṇe*-^{a3}*mi yāmşate ñiśś erkatte*
 “The foolish king, by the name Araṇemi, having even forgotten himself, treated me scornfully”³⁶⁴

³⁶³ The analysis of the pivotal 2sg. form *kñasüšt* (A340 b5) has been debated since Sieg, Siegling & Schulze (1931: 435); see 2.5.2 for discussion and references.

³⁶⁴ See Couvreur (1954c: 100): “Een onwetende koning, die zichzelf [hierbij] helemaal is vergeten, met name Araṇemi, heeft mij [...] vernederd”.

144 TA A117 b5

¹ *mkälto āknats*_{nom.sg.} *āco tās* ^{b6} ///

“When the embryo is small and **unknowing**, [...]”

145 TB THT31 b3

*ce cmelše yarke petisa triketär ramt āknātsa*_{nom.sg.} *onwaññe śaul paktär*

“Through veneration and flattery of this birth, it is as if **the fool** is confused and trusts an eternal life”³⁶⁵

146 TA A80 a4

/// *mätne āknats*_{nom.sg.} *mätne triḡsant mät(n)e p* ///³⁶⁶

“like **a fool**, like a mistaken person, like a ...”

Finally, there is ^B*lāntsa*, ^A*lānts* ‘queen’ which is certainly substantivised; see ex. 147 and 148. It has no synchronic derivational base, but is related to several words in the same semantic sphere, including its male counterpart ^B*walo*, obl.sg. *lānt*, ^A*wäl*, obl.sg. *lānt* ‘king’, the abstract ^B*lantuññe*, ^A*lāntune* ‘kingship’ and the verb ^B*wlawā-*, ^A*wlāwā-* ‘control oneself’ (Adams 2013: 631). ^B*lāntsa*, ^A*lāmts* does not follow the inflection of the NC-formations; see Table 5.10.

147 TB IOLToch90 a5

/// (*m*)*ālika lāntsa*_{nom.sg.} *lāntās weña* ·

“**Queen** Mālīka said to the king”

148 TA YQ3.1 a8

(*k_ule*)*wāsaṃ klyomiṃ śākiṣi lāmts*_{nom.sg.} *gautami* :

“The Śākya **queen** Gautami, noble among women”³⁶⁷

³⁶⁵ See Schmidt (1974: 174): “Durch die Verehrung [und] Schmeichelei dieser Existenz ist der Törichte förmlich verwirrt [und] vertraut auf ein ewiges Leben.”

³⁶⁶ This line is spoken by Bhadrā, most likely referring to herself and can therefore be taken as an example of feminine reference; see Sieg (1952: 16–7).

³⁶⁷ See Ji, Winter & Pinault (1998: 144–5).

Table 5.10: Paradigm of ^B*lāntsa*, ^A*lānts*

	TB	TA
nom.sg.	<i>lāntsa</i>	<i>lānts</i>
obl.sg.	<i>lāntso</i>	<i>lāntsām</i>
gen.sg.	<i>lāntsoy</i>	<i>lāntse</i>
nom.pl.	<i>lantsona</i>	<i>lāntsañ</i>
obl.pl.	—	<i>lāntsas</i>

(Adams 2013: 594; Del Tomba 2023: 84–6)

5.2.5. Tocharian B *-ca*

The suffix *-ca* is only found in Tocharian B. The words with this suffix form a quite homogeneous group. Synchronically, it is not clear whether the suffix is *-uca* and added to the subjunctive stem or *-ca* and added to the preterite participle (Krause & Thomas 1960: 97, 189; Adams 2015: 141; Itkin & Kuritsyna 2020: 94–7).

The base verbs share a lot of features: All verbs but one are transitive, all but one have an *a*-prt.[1] mostly next to an *a*-subj.[5], half of them are made to verbs with nasal presents, and most of them form a unduplicated preterite participle in *-u*, *-oṣ*. For most of the verbs it is also the case that no other agent noun formation is attested. There are six forms that do not adhere to this general pattern; see Table 5.11.

The clear outlier of the list is *ynūca*. On no parameter does it agree with the rest. It is clearly neither formed from the preterite stem (suppletive root *m-*, *s*-prt.[3]) nor on the preterite participle which shows the curious stem variant *yk-*. The stem variant *yn-* on the other hand is only found in the present stem: prs.1pl. *ynem*, 3pl. *yanem*, prs.ptcp. *ynemane*. Remarkably, this variant is also found in an *ñca*-form *yneñca* as we saw above (5.2.1). This form is only attested twice: *yneñca* (PKAS7K a1), *y(ne)ñcai* (PKAS6H b2), whereas *ynūca* is attested 17 times. Since *ynūca* could not have been formed productively to the preterite participle, it is most likely the more archaic formation of the two.

Table 5.11: List of forms with the suffix ^B-ca

ca-form	TB root		[prs. – sbj. – prt.]	val.	prt.ptcp.
<i>kārkauca</i>	<i>kərka-</i>	‘steal’	[6 – 5 – 1]	tr.	<i>kārkau</i> , -oṣ
<i>kārsaUCA</i>	<i>kərša-</i>	‘know’	[6 – 5 – 1]	tr.	<i>kārsau</i> , -oṣ
<i>kālpauca</i>	<i>kālpa-</i>	‘obtain’	[9 – 6 – 1]	tr.	<i>kālpau</i> , -oṣ
<i>kārstaUCA*</i>	<i>krəsta-</i>	‘cut off’	[6 – 5 – 1]	tr.	<i>kārstau</i> , -oṣ
<i>tārkaUCA</i>	<i>tərka-</i>	‘release’	[6 – 5 – 1]	tr.	<i>tārkau</i> , -oṣ
<i>pālkaUCA*</i>	<i>pālka-</i>	‘see’	[S – 5 – 1]	tr.	<i>pālkau</i> , -oṣ
<i>pālskaUCA</i>	<i>pləska-</i>	‘think’	[6 – 5 – 1]	tr.	<i>pālskau</i> , -oṣ
<i>ynuca</i> , <i>ynūca</i>	<i>y-</i>	‘go’	[1 – 1 – S]	itr.	<i>yku</i> , -weṣ
<i>yaṣṣūca</i>	<i>yask-</i>	‘beg’	[9 – 2 – 1]	tr.	<i>yayāṣṣu*</i> , -oṣ ^α
<i>wayauca</i>	<i>waya-</i>	‘lead’	[S – 5 – 1]	tr.	<i>wawāyau</i> , -aṣ
<i>wārpauca</i>	<i>wərpa-</i>	‘enjoy’	[6 – 5 – 1]	tr.	<i>wārpau</i> , -oṣ
<i>waltsauca*</i>	<i>waltsa-</i>	‘grind’	[6 – 5 – 1]	tr.	<i>wawāłtsau</i> , -aṣ
<i>sampauca</i>	<i>samp-</i>	‘remove’	[9 – 5 – 1]	tr.	<i>sassāmpau*</i> , -aṣ ^β
? <i>pānnaUCA*</i>	<i>pənn-</i>	‘stretch’	[2 – 5 – 1]	tr.	<i>pānnau</i> , -oṣ

S = suppletive stem

^α Only obl.sg. *yayāṣṣoṣ* is attested (IOLToch7 b1, IOLToch941 b2).

^β Only obl.sg. *sassāmpaṣ* is attested (PKAS7K a4, PK DA M 507.37 and .36 line 44).

The only other *ca*-form with a competing *ñca*-formation is ^B*kālpauca* (THT31 a2), found next to *kālwāṣṣeñcai* (SHT7, 1739) (Malzahn 2010: 588).³⁶⁸ The latter form is a gloss for Sanskrit *prāpiṇam* ‘den Erlangenden’ (Schmidt 1990: 475). Comparative evidence from Tocharian A shows that the *nəsk*-prs.[10] attested in Tocharian B for this verb is secondary, having pushed the original nasal present into the subjunctive: *nā*-prs.[6] mid.1sg. ^A*kālpnāmar*, *ā*-sbj.[5] mid.1sg. ^A*kālpāmār*. This change must have prompted the creation of an innovative *ñca*-form from the new present stem. It also means that ^B*kālpauca* most likely followed the general pattern for the *uca*-type (*na*-prs.[6], *a*-sbj.[5], *a*-prt.[1]) at an archaic stage. A very similar argument can be made

³⁶⁸ The form *kālpāṣṣukim* (THT330 a5) rather belongs to *kālp*- ‘steal’ (Schaefer 1997: 167–8); see 5.2.6.

for *sampaucā* to *samp-* whose cognate in Tocharian A *sumā-* ‘remove’ has a *nā*-prs.[6] and an *ā*-sbj.[5]: cf. *nā*-prs.[6] mid.3sg. *sumnātār*, vn. *sumāl_une*.

There are two words that are formed to verbs with suppletive presents. The first is ^B*pālkauca** ‘seer’, abstracted from *pālkaucakka* ‘fortune teller’ (THT529 a1), a derived feminine translating Skt. *ikṣaṇikā* ‘fortune teller’ (f.) (Malzahn 2013b: 112). The basis for the form is the stem ^B*pālka-* ‘see’ (prt.ptcp. *pālkau* ‘seen’), which has the present stem ^B*laka-* (forming an *a*-prs.-sbj.[5] and an *sk*-prs.[9]). The second form is ^B*wayauca* ‘guide’, formed to ^B*waya-* ‘lead’ (prt.ptcp. *wawāyau* ‘led’) with the present stem ^B*ak-* (prs.[2]). In the case of ^B*ak-*, an *ñca*-form is attested side by side with *wayauca*: obl.sg. *ašeñcai* (THT303.b a1), nom.pl. *ašeñcañ* (IOLToch2 a2). Unfortunately, neither formation is attested well enough for any functional or semantic difference to be discernible. A likely scenario for both verbs is that the *ca*-form was created before the two stems merged in one paradigm.

The final form that does not fit the mould is ^B*yaṣṣūca* which is lexicalised in the meaning ‘beggar’ (Itkin & Kuritsyna 2020: 96). The verb ^B*yask-* ‘ask for, beg’ has the following stem pattern: *sk*-prs.[9], *’ə/e*-sbj.[2], *a*-prt.[1]. Also in this case, the subjunctive stem must reflect the original *’ə/e*-prs.[2], which has been ousted by the creation of a new *sk*-prs.[9]. From an Indo-European perspective, this present ultimately goes back to a **ske/o*-present with the *-*sk-* of the suffix reanalysed as part of the root in Proto-Tocharian (Hackstein 1995: 185–6). ^B*yaṣṣūca* is probably derived from ^B*yāṣṣu* ‘alms’, which looks like a preterite participle that has undergone contraction from **yayaṣṣu*.³⁶⁹

According to Couvreur (1954a: 82), followed by Adams (2013: 397), an additional *ca*-form is found in IOLToch27 a2: obl.pl. *pān[n]ocaṃ*. This form is supposedly derived from ^B*pānn-* ‘stretch’ (^A*pānw-* ‘id.’), which forms an *’ə/e*-prs.[2], an *a*-sbj.[5] and an *a*-prt.[1]. The attestation is not completely assured, as there is a hole in the lower part of the second akṣara; it can be either <nno> or <nto>. Peyrot (2007: IOL Toch 27) reads <nto>, which does seem more likely when one compares the akṣara with other *n*’s of the manuscript, e.g., <nne> in a4. However, the resulting form, *pāntocaṃ*, is quite obscure, and unfortunately, the context provides little help.

Syntactically, the *ca*-formation behaves similarly to the other *NC*-formations; in ex. 149, an *ca*-form is found in exactly the same context as an *ñca*-form. They are predominantly used substantivally (ex. 150 and 151). However, there are several

³⁶⁹ Note that the attested preterite participle to this verb is in fact ^B*yayāṣṣu*, -oṣ; if ^B*yāṣṣu* is the older form, the restoration of the reduplication could have pushed the contracted form to become nominalised.

instances of *ynūca* in attributive position (ex. 152).

149 SIP1 b4

/// *nermit yāmṣeñcai*_{voc.sg.} *wnolmen okt-yaknes=astareṃ · nervānāṣṣai kentsa*
*śaiṣṣe tārkaucāi*_{voc.sg.} *eṃṣketstse*

“(…) ^[c] **o you who fashion** living beings according to the eight-fold pure way, ^[d]
o you who release forever the world on the ground of Nirvāṇa”³⁷⁰

150 THT27 b6

*kakārpaṣ wīkāskem pālskaucañ*_{nom.pl.} *marantse śanmau kleśaṣṣe*

“**The thinkers** that have descended [it] will drive away the *kleśa* fetters of
Māra.”³⁷¹

151 THT4 a3

/// (*sruka*)*lñe ste sampauca*_{nom.sg.}³⁷²

“**death is the one who takes away**”³⁷³

152 IOLToch4 a4

*lāklentse prutkālyñene ynūca*_{nom.sg.} *oktatsa klyomñā ytārye*_{nom.sg.} *klyomomṣ*
empremṣsūññe

“the eight-fold noble **path** leading to the suppression of suffering is the truth of
the noble ones”³⁷⁴

Likewise, while the *ca*-forms mostly take objects in the oblique (ex. 149, 153), there are instances of genitive assignment (ex. 154). These instances are found the Udānālaṅkāra and are thus probably calqued from Sanskrit; in ex. 153 and 154, we can even see how case agreement differs within a single Udānālaṅkāra text. See also Fellner (2017: 81 fn. 13).

153 THT27 b3

(*mā lkā*)*tsiś aittaṅka prere*_{obl.sg.} *kārstaucā*_{nom.sg.}³⁷⁵

“... he is **the cutter of the arrow** directed towards the un-seeing’

³⁷⁰ Trsl. by Pinault (2016: 15).

³⁷¹ Trsl. by Peyrot (2013a: 383).

³⁷² Restoration by Sieg & Siegling (1983: 146).

³⁷³ Trsl. by CEToM, ed. H. Fellner, accessed 2 October 2023.

³⁷⁴ Lit.: ‘the to-the-suppression-of-suffering-going eight-fold noble road is the truth of the noble ones’.

³⁷⁵ See restoration and translation by Carling (2000: 351): “... er [ist] der Abschneider des *auf*

154 THT27 b4-b5

*yokaiṣṣe prerentse*_{gen.sg.} *kārstau*^{b5}(*ca*)_{nom.sg.} ///
 “the cutter of the arrow of thirst”³⁷⁶

There is no decisive evidence showing either adjectival or adverbial modification. There are, however, indications that the *ca*-forms are still integrated in the verbal paradigm to some extent since they seem to be able to participate in a phrasal construction: *cowai tārka*- ‘rob’ (^B*tārka*- ‘let go’); see ex. 155.

155 THT22 a3

*cowai tārkauca*_{nom.sg.} *cowai tārkau mäske(tār)*
 ‘the robber becomes the robbed’

In its inflection, the ^B*ca*-formation follows ^B*ñca* and shows both the substantival genitive and vocative singular endings: gen.sg. *ynūcantse* (PKAS6B a1), voc.sg. *tārkaucai* (SIP1 b4). There is no direct evidence for or against gendered inflection.³⁷⁷ Semantically, the majority of cases seems to be actual agent nouns. Apart from *ynūca*, there are no examples of attributive use. Since this form is so aberrant compared to the rest of the group, it is possible that there is a separate story attached to it. Adams (2013: 560) does not take it as an *ca*-form, but as a type of derived adjective. However, it seems more likely that *ynūca* and the other *ca*-forms share a history, although the exact interpretation remains difficult.

A large proportion of the attestations of *-ca* is found in translations of the Udānavarga. Here, they translate forms in *-tār-*, *-ín-* as well as root nouns such as *-jñā*- ‘knowing, knower’ (Fellner 2017: 82). Comparing Table 5.12 with Table 5.4 (p. 258), it is evident that the formations in ^B*ñca* and ^B*ca* are completely parallel in usage. In fact, they are in almost perfect complementary distribution with the *ñca*-formation which is mostly limited to thematic presents stems, while almost all *ca*-forms are formed to verbs with non-thematic presents.

das (Nicht)sehen gerichteten Pfeiles.”

³⁷⁶ Cf. Uv. XII 10c *trṣṇāśalyanikṛntanaḥ* (m.nom.sg.).

³⁷⁷ It is possible that the derivative feminine plural *-na* is found once in *kārkaucana* (IOLToch208 a8), but because of the fragmented context it could also be read as *kārkaucana*///.

Table 5.12: Parameters for the ^B*uca*-formation

realm	parameters	in favour of agent noun	in favour of participle
syntax	object in the	(genitive)	oblique
	modification by	—	—
	attributive use		yes
morphology	inflection is	substantival	
	gendered inflection	—	—
meaning	translation of Sanskrit	agent nouns	
	semantics are	permanent	

5.2.6. Tocharian B *-uki*

There is one more formation which, although it is not formed with an *NC*-suffix, should be treated alongside them. The Tocharian B suffix *-uki* forms agent nouns from the present stem of a handful of verbs with sigmatic presents, and it has long been acknowledged as an equivalent formation to the agentive *NC*-forms (Dietz 1981: 6). Traditionally, this formation is described as a type of *nomen agentis* that refers to a person or an object “die die betreffende Tätigkeit wiederholt oder berufsmäßig ausübt” (Krause 1952: 45).

The distribution of the *uki*-forms is curious. Besides two professional titles, *yirpʃuki* ‘overseer, inspector’ and *klāʃuki* ‘conveyor’, only one form is attested more than once.³⁷⁸ The *uki*-forms are littered across the corpus; there are a few cases in archaic texts, a few in classical texts, and a handful in late texts. The late forms cluster in two leaves belonging to the same text, THT330 and THT331 (Peyrot 2008: 96). There is some contention about the derivational base for *kālpaʃʃuki**, as morphologically, it could also be derived from ^B*kəlp-* ‘steal’ as well as ^B*kəlpə-* ‘obtain’. However, on the basis of a suggestion by Winter (1961: 93–4), Schaefer (1997: 167–72) has shown through comparison with similar texts in Pāli, Chinese, and Tibetan that the word must mean ‘stealing; thief’. It is thus derived from ^B*kəlp-* ‘steal’, which fits the vocalism of the better in any case: *kālpaʃʃuki** /kəlpəʃʃəwkəy/ rather than †*kālpaʃʃuki* /kəlpəʃʃəwkəy/.

³⁷⁸ The partly restored perlativ plural *a(ksaʃ)ʃukintsā* (THT133 b5) next to nominative singular *aksaʃʃuki* (THT331 b3).

The corpus of *uki*-forms was treated by Schaefer (1997). She disputes the claim by Krause (1952: 45) that they are habitual or professional agent nouns on both semantic and syntactic grounds, putting forward an example that supposedly shows attributive use of an *uki*-form (*tanmaşuki* in THT₁₉₇ b3–4, ex. 156 below; Schaefer 1997: 165). However, in a recent edition of THT₁₉₇, Catt, Huard & Inaba (2020) propose a new translation in which *tanmaşuki* is used substantivally. In any case, THT₁₉₇ is a late Abhidharma text full of highly technical language translated from Sanskrit. We therefore cannot be certain that the text shows natural Tocharian B syntax.

156 THT₁₉₇ b3–b4

*tarya vedantats putkau tanmaşuki*_{nom.sg.} ^{b4}*vişai*_{a.nom.sg.} *mā nesān*³⁷⁹

“That which gives rise to the three distinctions of the *vedanā* is not the external object (*vişaya*) [alone].”³⁸⁰

There are better examples of predicative and substantival usage (ex. 157 and 158, respectively). Ex. 157 further shows that the *uki*-formation could partake in phrasal constructions, cf. *epiyac källāsträ* (IOLToch₁₂ b7) ‘he remembers’ (lit. ‘bring to memory’).

157 THT₃₃₀ b5

*epyaś klāşşuki*_{nom.sg.} *mā nesan-ne* ///

“he has no reminder”³⁸¹

158 THT₁₃₃ b5

*pärsk-ā(ksaş)şukintsā*_{perl.pl.} *lyäk*

“the thief feared for informants”

³⁷⁹ The form *tanmaşuki* is a late form of *tanmäşşuki* (Catt, Huard & Inaba 2020: 188).

³⁸⁰ Trsl. by Catt, Huard & Inaba (2020: 195).

³⁸¹ See translation by Peyrot (2013a: 699): “he has nobody to remind him, ...”.

Table 5.13: Attestations of the ^B*uki*-formation

form	TB root		attestation
<i>aksasşuki</i>	<i>aks-</i>	‘announce’	THT331 b3, THT133 b5
<i>erşuki</i> [*]	<i>er-</i>	‘evoke’	THT2237 b4
<i>klāsşuki</i>	<i>kəla-</i>	‘lead; bring’	THT330b5, PKDAM507.34 a9, a11, a13, a17
<i>kālpaşşuki</i> [*]	<i>kəlp-</i>	‘steal’	THT330 a5
<i>tanmaşuki</i>	<i>təmnəsk-</i>	‘beget’	THT197 b3
<i>yamaşuki</i>	<i>yam-</i>	‘do’	THT132 b6
<i>yirpşuki</i>	<i>yərp-</i>	‘venerate’	^β
<i>weşşuki</i>	<i>weñ-</i>	‘speak’	IOLToch43 b1
<i>şärpşūki</i> [*] ^α	<i>şərp-</i>	‘point out’	THT330 a2
<i>şparkäşşuki</i> [*]	<i>şpərk-</i>	‘let perish’	THT330 a5

^α Attested in the abstract noun *şärpşūkiññesa* (perl.sg.).

^β Attested over a dozen times, only in Qizil documents (Ching 2010: 484): THT460 a2, a6, THT464 a2, THT466 a3, THT467 a3, THT472 a3, THT2748 a5, THT2752 a3, THT2773 a2, THT2791 and 2928 a3, THT2901 a3; partly restored in THT464 a4, THT465 a3, THT473 a2, THT2788 a1, a2.

In ex. 159, we find an *uki*-form and an *ñca*-form juxtaposed. It seems likely that ^B*weşşuki* is interchangeable with the form ^B*weşşeñca*; at least, there is no discernible difference in their meaning.

159 IOLToch43 b1

(*parā*)*käşş(e)ñca wat weşşuki*_{nom.sg.} *wat wrantsai*_{adv.} *karsa(r)-m(e)* ///

“Either making prosper or **contradicting** (lit. ‘speaking against’), let us know!”³⁸²

The outlier *yirpşuki* does not take part in many of the above mentioned constructions. According to Ching (2010: 338, 478), it is a type of layman working as an overseer in the monasteries, alongside a female ‘measurement-checker’ called a *yirmakka*^{*}. It is derived from the verb *yərp-* ‘observe, oversee’ and is primarily found in constructions of this type found in ex. 160.

³⁸² Trsl. by CEToM, ed. M. Peyrot & H. Fellner, accessed 2 October 2023; my addition in brackets. For the causative *ipv.mid.2sg.-obj.pl. karsar-me*, see Malzahn (2010: 96).

160 THT466 2–3

/// *Yirmakkai Kimñantse kapci* ///^{a3} /// *Yirpşuki*_{nom.sg.} *Putteyānentse kapci*
 “the thumbprint of Kimña, the measurement-checker [...] thumbprint of
 Putteyāne, **the overseer**.”

Schaefer (1997: 167) suggests that *yirpşuki* could be taken as an adjective, referring to the person doing the current act of overseeing, rather than a title describing a profession. This is unlikely for two reasons; firstly, *yirpşuki* is attested almost exclusively preceding the personal name *Puttayane* who most likely performed the overseeing professionally. Secondly, the use of the nominative *yirpşuki* rather than the oblique in ex. 160 rules out the possibility of attributive use. Granted, this is also strange if *yirpşuki* is a title since we would expect *Gruppenflexion*. We can see this from another administrative text, in which *klāşuki* is attested under the same circumstances, this time in the oblique: *klāşukim Kercapi(şk)ent(s)e kapci* (PKDAM507.34 a11) ‘the thumbprint of Kercapiške, the conveyor’. Adams (2013: 542) gives the literal translation ‘the inspector; the thumbprint of P.’. It is, however, difficult to see any actual difference in meaning in these fragmentary texts. There is the possibility that *klāşuki* is less lexicalised than *yirpşuki* since it is found outside the administrative monastery texts, but that could also be a coincidence due to missing attestations. In any case, the way both forms are used in these texts implies that they are completely substantivised. Apart from these two forms, the *uki*-formation seems to be functionally very similar to the *ñca*- and *uca*-formations; however, we would need better evidence for attributive use to be sure.

There is no evidence showing whether *-uki* has gendered inflection. There is, however, one instance of an abstract noun derived from an *uki*-form that refers back to a woman (ex. 161).

161 THT330 a2

*şamāne ytāri mā aištār klyiye ytāri şārşūkiññesa*_{abst.perl.sg.} *yaṃne anāpatti*
 “If a monk does not know the way, (and) a woman travels the road with him in
 the capacity of a guide, it is not an offense”³⁸³

5.2.7. Tocharian A *-nt*

In Tocharian scholarship, three types of *nt*-formations are attributed to Tocharian A:

³⁸³ See Schmidt (1974: 178): “Wenn ein Mönch den Weg nicht kennt [und] eine Frau in der Eigenschaft eines Wegweisers mit ihm geht, [so liegt] kein Vergehen [vor].”

a participle or nomen agentis in *-nt* equivalent of ^B*-ñca*, a lexicalised nomen agentis in *-nt* equivalent of ^B*-nta*, and a nomen agentis in *-nts* equivalent of ^B*-ntsa* (Malzahn 2010: 484; Pinault 2012b: 179–80). There is some disagreement about which *nt*-forms belong to the first type and which to the second. The traditional view lists 6 lexicalised nomina agentis: ^A*pekant* ‘painter’, ^A*tsepant** ‘dancer’, ^A*rāpant** ‘musician’, ^A*āsant** ‘leader’, ^A*koṣant** ‘killer, executioner’, ^A*prakṣant** ‘interrogator, judge’ (Sieg, Siegling & Schulze 1931: 12; Malzahn 2010: 484–5; Pinault 2012b: 180). Fellner (2014b: 53; 2017: 73), on the other hand, divides this type into two Tocharian A formations, a participial *-nt* equivalent to TB *-nta* and a completely substantival *-nt* including only ^A*pekant*, ^A*tsepant**, and ^A*rāpant**. These three words differ from all the other Tocharian A *nt*-forms in that they are not formed to the present stem, cf. root prs.[1] act.3sg. *pikāṣ*, 3pl. *pikiñc* ‘paint’, prs.act.3pl.³⁸⁴ *rpeñc* ‘make music’, root prs.[1] act.3pl. *tsipiñc* ‘dance’. They are accompanied by nomina actionis: ^A*peke* ‘painting’, ^A*rape* ‘music’.³⁸⁵ The remaining three forms are included in this group, partly because of their lexicalised semantics and because *koṣant** and *prakṣant** have Tocharian B *nta*-equivalents: *kaṣenta* and *prekṣenta*.⁷⁸ It is worth noting, however, that ^A*āsant** ‘leader’ has the Tocharian B counterpart *ašeñca*.

Unlike ^B*-ñca*, the Tocharian A *nt*-suffix is not limited to thematic stems; it is found with a root prs.[1], e.g., nom.pl. *trāñkāntāñ* to ^A*trāñk-* ‘speak’, *a*-prs.[3], e.g., gen.sg. *ritwantāp* to ^A*rāytwā-* ‘be connected’, *a*-prs.[4], e.g., gen.pl. *sparcwāntaśśi* to ^A*spārtwā-* ‘turn (intr.)’, *ā*-prs.[5], e.g., nom.sg. *lkānt* to ^A*lākā-* ‘see’, and *nā*-prs.[6], e.g., nom.sg. *kārṣnānt* to ^A*kārṣtā-* ‘cut up’. All forms with an *nt*-suffix follow the same declension; see Table 5.2. The forms can have masculine (ex. 162) as well as feminine reference (ex. 163).

162 A384 a5

*käryäṣ sam*_{m.nom.sg.} *tanne wkāñyo kārṣnānt*_{nom.sg.}

“he considers, (and) in that way he is a knower”

163 A341 b3–b4

(*sā*)^{b4}*m*_{f.nom.sg.} *ās ek śwānt*_{nom.sg.}

“she is a she-goat, eating fodder”³⁸⁶

³⁸⁴ Either an *’ä/a*-prs.[2] (Malzahn 2010: 818) or an *ā*-prs.[5] (Peyrot 2013a: 802).

³⁸⁵ TB *tsaipe** ‘dance’ may suggest the possibility of *†tsepe* in Tocharian A. There is at least one other instance with this correspondence: ^B*traike*, ^A*treke* ‘confusion’ to ^B*träyka-*, ^A*träykā-* ‘be confused’.

³⁸⁶ The restoration of the feminine demonstrative pronoun is secured by the context; see A341

With regard to syntactic use, Fellner (2017: 76–8) shows that the Tocharian A *nt*-formation is used both attributively (ex. 164), predicatively (ex. 165), and completely substantivised (ex. 166).

164 A394 a1

*paṃṣāntās*_{obl.pl.}³⁸⁷ *wrasaśśi*_{gen.pl.} *sñi tsaryo elant (eṣā)*
 “he [gave] alms **to the begging beings** with his own hand”

165 YQ2.7 a8

/// *p_ukis was*_{pron.1pl.nom.} *praski arṣāntāñ*_{nom.pl.}
 “to everyone **we are the evokers** of fear”

166 A230 a2

(*cì*)ñcār mā weñäṣ *klyosāmṣantāñ*_{nom.pl.} *mā-rtantä(r)*
 ‘if he does not say kind [things], **the listeners** do not approve”³⁸⁸

This is also the case for the proposed lexicalised *nt*-form *koṣant*- ‘killing, killer’; see ex. 167 for attributive use and ex. 168 for substantival use.

167 A75 a2

*koṣāntām*_{obl.sg.} *śarwnam*_{obl.sg.} *pālkāc-äṃ kārurṃ*
 “See his compassion towards **the murdering hunter**”³⁸⁹

168 A81 b3

/// *koṣāntāśśi*_{gen.pl.} *tsaram toräṣ kossi wotkaṣt*
 “when you gave me in the hands **of the executioners** and ordered them to kill...”³⁹⁰

The form ^A*āśant** is attested exclusively as a substantive mostly rendering Sanskrit *sārathi* ‘driver’ (ex. 169 and 170). Likewise, the one attested instance of ^A*prakṣant** seems to be substantival and mean ‘judge’ (ex. 171).

a8: *tmäk sām ās tāk ek śwātsy o(sāt)* /// “then she became a she-goat (and) began to eat fodder”.

³⁸⁷ For expected **pāṃṣāntās*.

³⁸⁸ Trsl. by Peyrot (2013a: 641).

³⁸⁹ Trsl. by CEToM, ed. G. Carling, accessed 2 October 2023.

³⁹⁰ Trsl. by Carling & Pinault (2023: 156).

169 A361 6

*ime pāṣluneyum āśand*_{nom.sg.}‘protective **guide** of consciousness’³⁹¹

170 A247 a1

*wināsam-ci sārth āśāntāñ*_{obl.sg.} *sne lyutār*‘I honour you, **the driver** of the caravan, unsurpassed’

171 A222 a2

*lāñc āmāsāñ ṣoṣtāñkāñ sne pältikāñ prakṣāntāñ*_{nom.pl.}‘kings, ministers, tax collectors, outlaws, **judges**’³⁹²

However, the lack of attributive examples is not exclusive to these two verbs; it is also the case for ^A*arṣant* ‘evoking’, ^A*kāllant* ‘bringing’, ^A*kārṣnānt* ‘cutting off’, ^A*nākṣant* ‘destroying’, ^A*spārtwṣant* ‘behaving’ and several others. While this could be due purely to the limitations of the Tocharian A corpus, it most likely indicates that the *nt*-forms have a general tendency towards substantival usage.

On the other hand, there is no doubt that *nt*-formation exclusively takes an object in the oblique case (see ex. 165, 169 and 170); there are no examples of genitive assignment. In addition to this, the *nt*-formation seems only to be modified adverbially (ex. 172).

172 A124 a2

*sne mem*³⁹³ *śwāntāñ*_{nom.pl.} *sne mñe praṣtā ṣol cem nākseñc*‘those who eat without measure, they lose (their) life at an unexpected time’³⁹⁴

There is also evidence that the *nt*-forms can partake in phrasal verb constructions (ex. 173).

³⁹¹ Rendering (*vicārara*)*kṣasārathī* ‘leader-guardian of discernment’; see Sieg & Siegling (1921: 202), CEToM, ed. G. Carling, accessed 2 October 2023.

³⁹² See CEToM, ed. G. Carling & A. Musitz, accessed 8 February 2024.

³⁹³ TA *sne mem* is a fixed adverbial phrase of *sne* ‘without’ and *mem* m. ‘measure’ meaning ‘without measure, innumeraably’ (Carling & Pinault 2023: 352).

³⁹⁴ For *sne mñe* ‘uncertain’, see Pinault (1994b: 379–81), Carling (2000: 285).

173 A21 a5

*puk pārkluneytwāśši ākypant*_{nom.sg.}³⁹⁵
 “making an end to all the questions”

In the case of ^A*pekant* ‘painter’, ^A*tsepant** ‘dancer’ and ^A*rāpant** ‘musician’, however, the syntactic situation is different. Both *tsepant** and *rāpant** are attested in one text only, A301, as substantives (ex. 174 and 175).

174 A301 b1

/// || *tmanāk šāk tmām salu rā(pā)ntāñ*_{nom.pl.} *tsepāntāñ*_{nom.pl.} *wsāši*^{b2} ///
 “Right then, a total of six thousand **musicians** and **dancers** ... golden”

175 A301 b4–5

tāmam kanam tsar peyo abhinai ypār tsepāntā^{b5}(*ñ*)_{nom.pl.} ///
 “there with hand and foot **the dancers** performed the pantomime to the melody”

The same is true for ^A*pekant* which enjoys a much more extensive attestation. It is only found in substantival usage (ex. 176) and it is modified by adjectives (ex. 177).

176 A9 b5

*ālak peke ālak pekant*_{nom.sg.} *kyał mā kāršnāt*
 “One is the painting, the other the **painter**, why do you not recognise that?”³⁹⁶

177 A5 a5

*māmtnē ālyākyām praṣtam ālak*_{nom.sg.} *saṃ*_{nom.sg.} *pekant*_{nom.sg.} *yaṃtrācāres waṣṭā*
lokit yeṣ
 “Just like at another time **some other painter** went as a guest to the house of a mechanic”³⁹⁷

The syntax shows that the separation of Tocharian *nt*-forms into two groups depending on their counterparts in Tocharian B is artificial. While the professional titles (^A*pekant*, ^A*tsepant**, and ^A*rāpant**) are both morphologically and syntactically

³⁹⁵ Phrasal construction *āk yam*- ‘make an end, finish’: /// *saṃsārṣiṃ nātkis kene kri tāṣ āk yatsi* (YQ2.3 b8) “/// Whosoever intends to put an end to Saṃsara the master” (Ji, Winter & Pinault 1998: 79).

³⁹⁶ See Schmidt (1974: 431): “[Ein] anderes ist das Gemälde, [ein] anderes der Maler, warum weisst du [das] nicht?”

³⁹⁷ Trsl. by CEToM, ed. G. Carling, accessed 2 October 2023.

special, ^A*koṣant**, ^A*prakṣant**, and ^A*āśant** are not. These forms belong to the main type of *nt*-forms and are therefore better compared to the ^B*ñca*-formation from a synchronic perspective. However, it is most likely the case that the ^A*nt*-formation and the ^B*nta*-formation are closely linked diachronically; see 5.4 below.

Table 5.14: Parameters for ^A*nt*-formation³⁹⁸

realm	parameters	in favour of agent noun	in favour of participle
syntax	object in the modification by attributive use		oblique adverbial yes
morphology	inflection is gendered inflection	substantival no	
meaning	translation of Sanskrit semantics are	agent nouns permanent	temporary

5.2.8. The *m*-participle

The facts surrounding the *m*-participle, ^B*-mane*, ^A*-māṃ*, pose fewer questions than the *NC*-formations in terms of function and characterisation. The main matter of debate is whether the *m*-participle has a special affinity with middle voice. This will be treated separately in 5.3. The *m*-participle is formed to the present stem of all classes, except possibly the *ñ*-prs.[12] in Tocharian B;³⁹⁹ see Table 5.15. In the relevant stem classes, the *m*-participle is preceded by the unpalatalised variant of the stem, cf. ^{ʾə}/*e*-prs.[2] ^B*aikemane* ‘knowing’, *sk*-prs.[9] ^A*yänmāskemane* ‘achieving’, ^{ʾä}/*a*-prs.[2] ^A*tāsmāṃ* ‘putting’ (cf. prs.ger. *tāṣāl*), *s*-prs.[8] ^A*nākāsmāṃ* ‘blaming’ (cf. *nt*-form *nākṣant*).

The *m*-participle is generally uninflected for case, number, and gender. In his

³⁹⁸ Excluding ^A*pekant*, ^A*tsepant**, and ^A*rāpant**.

³⁹⁹ There is one verb with a *ñ*-prs.[12] forming an *m*-participle which look like it is formed to a root prs.[1] stem: (*mi*)*wamane* (THT85 b2) ‘trembling’ to ^B*māyw-* ‘tremble’. Peyrot (2013a: 786 fn. 547) proposes that the *m*-participle may reflect the *ñ*-prs.[12] stem. The same may be the case for *nitta*(*mane*) (IOLToch168 b2) to ^B*nāytt-* ‘break down (itr.)’ (Peyrot 2013a: 765 fn. 372).

study of the usage of the Tocharian participles, Dietz (1981: 74) shows that the *m*-participle is most frequently subordinate to a finite or infinite verb (TB ex. 178, 179, TA ex. 180, 181). This usage can be labelled ‘converbial’⁴⁰⁰ and is never found with the NC-formations (Hackstein 2012: 160; Peyrot 2017: 333).

178 TB THT88 a2

painemeṃ ette kloyomane alyekä kca warttoṣṣe makūltsa tatrāppa-^{a3}remeṃ rūpsa klāya

“**falling down** off his feet, having tripped over some forest root, he fell on his face”

179 TB IOLToch131 b4

mañīya pelaikne klyausemane takarškñesa toṃ tsaiñenta om(t)e (sā)⁴⁰¹ päst marsa

“**Hearing** the law with faith, the female servant forgot the jewels then and there”

180 TA A395 a5

śertmām kāltaṃk⁴⁰² tasmām ṣñi kotär kāmar kropant

“**weeping** and **playing** the drum, they gathered their own family together”

181 TA A23 b3–b4

ākārmunt aśānyo ptāñkāt kāsya(p)^{b4}– kapśaṇñac lkāmām pälskāt

“with tears in his eyes, **looking** at the body of the Buddha-teacher, he thought”

⁴⁰⁰ See also Pinault (2012b: 182) who calls this usage “the function of the present participle proper”. For a definition of a converb, see Haspelmath (1995: 3).

⁴⁰¹ Restoration according to Thomas (1957: 125).

⁴⁰² Uncertain meaning; ‘drum’ is suggested by Pinault; see Carling, Pinault & Winter (2009: 118) with references. The *m*-participle literally means ‘putting, placing’.

Table 5.15: Examples of the *m*-participle

prs.	TB verb		ptcp.	TA verb		ptcp.
[1]	<i>y-</i>	‘go’	<i>ynemane</i> ^a	<i>y-</i>	‘go’	<i>ymām</i>
[2]	<i>ak-</i>	‘lead’	<i>akemane</i>	<i>āk-</i>	‘lead’	<i>ākmām</i>
[3]	<i>prāwtka-</i>	‘be blocked, filled’	<i>prutkemane</i>	<i>trāywā-</i>	‘be mixed’	<i>triwamām</i>
[4]	<i>planta-</i>	‘rejoice’	<i>plontomane</i>	<i>plāntā-</i>	‘rejoice’	<i>plaṃtmām</i>
[5]	<i>sāwa-</i>	‘rain’	<i>swāmāne</i>	<i>māntā-</i>	‘destroy’	<i>māntāmām</i>
[6]	<i>kāta-</i>	‘strew’	<i>kātnāmāne</i>	<i>kārpā-</i>	‘descend’	<i>kārnmām</i>
[7]	<i>pāyk-</i>	‘paint, write’	<i>piṅkemane</i>	<i>spāltkā-</i>	‘make an effort’	<i>spāltāṅkāmām</i>
[8]	<i>ay-</i>	‘give’	<i>aiskemane</i>	<i>e-</i>	‘give’	<i>esmām</i>
[9]	<i>yam-</i>	‘do’	<i>yamaskemane</i>	—	—	—
[10]	<i>kārya-</i>	‘buy, trade’	<i>kārṇāskemane</i>	<i>rāy-</i>	‘give up’	<i>rināsmām</i>
[12]	—	—	—	<i>tuṅk-</i>	‘love’	<i>tuṅkiññāmām</i>

^a With the same stem allomorph as the *ñca*-form ^B*yneñca*.

Peyrot (2017: 334–5) has shown that the converbial use of the *m*-participle in the Tocharian A Maitreyasamiti-Nāṭaka is rendered by the Old Uyghur vowel converb in the Maitrisimit; see Erdal (2004: 311–3) for this formation. Notably, the forms that have been lexicalised as adjectives are rendered by adjectives, e.g.:

TA (<i>kā</i>) <i>tkmām nātsu</i>	YQ 2.15 a5	‘joyful’
OU <i>ögrünčülüg sävinčlig bolup</i>	MaitrHami 2.17 a18-19	‘id.’
TA <i>puk knānmānānt</i>	YQ 2.5 a8	‘all-knowing’
OU <i>tükül bilgä</i>	MaitrHami 2.6 a10-a12	‘fully wise’.

There is a specific construction with a seemingly attributive *m*-participle. In this construction, the *m*-participle modifies an integral part of a person or a person’s body which is invariably in an adverbial case, primarily the instrumental (ex. 182 inst., 183 perl.). This is also the attested in TB (ex. 184 perl.). The construction is also rendered by an Old Uyghur vowel converb; see examples in Peyrot (2017: 336). In Old Uyghur,

this construction is exactly parallel and just as marked as it is in Tocharian A (Erdal 2004: 312).

- 182 TA A79 b3
*(tām kaklyuṣurā)ṣ sām śaru ākāryo paprutkunt aśānyo trapmām rakeyo*_{inst.sg.}
trānkāṣ
 “Having heard this, the hunter says with tear-filled eyes and **with stumbling speech**”

- 183 TA A16 b2
*nmāsmām kapsiññā*_{perl.sg.}
 “**with bowing body**”

- 184 TB THT85 a3
*tārraskemane rekisa*_{perl.sg.} *uttareṃ m(ñcu)ṣ(k)eṃ(śc weṣṣām)*
 “**with soothing speech**, he says to the prince Uttara”

Peyrot (2017: 336) suggests that the construction came about with the meaning ‘[verb]-ing with the [bodypart]’ later to be grammaticalised in the meaning ‘with a [verb]-ing [bodypart]’, although he points out that this would require a highly marked word order in both Tocharian A and Old Uyghur. The fact that the preterite participle also partakes in this construction indicates that it is a participial feature; compare ex. 183 with 185, ex. 184 with 186.

- 185 TA YQ2.14 a8
*ñañmusām*_{obl.sg.} *kapsiño*_{inst.sg.}⁴⁰³
 ‘**with the body bowed**’

- 186 TB THT3597 b6
*papāsausai*_{obl.sg.} *keksentsa*_{perl.sg.} *śetkasta ceṃ cāk =aurce śār maiyartsa*
 “**over your flayed body**, you let them cross over the wide river because of (your) friendship”

In Tocharian B, there are instances of inflected *mane*-participles, but only in the genitive, locative, and perlative singular. They are attested in either bilinguals or in other renderings of Sanskrit originals; see ex. 187 (Dietz 1981: 136; Peyrot 2017: 331–2).

⁴⁰³ This formulation is also rendered with a vowel converb in Old Uyghur: *äyitā [ä]t’özin* ‘with bowing body’ (Peyrot 2017: 336).

187 Skt. Udv. I.32b

caratas tiṣṭhataṣ tathā

TB SI B 75 b5

*ynemanentse*_{gen.sg.} *klyemanentse*_{gen.sg.} *taiknesāk*

“(The life) of the going one and the staying one in the very same way”⁴⁰⁴

Other examples include the Sanskrit genitive singular *avijānataḥ* (Uvd. 1.19d) ‘unknowing’ rendered by TB gen.sg. *mā aikemanetse* (IOLToch114 a2) ‘not knowing’ and locative singular *sati* (Uvd. 1.4b) ‘being’ rendered by Tocharian locative singular (*nesa*)*manene* (IOLToch38 b5).⁴⁰⁵ The construction of the secondary case forms indicates that there is no separate oblique. In Tocharian A, the *m*-participle follows the declination of the preterite participle: gen.sg. ^A*läntsamāntāp* ‘emerging’ (A152 b3), perl.pl. ^A*plaṃtmāmñcsā* ‘rejoicing’, ^A*ypamāñ(cs)ā* ‘doing’; cf. prt.ptcp. m.gen.sg. *yāmuntāp*, m.obl.pl. *yāmuñcās* ‘done’. These case forms are also in all likelihood calqued.

There are a few instances of lexicalised *m*-participles in Tocharian A. While ^A*kātkmām* ‘joyful, rejoicing’ have been grammaticalised in a standard phrase with a form of the verb ^A*nas*- ‘be’, the forms ^A*knānmām* ‘knowing, wise’ and ^A*śāmām* ‘living’ have disengaged from their status as participles and become fully-fledged adjectives. They are therefore found inflected outside translations of Sanskrit in both attributive (ex. 188, 189) and substantival position (ex. 190).

188 TA A65 b6

*tām kaklyuṣurāṣ wāl trānkāṣ ote täpreṃ knānmām*_{nom.sg.} *māskit*_{nom.sg.}

“Having heard this, the king says: Oh, such a wise prince”

189 TA A12 b5

*śāmām*_{obl.sg.} *śískūṣ*_{abl.sg.} *klisontāṣ śoll ats camī wākām ṣeṣ*

“Only life separated him from a living lion asleep”

190 TA A6 b4

*mā nu tāṣ knānmāñcāśśi*_{gen.pl.} *śākwāknā k_ulewāsac tuñk tsāknātsi tārkor*

“It is not allowed for the wise ones to express love for ten types of women”⁴⁰⁶

Another special case of lexicalisation has taken place in ^B*tasemane*, ^A*tāskmām* to

⁴⁰⁴ Trsl. CEToM, ed. G.-J. Pinault & M. Malzahn, accessed 18 September 2023.

⁴⁰⁵ Restoration by Sieg & Siegling (1932: 485).

⁴⁰⁶ See translation by Sieg (1944: 10).

^B*tas-*, ^A*täs-* ‘put’.⁴⁰⁷ It is invariably used in a construction with a noun in the comitative, meaning ‘resembling; comparable to’. A derivative adjective in ^B*-tstse* has been read by Tamai (2009: 663): *k₁ce tasemanecci* (Or. 15009/335 b4) ‘who resembling (?)’, which would show that the *mane*-form truly has become lexicalised.

In summary, the *m*-participle covers some of the functions of an actual present participle, but mostly it is used as a converb, subordinated to a head verb (Peyrot 2017: 334–5). The tendency for participles and converbs to be formally identical is common in (Indo-)European languages (see 5.1.1). In Tocharian, this has gone one step further in the sense that the *m*-participle has largely lost its ability to inflect for number, case, and gender, and thus looks and acts more like an adverb than an adjective.

5.3. Correlation with voice

The notion that the Indo-European active and middle participles are continued as such in Tocharian is evident in the traditional grammars of Tocharian:

“Die aktiven Präsenspartizipia zeigen die flektierbare Endung *-nt*. [...] Das mediale Präsenspartizip endigt auf *-mām* und bleibt in attributiver und prädikativer Funktion stets unflektiert.” (Sieg, Siegling & Schulze 1931: 337)

“Part. Präs. Akt. *-ñca* (bei themat. Flexion *-eñca* mit vorangehender Auslauterweichung, bei *ā*-Präsentien *-āñca*). [A *-nt*] — Part. Präs. Med. *-mane*. [A *-mām*.]” (Krause 1952: 197)

“Partizipium Präsens Aktivi (B *-ñca* [A *-nt*]) und Medii (B *-mane* [A *-mām*]).” (Krause & Thomas 1960: 192)

These analyses seem to be based to a large extent on etymology. Presently, however, there is general agreement that neither of the formations in question is strictly limited to a particular voice in synchronic Tocharian as we find *nt*-forms to media tantum and *m*-forms to activa tantum (Malzahn 2010: 495; Pinault 2012b: 179): e.g., ^B*paššeñca*, ^A*pāšant* ‘protecting, protector’ next to prs.mid.3pl. ^B*paskentär*, ^A*pāsantär* ‘protect’, and ^B*ynemane*, ^A*ymām* ‘going, goer’ next to prs.act.3sg. ^B*yam*, ^A*yäš*.

It has been suggested that Tocharian does not exhibit a voice distinction in the

⁴⁰⁷ For the unexpected *-k-* in the Tocharian A stem, see 5.3.3.

participles, because there was none to inherit from Proto-Indo-European (Melchert 1983: 24–5; Malzahn 2010: 480). This idea is partly based on the fact that the reflex of the **nt*-participle in Hittite is not an active participle, but primarily a subject/patient-oriented one (see 5.1). Since the CIE languages do show evidence that the **nt*- and **mh₁nó*-participles were associated with active and middle voice, respectively, the absence of such an association in Tocharian could be a potential isogloss in favour of the early separation of Tocharian. The question posed in this section is therefore how the Tocharian *m*- and (productive) *nt*-formations behave with regard to voice.

It is quite difficult to ascertain whether the *m*- and *nt*-formations had a voice distinction, since the Tocharian languages underwent a rather extensive increase in deponency in their prehistory. In addition to this, many verbs that still have a morphological distinction between active and middle in the finite verbs no longer retain a functional or semantic distinction. Only a handful of verbs show any difference. In the following survey, the respective *nt*- and *m*-formations of these verbs are surveyed in order to see if they show any semantic affinity to either the active or middle voice. If they do not, it would support the notion that Tocharian inherited the suffixes, but not the affiliation with the voice of the finite verb found in e.g., Greek and Indo-Iranian. If they do, it would indicate that at a certain prestige, the *nt*-forms were associated with the active voice of the finite verbs, while the *m*-forms were associated with the middle.

Since both formations are formed to the present stem, only verbs with an active/middle distinction in the present are included. Preferably, both types of non-finite forms should also be attested for a full comparison to be made, but as this is quite a tall order for the Tocharian corpus, I have chosen to include verbs that have either type attested. The verbs are divided into three subgroups according to their type of opposition. In the first group, 5.3.1, the active is functionally causative, while the middle is inchoative. These verbs belong to the class that form subjunctives of class [3] (suffix ^B-e-, ^A-a-) and Tocharian A root preterites of class [o] (type ^A*nakät*) that has been discussed several times in this thesis (3.7, 4.2–4.4). The second group, 5.3.2, comprises of roots with a passive middle. Finally, in 5.3.3, I discuss a few verbs that do not fall into either forementioned category.

It could be argued that since the *nt*-forms synchronically function as agent nouns, it will not be significant if these forms turn out to primarily show transitive or active meaning since this is expected in an agent noun. Of course, it is significant in itself that the *nt*-suffix is used in this capacity, as the development from active participle to agent noun is more likely than from non-oriented participle to agent noun, and outright unexpected if the starting point was a patient-oriented participle as in

Hittite. It is nonetheless possible that an agent noun can express subject-oriented meaning when formed to verbs with inchoative-causative alternation; consider Eng. *burner* which can refer to an object that burns inchoatively, as well as one that burns something transitively. If the *nt*-formation was non-oriented at the time of the separation of Tocharian, it is possible that we would see intransitive meanings, otherwise associated with the Tocharian middle voice, in the ^B*ñca*-, ^A*nt*-formations in subsection 5.3.1. If on the other hand, the formation was associated with the finite active voice, we would only expect the transitive meaning to occur. Conversely, if the *m*-participle were originally middle, a strong association with the middle function of oppositional verbs would be expected.

5.3.1. Inchoative-causative opposition

There is a small group of verbs, characterised by an *e*-subjunctive of class [3] and a Tocharian A preterite of class [o] that shows an opposition between causative meaning in the active and inchoative meaning in the middle of the finite verbs. A detailed treatment of these verbs, their stem patterns, and their origin was given in 3.7 and in 4.2–4.4. I have argued that the inchoative-causative alternation in the present came about through a partial confusion of inherited transitive active **e/o*-presents and intransitive middle **ie/o*-presents spurred on by their semantics. Because of their particular semantics and morphological features, the use of voice rather than stem alternation to encode differences in transitivity was allowed to survive into attested Tocharian. It is therefore an ideal area of the verbal corpus to look for archaisms pertaining to voice with regard to the participles.

There are four Tocharian B verbs and one Tocharian A verb from this class that attest the relevant forms. Although most of the verbs do not attest both an *m*- and an *nt*-form, an overview of the attested forms is enough to give a decent picture; see Table 5.16. Each attested text passages are discussed in this subsection (5.3.1).

Table 5.16: Attested *nt*-forms and *m*-ptcp. to inchoative-causative verbs in TB and TA

TB		form	attested meaning
<i>nək-</i>	‘perish (mid.); destroy (act.)’	<i>näksemane</i>	1 tr.
		<i>näkšeñca</i>	6 tr., 1 uncertain
<i>pək-</i>	‘cook’	<i>päksemane</i>	1 itr., 1 uncertain
<i>ləwk-</i>	‘light up’	<i>luksemane</i>	1 uncertain
<i>tsək-</i>	‘burn’	<i>tsäksemane</i>	2 itr.
TA			
<i>täm-</i>	‘be born (mid.); give birth (act.)’	<i>tmäṃsamāṃ</i>	1 itr.
		<i>tmäṃṣant</i>	1 tr.

Starting with the forms in Tocharian B, the few attested *mane*-forms are primarily intransitive (ex. 191, 192 and 193); there is only one transitive case (ex. 196) as well as two uncertain ones (ex. 194 and 195). In ex. 192 and 193, the use of the perative as an agent for the intransitive verb is also attested for the finite middle; see e.g., ex. 46 on p. 167.⁴⁰⁸ There are no contrastive pairs within one verb that show either the distribution *-mane* = intransitive, *-ñca* = transitive; nor are there any pairs with interchangeable meanings, i.e., with both transitive and intransitive meaning attested in ^B*-mane* and ^B*-ñca*.

191 THT₁₀₇ a2

päksemane oñkorñai lyāka

“(he) saw the **cooking** porridge”

192 IOLToch₅ a4

onmiṣṣana pwārasa tsäksemane marmanma troñktse stām ra

“the blood vessels (are) **burning** with the fires of remorse”⁴⁰⁹

⁴⁰⁸ There is a restored third example ^B*tsäkse(mane)* attested in PKAS_{7L} b1. It also looks intransitive, but the context is broken: *skwassu no klantso; ostne tsäkse(mane)* “May he sleep happy, burning in the house”.

⁴⁰⁹ See Pinault (2008: 328): “Les points vitaux (sont) embrasés par les feux du remords”.

- 193 PKNS18 b3
māñcuṣkeṃne ñ(i yśe)lme pūwarsa tsāksemane
 “my desire for the prince [is] **burning** with fire”⁴¹⁰
- 194 IOLToch206 b6
 /// (pā)ksemane 31 ||
- 195 THT619 a4
 /// luksemane no ///
- 196 90K-58F-01 a3
ñiś no kālpāw(a) ś · ·[e] l-e nta nāksemane śāsaṃne ce [l] ///
 “But I obtained [something] in this teaching, **destroying** [something]”

While the context is broken up by the lacunae to the left of the form in ex. 196, it is most likely an object to ^B*nāksemane*. Ogihara (2015: 150–1) restores [ś](onai yś)el(m)e nta and translates the phrase “destroying enmity and (sexual) pleasure” which seems likely. It is in any case difficult to reconcile an intransitive reading ‘perishing’ with the rest of the context. This example thus aligns with the active meaning.

As for the *ñca*-forms, only ^B*nək*- attests any. The orientation of these are, however, straightforward: all instances of ^B*nākṣeñca* in which the meaning can be ascertained mean ‘destroyer’ or ‘destroying’ (ex. 197, 198, 199 and 200).

- 197 PKAS2B a2
hiraṇḍaṣṣe śalypempa tetriwu nemcekaṃñe po tekanma nākṣeñca_{nom.sg.}
 “Mixed with castor oil, it is an infallible **destroyer** of all deceases”⁴¹¹
- 198 PKNS48 and 258 a5
po yolaiññenta nākṣeñca_{nom.sg.} po krentauna aiṣṣeñca pe(l)ai(kneṣe nau)miy(e)
walke stamoy
 “May the jewel of the Law **which destroys** all evils [and] which gives all virtues remain stable for a long time.”⁴¹²

⁴¹⁰ See CEToM, ed. G.-J. Pinault & H. Fellner, accessed 5 October 2023.

⁴¹¹ See Carling (2003c: 40, 51–2).

⁴¹² Trsl. by CEToM, ed. G.-J. Pinault & H. Fellner, accessed 3 October 2023.

199 SIP1 a3

*kleśanmaṣṣeṃ ceṃ lāmtñ asūreṃts po nākṣeñcai*_{voc.sg.}“O you complete destroyer of those *kleśa*-kings of the Asuras”⁴¹³

200 THT549 b4–b5

*kuhākāññesa warñai śtwer krent spārttalyñe nākṣeñcam*_{obl.pl.} *pelaiknenta pālskomem wikāṣṣā*^{b5} *lyi*“Beginning with deception, they should remove four things **destroying** good behaviour”

In Tocharian A, only one verb attests any forms, but fortunately, there is one of each. The two attestations show the distribution of meaning that we would expect if the two forms were indeed inherited from active and middle participles respectively; the *mām*-form is intransitive (ex. 201), while the *nt*-form is transitive (ex. 202). However, since there is just one attestation of each, this evidence should be treated with caution.

201 A152 b4

tām ṣurmaṣ sām empeleṃ klop wārpñātār camī penu tsār tmāmṣam(ā)ṃ|||“Because of this, she suffers horrible pain. Also, for him **being born** in a difficult way...”

202 A292 a8

*ts kācke plānto tmāmṣant*_{nom.sg.} *klyo(sāmṣantāśśi śuk)*‘[...] **generating** joy and pleasure, the happiness of the listeners’⁴¹⁴

As seen in 3.7.1, other verbs of this type in Tocharian A cannot be used since they show stem alternation rather than voice alternation in the present stem. However, it is interesting to note that the *nt*-forms attested to these verbs are exclusively formed to the transitive stem and only show transitive meaning: *nākṣant* (A231 a2) ‘destroying’, *nākṣantāñ* (A300 a5) ‘destroyers’. On the other hand, the *mām*-participles are primarily attested with the inchoative *nās*-prs.[10] stem and aligns with that meaning (ex. 203 and 204)

⁴¹³ See Pinault (2008: 303): “ô toi qui détruis complètement ces rois des Asura que sont les passions”.

⁴¹⁴ Restoration by Pinault (1999: 216–7) on the basis of an Old Uyghur parallel (MaitrHami XXVI bl. B, b23-27).

203 A311 a4

(mā)^{a4} *cok menākyo nkāmsamām tñi krant śāsnaṃ kālṗāmāt was oñi cmol*
 “In your good teaching **which is not going out**^{a45} like a lamp, we obtained a human birth”^{a46}

204 A220 a5

sām aneñcāṣ tsāknāsmām onmīṣinās porānyo
 “He was **burning** from inside with the fires of remorse”

A potential counterexample to this is ^Aluksamām to ^Alāwk- ‘illuminate’ (ex. 205) which is formed to the s-prs.[8] stem, otherwise only attested in the transitive active, e.g., prs.act.3pl. ^Alukseñc ‘they illuminate’. However, there are no middle forms attested in the present of this verb, so we cannot be sure whether ^Alāwk- formed an intransitive nās-prs.[10]. It is possible that the verb had retained the oppositional s-prs.[8] stem; cf. prs.act.3sg. ^Blukṣām ‘lights up (tr.)’, mid.3sg. ^Blukṣtar ‘lights up (itr.)’. The passage containing the mām-form is difficult to interpret. Hackstein (1995: 126), followed by Malzahn (2010: 856), gives an intransitive translation: ‘nach hinten strahlend, leuchtend’. This is based on the suggestion by Sieg, Siegling & Schulze (1931: 278) that *ṣkārā* is a preverb meaning ‘backwards’ and the fact that there does not seem to be a direct object to ^Aluksamām. If this is true, ^Aluksamām looks to be parallel to ^Atmāmsamām ‘being born’, i.e. an intransitive *m*-participle to a present with inchoative-causative alternation. Due to the uncertainty of the passage, I hesitate to conclude that this is the case, but in any event, the form cannot be used as a counterexample.

205 A356 b2

/// (ko)ṣtluneyā ṣkārā luksamām triṣkāṣ kāntwāsyō pācar (tä)kwāṣānt
 “through a murder, **lighting up** backwards with a three-tongued item,
 (verb_{prt.mid.3pl.}) the father...”^{a47}

Taken together, the results from Tocharian B and Tocharian A indicate an affinity

^{a45} Lit. “not disappearing”.

^{a46} Restoration by Thomas (1957: 152) who translates: “In deiner guten Lehre, [die] (nicht) wie eine Lampe vergeht, haben wir menschliche Geburt erlangt (Prät.).”

^{a47} The finite verb form is completely obscure. It is interpreted as a causative imperfect middle 3pl. by Sieg, Siegling & Schulze (1931: 439), but this is irregular, as pointed out by Malzahn (2010: 647), since the causative should have lost the root-final *-ā-*. In addition to this, the meaning of the verb to which it is restored, ^Atākwā-, is unknown.

between the meaning of the finite middle and the *m*-participle on the one hand, and the finite active and the *nt*-formation on the other in the inchoative-causative verbs. This is based on a relatively small amount of forms, but a significant result nonetheless.

5.3.2. Active-passive opposition

The next group of verbs has a passive middle next to a transitive active and attests either an *nt*-form, an *m*-participle or both. I have collected these from Schmidt (1974) and Malzahn (2010). These verbs are overall better attested than the verbs with inchoative-causative alternation and include the very frequent verbs *weñ*- ‘speak’ and *ak*- ‘lead’ in Tocharian B and *läk*- ‘see’ in Tocharian A. Compared to the inchoative-causative type, the stem patterns are less homogeneous. An overview of the forms are given in Table 5.17 and Table 5.18.

Starting with the data from Tocharian B, it is not surprising that the verbs with *na*-prs.[6] do not attest any *ñca*-forms, since these are almost entirely limited to thematic stems. Instead, this class seems to form *-ca* agent nouns (see 5.2.5). Every *ñca*-form attested shows the active meaning, when the context is discernible. Interestingly, all but one of the verbs have an agent noun of another formation attested. Three of them have an agent noun in *-ca*: *kärstauca* to ^B*krästa*- ‘cut off’, *pälskauca* to ^B*plaska*- ‘think’, *kälpauc* to ^B*kälpa*- ‘obtain’. Also to ^B*ak*- ‘lead’ belongs a *ca*-form, although formed to the suppletive subjunctive-preterite stem ^B*waya*:- *wayauca*. Besides *weṣṣeñca*, two additional agent nouns are found, *weñenta* and *weṣṣuki*, also transitive. Only ^B*klyews*- ‘hear’, which forms a *mane*-participle, does not have an agent noun of any kind attested in Tocharian B.

Table 5.17: TB *ñca*- and *mane*-forms in verbs with active/passive opposition

root		prs.	forms		meaning
<i>ak-</i>	‘lead’	[2]	<i>akemane</i>	THT3 b6	passive
			<i>ākemane</i>	THT88 b6	active
			<i>ašeñcai</i>	THT303.b a1	uncertain
			<i>ašeñcañ</i>	IOLToch2 a2	active
<i>klyews-</i>	‘hear’	[2]	<i>klyausemane</i>	IOLToch131 b4	active
<i>krəsta-</i>	‘cut off, disturb’	[6]	<i>kärsnāmane</i>	PKAS1B a1	active
				THT521 a2	active
				PKAS7D a3	active
				THT90 a3	active
<i>plaska-</i>	‘think’	[6]	<i>pālscanamane</i>	THT1681 a1	active
<i>kəlpə-</i>	‘obtain’	[9]	<i>kālpāskemane</i>	THT182 b4	passive
			<i>kālwāṣṣeñcai</i> ^α	SHT1738 R5	active
<i>weñ-</i>	‘speak’	[9]	<i>weskemane</i>	IOLToch246 a3	passive
				IOLToch422 b3	passive (?)
				PKNS37 b2–b3	active
				PKNS58 a4, a5	both active
				THT336 a7, b1, b3	all active
			<i>weṣṣeñca</i>	THT16 a4	active
				THT132 b7	active
				PKNS299 b1	active
				IOLToch131 a3	active

^αThis is a gloss on Skt. *prāpiṇam* ‘receiver’; see Schmidt (1990: 475), Malzahn (2007: 309).

Table 5.18: TA *nt*- and *mām*-forms in verbs with active/passive opposition

root		prs.	forms		meaning
<i>trānk-</i>	'speak'	[1]	<i>trāṅkmām</i>	A111 b6	active
				A253 b7	active
				A95 b6	uncertain
				A322 a2	uncertain
				THT1593.a a4	uncertain
<i>āk-</i>	'lead'	[2]	<i>trāṅkāntāp</i> <i>trāṅkāntāñ</i> <i>ākmām</i>	A417 b4	active
				A422b3	active
				A81 a5	passive
				A402 a1	active
				A361 a6	active
<i>lākā-</i>	'see'	[5]	<i>āśāntām</i> <i>lkāmām</i>	A247 a1	active
				A5 b2	active
				A6 a6	active
				A23 b4	active
				A173 b5	active (?)
				A257 a5	active
				A313 a7, b4	both active
				A314 a1	active
				A318 and 319 a3	active
				A359 a3	active
				THT1145 b2	active
				A153 b4	passive (?)
				A123 a6	uncertain
				A198 a3	uncertain
				A324 a7	uncertain
				A399.16 b1	uncertain
				THT3395 b1	uncertain
			<i>lkānt</i>	A55 a1	active

<i>kärsā-</i>	‘know’	[6]	<i>kāršnānt</i>	YQ2.5 b1	active
				A384 a5	active
			<i>kāršnāntām</i>	YQ1.8 a7	active
<i>kārštā-</i>	‘cut off’	[6]	<i>kāršnānt</i>	A4 a3–a4	active
				A317 b2	active
			<i>kāršnāntām</i>	A275 a2	active
<i>mäy-</i>	‘hurt’	[8]	<i>miyāsmām</i>	A353 b1	active
			<i>mišant</i>	A353 b3	active
<i>klyaws-</i>	‘hear’	[10]	<i>klyosāmšantāñ</i>	A230 a2	active

The *mane*-participles of this group are not exclusively passive. In fact, the data shows a predominantly active meaning of these forms. We can thus conclude that the *m*-participle does not primarily align with the meaning of the middle when the middle is passive. The case of ^B*akemane* is especially telling. Krause (1952: 34) and Fellner & Grestenberger (2018: 75–6) use this form to show semantic alignment between the *m*-participle and the passive finite middle because it shows passive meaning in THT3 b5–b6; see ex. 206. However, this is contradicted by the transitive active usage in THT 88 b5–b6 (ex. 207).

206 THT3 b5–b6

makte kautsy akemane wnołme
 “like the being **being** led to be killed”

207 THT88 b5–b6

om no ñake tott ike-postaṃ ynemane brāhmaṇi uttareṃ^{obl.sg.} mñcuṣkeṃ^{obl.sg.}
ākemane⁴¹⁸ candramukhi lānte yapoyne klānte-ne
 “But now the brahmins, going first step by step, **leading** prince Uttara, brought him to the land of King Candramukha”⁴¹⁹

A very similar pattern is evident in Tocharian A; see Table 5.18. The few attestations of *mām*-participles show that it can be used in both active (ex. 208 and 210) and passive function (ex. 209):

⁴¹⁸ With irregular *ākemane* for *akemane*.

⁴¹⁹ See Schmidt (1974: 392): “Da aber jetzt brachten die Brahmanen, zunächst Schritt für Schritt gehend, den Prinzen Uttara führend, ihn in das Land des Königs Candramukha.”

208 A402 a1

wartsi ākmām pukis pācrāṣ

“leading the congregation of all from the father”

209 A81 a5

/// (ca)ndālāsā kossi ākmām riyam ymām p_ukaṃ neṣ rake weñāṣt ///“When you, led to death by the Caṇḍālas, went into the city, first of all you spoke the word[s] ...”⁴²⁰

210 A353 b1

ālyk(e)s pālṣant śāmaṃ māskatrā ālykes miyāsmām“the one who torments others, he is not a monk, the one who harms others”⁴²¹

In summary, neither language shows an affinity between the oppositional passive middle and the *m*-participle, which has both active and passive meaning. The *nt*-forms of both languages are exclusively aligned with the active meaning, which is not surprising as we would not expect an agent noun/participle to be able to express the passive meaning.

5.3.3. Other oppositional verbs

There are very few other verbs with a contrastive difference in meaning between the finite active and middle that have *nt*- and *m*-forms attested; see Table 5.19. Of the ones that do, many passages are too fragmentary to be useful. The most interesting case is the prs.[2] stem ^B*tas*-’ə/e-, ^A*tās*-’ü/a- ‘put’ which attests numerous formations: ^B*tasemane*, ^B*tāṣṣeñca*, ^A*tāsmām*, and ^A*tāskmām*. I will discuss these in detail below. Besides ^B*tas*- ‘put’, it is interesting to note that ^B*lutaṣṣeñca* ‘driving away’ aligns with the active voice in two out of three cases, and that ^A*kāllāmām* ‘bringing’ is only found in a phrasal construction with *opyāc* ‘memory’ that is limited to the middle in the finite forms: ‘bring to memory’ ⇒ ‘remember’ (Carling & Pinault 2023: 128).

⁴²⁰ Trsl. by CEToM, ed. G. Carling, accessed 5 October 2023.

⁴²¹ Restoration and translation by Ogihara (2009: 272–3). See Schmidt (1989: 73–81) for the Sanskrit parallel and German translation of the text.

Table 5.19: *nt-* and *m-*forms to other verbs with voice/meaning opposition

TB					
<i>təs-</i>	‘put; M put oneself; be compared (+ com.)’	[2]	<i>tasemane</i> (+ com.) ^α		‘comparable’ (all instances)
			<i>taṣeñca</i> + <i>keś</i> ‘number’	PKAS ₅ C 5 PKNS ₂₅ and 26 b3 THT ₂₅₅ b3 ^β	‘making considerations’ (all instances)
<i>nəm-</i>	‘bend; mid. bow’	[8]	<i>nämsemane</i>	IOLToch80 a4	uncertain
<i>ləwt-</i>	‘drive away, expel; M leave’	[9]	<i>lutaṣṣeñca</i>	W22 b2 IOLToch30 b6 THT ₁₃₃₄ .b a2	‘driving away’ ‘driving away’ uncertain
TA					
<i>tās-</i>	‘put; M place oneself’	[2]	<i>tāsmām</i>	A395 a5 YQ3.11 b8	‘placing’ ‘placing’
			<i>tāskmām</i> + com. ^γ		‘comparable’
<i>kālā-</i>	‘bring’	[6]	<i>källāmām</i> + <i>opyac</i> ‘memory’	A89 b3 A236 a4	‘remembering’ ‘remembering’
<i>mäntā-</i>	‘throw off, hurt; M be hurt, be angry, scold’	[5]	<i>mäntāmām</i>	THT ₁₃₇₈ .c b3	uncertain

^α A CEToM search (7 September 2023) yielded 24 instances of *tasemane*, of which 18 were found with a comitative.

^β A geminated form *taṣṣeñca* is found in THT₂₅₅ b3.

^γ A CEToM search (7 September 2023) yielded 22 instances of *tāskmām*, of which 12 were found after a comitative.

The stem pattern of ^B*tas*-’ə/e-, ^A*tās*-’ä/a- ‘put’ has been discussed in 2.5.1. In the finite forms, there is a definite contrast between active and middle. The active is transitive, while the middle is reflexive (Schmidt 1974: 56–7; Hackstein 1995: 56). In Chapter 2, the *nt*- and *m*-forms were left out of consideration, but they also exhibit peculiar features.

The finite middle of ^B*tas*-’ə/e-, ^A*tās*-’ä/a- is used passively in a phrasal construction with the comitative and the specified meaning “be compared”. In ex. 211, the form ^B*tasaitār* was identified as a prs.mid.3du. by Schmidt (1974: 285–6; 1975: 287–8). Previously, this form had been taken as a misspelling of **tasetār*, an *e*-prs.[3] to a verb *tās*- ‘compare’ (Krause & Thomas 1964: 87, 197).

- 211 TB THT74 a4–a5
 ///ktentse⁴²² *tskertkanempa*_{com.sg.} *tasaitār*_{prs.mid.3du.}
 “they are compared with the calves of the ... god”

Schmidt (1974: 287) was in this way able to unite the lemma ^B*tās*- ‘be compared, resemble’ with ^B*tə(s)*- ‘put’ through a specification of the middle with comitative: ‘place oneself together with’ ⇒ ‘be compared with’; cf. Dan. *sammenstille* lit. ‘put together’ ⇒ ‘compile; compare’. The very frequently attested present participle ^B*tasemane* ‘comparable to (+com.)’ can thus also be connected to the paradigm of ^B*tə(s)*- ‘put’. This form has at least 24 attestations, the vast majority of which are accompanied by a comitative, ^B*-mpa*, and have the meaning ‘comparable to’ (ex. 212 and 213); see Table 5.19. The attestations without a comitative have lacunae on either or both sides of the *mane*-form. The specific semantics of this phrase and its limitation to the middle voice in the finite verb point to original middle affinity of this *mane*-form. The fact that it has been grammaticalised as an adverbial phrase is consistent with a possible archaism.

- 212 TB THT112 b3
*cintāmani wamermpa*_{com.sg.} *tasemane*
 “comparable to a Cintāmaṇi jewel”

⁴²² Krause & Thomas (1960: 87) suggests (*pudñä*)*ktentse* ‘of the Buddha’; see also Couvreur (1954c: 104). Sieg & Siegling (1983: 231) reject this, possibly on semantic grounds, and restore (*yālñä*)*ktentse* ‘of the gazelle god’, which is followed by Adams (2013: 301).

213 TB THT_{372 a3}

*aklaṣṣälyi takāre-ñ tasemane ñiśmpa*_{pron.1sg.com.}

“My students were comparable to me”

Tocharian A attests two *m*-participles to this verb, the synchronically regular *tāsmām* and the aberrant *tāskmām*. The former occurs just twice, while the latter occurs almost as frequently as ^B*tasemane*, most often with the comitative, ^A*-aśśäl* and with the same meaning (ex. 214).

214 TA A₃₁₅ and 316 b₅

*tmaśśäl*_{dem.pron.com.sg} *tāskmām āsām* (*ñäктаśśi pättāññäktes*)⁴²³

“Comparable to this is the seat of the Buddha, god of gods.”

Hackstein (1995: 64) explains the *-sk-* of ^A*tāskmām* as that of a former iterative **ske/o-* present, also attested in Hitt. *zikke/a-^{zi}*, imperfective of *dai-ⁱ* ‘put’; see the LIV (2001: 136), Kloekhorst (2008: 808). If that is the case, the **-sk-* must have been reanalysed as part of the root before the conflation of the *s*-prs.[8] and the *sk*-prs.[9]; see, e.g., ^A*māskā* ‘be(come)’, ^A*mläwskā* ‘escape’ (Hackstein 1995: 210). The problem is that we do not find the root elsewhere in Tocharian A. It is not clear how *tāskmām* came to mean ‘comparable’ in this scenario, since these semantics belong with the stem in *-s-* in Tocharian B.

Malzahn (2010: 437–8, 645) does not take the form as a relic, but as a hypercorrect form in pre-Tocharian A when the two present classes were merging; see Adams (1988: 76), Ringe (1989: 42). As the use of the participle with the comitative in the meaning ‘comparable with’ is present in both Tocharian languages, it would be attractive to assume that it happened at a common prestage. This is compatible with Malzahn’s solution; the semantic specification could result in the hypercorrection in pre-Tocharian A which would cause the *tāskmām* ‘comparable (to)’ to split off from the paradigm of *tās-’ä/a-*, whereas the expected form *tāsmām* would continue as the regular *m*-participle of the verb. This is supported by the meaning of *tāsmām* ‘placing’ (ex. 215 and 216).

⁴²³ Restoration by Sieg (1952: 29).

- 215 TA A395 a5
śertmāṃ kāltaṅk tāsmāṃ ṣṇi kotür kāmar kropant
 “weeping and playing the drum (?),⁴²⁴ they gathered their family”

- 216 TA Y3.11 b8
što semā sok šik tāsmāṃ
 “with the support of a cane, **stepping**⁴²⁵”

In Tocharian B, there is also an agent noun in *-ñca* attested in a phrasal construction. In this case, *taṣ(ṣ)eñca* combines with the noun *keś* ‘number, count’ in the meaning ‘consider, evaluate, judge’ (ex. 217 and 218). We also find this construction in the finite verb where it is always active (ex. 219 and 220). There are no instances of the *ñca*-form outside the *keś*-construction.

- 217 TB PKAS5C a5
*kalymisa keś_{obl.sg.} taṣeñcañ_{nom.pl.} papāṣṣorñe mällarṣke wāṣmoñ tākoyñ*⁴²⁶
 “May the ones that make judgements in the right way, striving for moral behaviour, be my friends.”

- 218 TB THT255 b3
yamor keśä_{obl.sg.} taṣṣeñca_{nom.sg.} se kr_ui sraukaṃ śamane
 “He who is alive **considers** the deed only when he dies.”⁴²⁷

- 219 THT85 a6
mā ṣ keś_{obl.sg.} (t)āsau_{prs.act.1sg.} ṣañ la(kle) ///
 “I do not **pay attention** to my own sorrow”⁴²⁸

- 220 THT46 a7
mant ṣañ śāmna keś_{obl.sg.} ptes_{ipv.act.2sg.} twe
 “Thus you **shall judge** your own people”

The finite phrasal verb is also found in Tocharian A, indicating that the construction with the ^B*ñca*-form may be as old as Proto-Tocharian. This is highly

⁴²⁴ The same example is giving on page 285 (ex. 180).

⁴²⁵ Lit. ‘placing a step’.

⁴²⁶ A parallel passage (in the singular) is attested in PK NS 25/26 b3

⁴²⁷ See the translation by Peyrot (2013a: 326).

⁴²⁸ Trsl. by Peyrot (2013a: 431), who shows that *(t)āsau* is better interpreted as a present stem than a subjunctive.

reminiscent of the construction with ^B*tasemane* and ^A*tāsmām* with comitative. It is striking that all *nt*- and *m*-forms to ^B*tās*-, ^A*tās*- are found in constructions that are limited to active and middle morphology respectively. The easiest way to interpret these facts is that there was a connection between the *nt*- and *m*-forms, respectively, and the voice the finite verb when the phrasal verbs were coined.

5.3.4. Summary

Although the corpus of relevant forms is small, the survey of *nt*- and *m*-forms to verbs that show a difference in meaning between the active and middle voice has yielded a fairly compelling picture. First of all, there are no examples of the ^A*nt*- or ^B*ñca*-forms that align with the meaning of the middle in these verbs. In the case of the *m*-participle, the data is more conflicting. For the group of inherited bivalent roots in Tocharian B, the *mane*-participle is primarily intransitive with a single counterexample in *nāksemane*. As for the group with passive middles, the *m*-participles can be active as well as passive, although the attestations are skewed towards the active. This is not an argument against a middle origin, however, since the CIE middle participle had agent/subject orientation, just like the active; see 5.1.2. A successor of this participle in Tocharian would therefore not be expected to have patient orientation. The few examples of passive meaning could have developed later, possibly under the influence of other non-oriented nominal verb forms.

With some modifications, this survey supports the findings of Fellner & Grestenberger (2018) that the *m*-participle is affiliated with the middle voice, while ^A*nt*-, ^B*ñca* is connected to the active. This is gleaned from the more archaic layers of the data, including the *nāk*-verbs and the irregular verb ^B*tās*-, ^A*tās*- ‘put’. It is not found in contrasting verbs of younger appearance, such as the transitive actives with passive middles. This pattern lends support to the hypothesis that Pre-Proto-Tocharian inherited the participles with the same voice distinction we know from the CIE languages.

5.4. The development of the *NC*-formations

From the conclusion that the Tocharian branch indeed inherited the Indo-European ^{*}*nt*-participle in the function of an active participle, new questions arise about its inner-Tocharian development. These questions mainly centre around Tocharian B which exhibits more unexpected features than Tocharian A. It must be explained

why the suffixes that seem to correspond to each other as productive agent noun/participle formants, namely ^B-*ñca* and ^A-*nt*, do not reflect the same Proto-Tocharian proto-form, why the Tocharian B suffix is found almost exclusively to thematic present stems while no such restriction is present in Tocharian A and how the suffixes came to be inflected the way that they are. Furthermore, there are other agentive formations in Tocharian B that find no equivalents in Tocharian A; this discrepancy may shed light on the Tocharian B situation, since at least one of the suffixes, ^B-*ca*, seems to fulfil the roll of productive agent noun to athematic stems. In the following subsections 5.4.1–5.4.8, these questions are explored and a hypothesis for the development of the active **nt*-participle in Tocharian is presented.

5.4.1. A joint origin

The questions of the development of the *NC*-forms have been treated by various scholars several times in recent years; see Malzahn (2010: 481–91), Hackstein (2012), Pinault (2012b) and Fellner (2014b). Hackstein (2012) proposes a largely derivational origin for all of the *nt*-formations in both Tocharian A and Tocharian B, namely that they are derived from abstract nouns with their origin in collectives and abstract nouns in **-h₂*. He reconstructs a large morphological inventory reflecting the attested inventory of Tocharian B:

$$\begin{array}{ll} *{-tih_2} > *{-tsa} & *{-tiieh_2} > {-ca} \\ *{-ntih_2} > {-ntsa} & *{-ntiieh_2} > {-ñca} \\ *{-nteh_2} > {-nta} & \end{array}$$

(Hackstein 2012: 167–8)

According to Hackstein (2012: 162), the inflection is phonologically expected, including the vocative *-ai*, cognate of Greek and Indic vocatives in *-ai* as well as Luwian nouns in *-aḫi(t)-*. However, as both Pinault (2012b: 189) and Fellner (2014b: 60) point out, PIE **-eh₂-* > PT **-o-* > ^B-*o-* would result in †*-ñco*, not *-ñca*. An important implication of this hypothesis is the necessary assumption that the feminine suffixes in *-h₂* were just in the process of developing from a collective-abstract sense, thus supporting the early split hypothesis for Tocharian.

Hackstein's hypothesis is critiqued by Fellner (2014b: 60–2) who argues that while individualisation of abstract nouns does occur frequently in Indo-European languages as well as cross-linguistically, there are no examples of it happening on such a large scale in such a productive manner. In fact, most of the parallels that Hackstein adduces all retain their original meaning as well as the individualised one,

e.g., Gm. *Bedienung* ‘service; server’. It is also worth pointing out that the system that Hackstein reconstructs is somewhat uneconomical with respect to the amount of almost identical parallel forms in the proto-language.

In some ways, the proposal by Pinault (2012b) is similar to Hackstein’s, although it does not have the same implications for the reconstruction of Proto-Indo-European. Pinault proposes that within the prehistory of Tocharian, the expected reflex of the active participle $^{*-(o)nt-}$ > PT $^{*-(e)nt-}$ > $^B nta$ existed side by side with a derived abstract in $^{*-(e)nt-i-}$ > PT $^{*-(’ə)n’t-}$ > $^B \tilde{n}ca$ which he compares with Hittite stems in *-anzi-* and Latin nouns like *absentia* with reference to Melchert (2003). According to Pinault, $^{*-(o)nt-}$ had particularising meaning, while $^{*-(e)nt-i-}$ had generalising meaning. As I argued above (5.2.2), this difference in meaning is not reflected in the usage in Tocharian B.

As for the inflection, Pinault (2012b: 197–9) suggests that it arose through the spread of an agentive suffix $^{*-a}$. According to him, the suffix arose through resegmentation of the final $^{*-a}$ of pluralia tantum like $^B mīsa$ ‘flesh’ and $^B āka$ ‘millet’. This $^{*-a}$ (< PIE $^{*-h_2}$) came to be used as a singulative abstract suffix in forms like $^B weta$ ‘struggle’, $^B keta$ ‘plot of land, estate’, $^B śarka$ ‘lute’. He further states:

“that the abstract/collective CToch. $^{*-(æ)\tilde{n}cā}$ < $^{*-(o)nt-i-}$ was remade as $^{*-(æ)\tilde{n}c-ā}$ with the abstract/collective suffix $^{*-ā}$, and that it was concretized with singulative sense, as a masculine substantive. Moreover, since the resulting $^{*-(æ)\tilde{n}c-ā}$ was now a substantival agent noun, it served as model for the reshaping of $^{*-(æ)nt-}$ as $^{*-(æ)nt-ā}$ ” (Pinault 2012b: 199)

As Fellner (2014b: 59) points out, this separates the *nt*-formation in Tocharian A completely from the $^B \tilde{n}ca$ -formation, which is not ideal in light of both word equations and the similarity in usage. A further problem with Pinault’s account is that it only explains the *a*-suffix, but not the inflection. The abstracts that Pinault invokes form both their nom.sg and obl.sg. with *-a*, e.g., $^B keta$, $^B weta$, so the obl.sg. of the *nt*-formations, *-ai*, has to be explained by yet another analogical change.

A disadvantage of the derivational solutions of both Hackstein (2012) and Pinault (2012b) is that they have to accept that the inherited diversity of agentive suffixes has been lost in Tocharian A. Pinault (2012b: 192) motivates this by arguing that the expected outcome of nom.sg. PT ^{*kawšeñca} > Pre-TA ^{*koşañc} > TA $†koşamś$ would be homophonous with the expected nom.pl. of the *nta*-forms: pre-PT ^{*kaušeñc} > Pre-TA $koşañc$ > TA $†koşamś$, cf. m.nom.pl. *kramś* ‘good’. However, at the point in time when PT ^{*kaušeñca} and ^{*kauşenta} supposedly existed side by side, the nom.pl. of the

latter would surely already have contracted the stem-final *-a-* and nasal endings, as the same levelling is attested in Tocharian B: **kauṣentañ* > TA *koṣāntāñ* (A81 b3, b6).

Fellner (2014b: 59) opts for a deadjectival derivation in Pre-TB **nt-ijo-*. There is a possible parallel in Sanskrit where present active participles are also sometimes found side by side with a derivative of this kind: e.g., Skt. *sāhant-*, *sahantya-* ‘overcoming’. Fellner suggests that the derivative gained traction in Tocharian and began to outcompete the original. He attributes the inflection to a pre-Proto-Tocharian extension of the **nt*-participle with an individualising **ōn*-stem, a development also observable in North and East Germanic: cf. Got. m.nom.sg. *-nds*, m.acc.sg. *-ndan* < **nt-ōn-* (Fellner 2014b: 63–4). To get the attested paradigm in Tocharian B, however, Fellner has to assume levelling from two different sources. He suggests that the expected nom.sg. †*-o* < PT **-o* was replaced with *-a* from within the paradigm, and the expected obl.sg. †*-am* with *-ai* from class 6 nouns such as nom.sg. *^Byoko* ‘thirst’, obl.sg. *yokai*. While he states that his solution accounts for the Tocharian B paradigm “almost by sound law”, importantly, the places where he does have to assume analogy are exactly those that are outstanding in the paradigm, i.e. nom.sg. *-a*, obl.sg. *-ai*. The nasal plural, nom.pl. *-añ*, obl.pl. *-am*, is very common and could have been introduced at several stages (Krause & Thomas 1960: 114–5). In addition, if the nominative was levelled before the oblique, the parallel to *yoko*-type nouns would be lost and there would be no model for the new oblique. On the other hand, if the oblique was levelled before the nominative, the *nt*-paradigm would inflect exactly like the *yoko*-type, at least in the singular, in which case it is curious that the nominative would be altered further.

I thus do not find the existing theories on the origin of the NC-suffixes quite satisfactory. In my view, the solution to the problem of their origin comes from investigating the expected outcome of the **nt*-participle. Participles as a morphological category seem to be especially susceptible to analogies, because they are vulnerable to influence from both verbal and nominal morphology. For this reason, the reconstruction of the **nt*-participle is subject to debate, especially in the athematic stems.

As for the thematic **nt*-participle, comparative evidence leaves no doubt that it was formed with full-grade of the root and *o*-grade of the suffix throughout: **-o-nt-*: Gk. prs.ptcp.act. φέρωντ-, OCS *berǫšt-*, Got. *bairand-* ‘carrying’ (Table 5.20). Sihler (1995: 616) posits an original lengthened grade of the thematic vowel in the nominative singular on account of Gk. φέρων.⁴²⁹ However, a more economical

⁴²⁹ Sihler (1995: 614–6) even posits an ablauting **-ont/nt-* suffix for both athematic and

analogical solution internal to Greek was proposed by Rix (1992: 234): *-onts > *-ους
→ -ων.

Table 5.20: Reflexes of PIE thematic and athematic *nt*-participles

	Ved.	Gk.	Lat.	Got.
<i>*b^hér-ont-</i> ‘carrying’				
m.nom.sg.	<i>bháran</i>	φέρων	<i>ferēns</i>	<i>bairands</i>
m.gen.sg.	<i>bhárataḥ</i>	φέροντος	<i>ferentis</i>	<i>bairandis</i>
m.nom.pl.	<i>bhárantaḥ</i>	φέροντες	<i>ferentēs</i>	<i>bairandeis</i>
<i>*dḗ-d^hh₃-nt-</i> ‘giving’				
m.nom.sg.	<i>dádat</i>	διδούς	<i>iēns</i> ^a	
m.gen.sg.	<i>dádataḥ</i>	διδόντος	<i>euntis</i>	
m.nom.pl.	<i>dádataḥ</i>	διδοντές	<i>euntes</i>	
^a Latin supplied with <i>iēns</i> ‘going’.				

In the athematic participle, there is notorious disagreement between daughter languages as well as scholars. The discussion is so multifaceted that a detailed discussion goes beyond the scope of this discussion. Many favour an ablauting suffix **-ont-/nt-* (Kuryłowicz 1968: 268–9; Morpurgo Davies 1978; Bammesberger 1989: 37; Peters 2004; Ringe 2006: 50).⁴³⁰ These accounts tend to highlight Lat. *sōns* ‘guilty’ and Myc. *ehontes* ‘being’, as evidence of original *o*-grade. Rix (1992: 233–4) prefers to analyse the *e*-vocalism of Latin as archaic, citing Heracl. Dor. ἔντες < **ehent-* and Lat. *absēns* ‘absent’ as relics of **-ent/nt-*ablaut; see also Fortson (2010: 108). Yet another account is given by Beekes (Beekes 1985: 64–5; 2011: 197) who posits a three way ablaut **-nt/ént/nt-’*; see Kloekhorst (2008: 109) on Anatolian evidence for this. Possible evidence from Tocharian was proposed by Lubotsky (1994b) and will be discussed below (5.4.3).

thematic **nt*-participles, stating that the latter is in fact not truly thematic, since it displays ablaut. Such an analysis is not warranted by the material and cannot be upheld.

⁴³⁰ Peters (2004: 267 fn. 6), following Schindler, even sets up a distinction in gradation with regular imperfective participles on one hand and Narten-root imperfective and aorist participles on the other.

The evidence from Anatolian is conflicted. Although no ablaut is discernible, the formant of the *ant*-participle is spelled both with and without plene writing, indicating **-ónt-* and *-ent-*, respectively (Melchert 1994: 135, 146). The name of the Luwian storm god points to **-é/Ø*-ablaut: CLuw. nom.sg. *^dTarḫuwanza*, obl. *^dTurḫunt-*; cf. Skt. *túrvant-* ‘conquering’ (Kloekhorst 2008: 183–4). From the point of view of internal reconstruction, original **e*-vocalism is much easier to explain than **o*-vocalism. Firstly, **é/Ø*-gradation is expected in hysterodynamic paradigms; cf. nom.sg. **ph₂-tér* (< *ph₂-tér-s*) ‘father’, nom.pl. *ph₂-tr-és*. Secondly, the **o*-vocalism could have been introduced fairly easily from the thematic participle.

The expected fate of the thematic **nt*-stems in Tocharian is available to us through the outcome of Indo-European ** μ ont*-stems. These paradigms follow the declension of class 3 adjectives according to the classification of Krause & Thomas (1960); see Table 5.21. In Tocharian A, substantial restructuring has taken place, while the Tocharian B paradigm shows several archaic features, such as the gen.sg. in *-e* < **-os* and a feminine nom.sg. *-ntsa* < **-nt-ih₂*.

Table 5.21: The inflection of ** μ ont*-stems in Tocharian

	TB mas.	TA mas.	TB fem.	TA fem.
^B <i>perne_w</i> , ^A <i>parno</i> ‘glorious, worthy’				
nom.sg.	<i>perne_u</i>	<i>parno</i>	<i>parnauntsa</i>	—
obl.sg.	<i>pernent</i>	<i>parnont</i>	—	<i>parnontsām</i>
gen.sg.	—	<i>parnontāp</i>	—	—
nom.pl.	<i>perneñc</i>	<i>parnoṣ</i>	<i>pernenta</i>	<i>parnont</i>
obl.pl.	<i>pernentām</i>	<i>parnoñcäs</i>	—	<i>parnont</i>
gen.pl.	—	<i>parnoñcäsši</i>	—	—
^B <i>tallā_w</i> , ^A <i>tālo</i> ‘miserable’				
nom.sg.	<i>tallā_u</i>	<i>tālo</i>	<i>tallauntsa</i>	—
obl.sg.	<i>tallānt</i>	<i>tālont</i>	<i>tallauntsai</i>	—
gen.sg.	<i>tallānte</i>	<i>tālontāp</i>	—	—
nom.pl.	<i>tallāñc</i>	<i>tāloṣ</i>	—	—
obl.pl.	<i>tallāntām</i>	<i>tāloñcäs</i>	<i>tallānta</i>	—
gen.pl.	<i>tallāntām̐ts</i>	<i>tāloñcäsši</i>	—	—

From the model of these paradigms, we can set up expected forms for the **nt*-participle in Tocharian B, using *pər-* ‘carry’ as an example:

m.nom.sg. †*pare*,⁴³¹ obl.sg. †*prent*, nom.pl. †*preñc*, obl.pl. †*prentäm*
 f.nom.sg. †*prentsa*, obl.sg. †*prentsai*,⁴³² nom.pl. †*prenta*.

Importantly, we find stem formant variants identical to the formants of all three NC-formations: *-nt-*, *-ñc-*, and *-nts-*. In the following subsections (5.4.2–5.4.8), I will argue that this paradigm can account for all the Tocharian A and Tocharian B NC-suffixes as well as the suffix *-ca* found in forms like ^B*kälpauca* ‘obtainer, obtaining’. Essentially, I propose that the suffixes ^B*-nta*, ^B*-ñca* as well as ^A*-nt* developed from the masculine paradigm of the **nt*-participle, while occupational agent nouns in ^B*-ntsa*, ^A*-nts* grew out of the feminine singular. The proposed changes are presented in (relative) chronological sequence.

Table 5.22: Expected outcome of the thematic **nt*-ptcp. in pre-PT

Pre-PT	masculine	feminine
nom.sg.	* <i>päre</i>	* <i>pärentsa</i>
obl.sg.	* <i>pärent</i>	* <i>pärentsa</i>
gen.sg.	* <i>pärente</i>	—
nom.pl.	* <i>pärent’ä</i>	* <i>pärenta</i>
obl.pl.	* <i>pärentäns</i>	* <i>pärenta</i>

5.4.2. The development of TB *-ntsa*, TA *-nts**

Starting with the feminine, I believe it is possible to trace the Tocharian B agent nouns in *-ntsa* back to the feminine of the Proto-Indo-European **nt*-participle. In a recent article, I presented this hypothesis in detail (Friis 2021). In this subsection (5.4.2), I will briefly outline the arguments in favour of this analysis; for a more detailed treatment, I refer to the article in question.

Previous suggestions have generally taken the suffix as a case of individualisation

⁴³¹ On the lack of the expected root initial palatalisation in the simple thematic stem, see above 3.2.1.

⁴³² The feminine stem *prentsa-* is most likely continued into Tocharian B, but not as the feminine participle; see directly below in 5.4.2.

from an earlier abstract. Pinault (2012b: 188) proposes a link to ^B*aknātsa*, ^A*āknats* ‘fool(ish)’, for which he reconstructs a privative abstract noun ^{*}*ṇ-ḡneh₃-ti-h₂*. He proposes that this word underwent the following semantic developments: ‘ignorance’ ⇒ ‘ignorant people’ ⇒ ‘ignorant one’ ⇒ ‘someone not able to exercise wisdom’. From there, he proposes that the suffix *-tsa* was reinterpreted to mean ‘someone able to exercise’ a certain function, and it spread to participle stems such as ^{*}*wapant-* → ^{*}*wapantsa* ‘someone exercising weaving’ ⇒ ‘a professional weaver’. While Pinault’s etymology for ^B*aknātsa*, ^A*āknats* itself is plausible, the extraction of the suffix does not seem very likely, and the suggestion does not explain why the suffix was added to the subjunctive stem. Pinault (2012b: 188–9) suggests an alternative theory which connects ^{*}*-ntsa* to feminine abstracts in ^{*}*-nt-ḷ-ōn-*; cf. Lat. *absentia*, Hitt. *-anzan* (see 5.4.1). This is followed by Fellner (2014b: 62–3), but the problem is that an *ōn*-stem would not give the attested inflection which would then have to be transferred secondarily, requiring an additional assumption.

Phonologically and morphologically, the easiest reconstruction of ^B*-ntsa*, ^A*-nts** is PT ^{*}*-ntsa* < ^{*}*-nt-ya* < PIE ^{*}*-nt-ih₂*. This is reconstructed by Hackstein (2012: 158) who attributes it with original collective-abstract meaning, due to the lack of gender-distinction that the formation exhibits. However, since there are several provable instances of *nt*-stems forming feminines with ^{*}*-ih₂* within Tocharian, e.g., f.nom.sg. ^B*parnauntsa* ‘glorious’, f.nom.sg. ^A*ponts**, obl.sg. *pontsām* ‘all’, nom.sg. ^B*lāntsā*, ^A*lānts* f. ‘queen’, it would be preferable to derive the *ntsa*-formation from the feminine as well. Evidence for exactly that can be found in the semantics of the members of the group.

The occupational titles in ^B*-ntsa* (and ^A*-nts**) do not have a specific gender reference; there are examples referring to both men and women in the corpus. However, several of the *ntsa*-forms pertain to professions traditionally associated with women’s work. This includes *wapāntsā* ‘weaver’, *naskāntsā** ‘spinner’, and possibly *taktsāntsā* ‘grinder, crusher’ if this refers to a cooking activity. In THT484 a2, ^B*tāllaik(a)nts(am)* is found in apposition to the word of ‘women’. Regardless of its meaning, the word must refer to a profession at least partly undertaken by women. In addition, there are relics of clearly feminine words that seem to be formed with a related suffix; for instance, the feminine of the old ^{*}*nt*-participle to ^{*}*uelH-* ‘rule’ underlies the Tocharian word for ‘queen’, ^B*lāntsā*, ^A*lānts*. This word does not follow the inflection of the ^B*ntsa*-forms, but it was probably lexicalised very early just as its masculine counterpart, so it did not undergo the same changes in inflection as the productive ^{*}*ntsa*-suffix; see Del Tomba (2023: 84–6) for the inflection of ^B*lāntsā*, ^A*lānts*.

Another important word in this regard is ^B*prentsa* ‘pregnant’; for the meaning, see above 5.2.4. With Schmidt (1975: 292–5), this word must go back to the feminine active participle of the simple thematic present **b^{her}-e/o-* ‘carry’: **b^{her}-o-nt-ih₂*, cf. Skt. *bhārantī*, Gk. *φέρουσα* ‘carrying’.⁴³³

I propose that the feminine **nt*-participle gradually became specialised as an agent noun forming occupational titles, leaving behind relics retaining the original feminine reference: ^B*lāntsa*, ^A*lānts* ‘queen’ and ^B*prentsa* ‘pregnant’ (Friis 2021). The first step must have been that the participle was used to refer to professions typically associated with women’s work, such as *wapāntsa* ‘weaver’. From there, the suffix lost affiliation with feminine gender and became productive as a way to form professional titles without gender specification, explaining why we find *ntsa*-forms with masculine personal names in the texts. This also explains why we find ^B(*na*)(*ka*)*ntsānaṃs* ‘of the spinstresses’ with the overt fem.pl. suffix ^B*-na-*, rather than the unmarked gen.pl. **naskantsats*. On the basis of ^B*wapāntsa* ‘weaver’ and ^B*taktsāntsa* ‘grinder, crusher’, secondary forms like ^B*warwāntsa* ‘receiver (?)’ and ^B*tarkāntsa* ‘carpenter’ could be formed. In these cases, stem-final *-a-* from the older forms seems to have been interpreted as part of the suffix and transferred. In the case of ^B*sarāntsa* ‘planter (?)’, the form must have been created at a relatively early stage, as it reflects the simple root **sar-*, also seen in ^B*sārm*, ^A*sārm* ‘seed’, without the root-final *-y-* found in the synchronic Tocharian verb (Malzahn 2010: 936; Peyrot 2013a: 830).

The Germanic languages offer several parallels to a generalisation of occupational titles with overt feminine marking, used indifferently to gender: Dan. *sygeplejerske* ‘nurse’ with the feminine suffix *-ske*, Dutch *secretaresse* ‘secretary, administrative assistant’, *kassière* ‘(shop) cashier’. An even closer parallel can be found in English where the suffix *-ster*, historically a female agent noun, lost its gendered meaning and came to be used in a moderately productive way to form denominal agent nouns without gender specification: OEng. *lārestre* ‘female teacher’, *webestre* ‘female weaver’ → MEng. *baxter* ‘baker’, *webster* ‘weaver’ (also in

⁴³³ It is possible that ^B*aknātsa*, ^A*āknats* ‘fool(ish)’ also represents a relic of a feminine participle: **ṇ-gn_{h3}-nt-ih₂* > **enknantya* with dissimilation of the nasals > **aknatsa* (Friis 2021: 16–7). It is harder to account for the meaning in this scenario, but it explains the zero-grade of the root better than the abstract origin, where the comparanda show full-grade of the root: Gk. *ἄγνωτος*, Skt. *ājñāta-*, Lat. *ignōtus* ‘unknown’ < PIE **ṇ-ǵneh₃-to-*. It is also more economical to assume that **-ih₂* only had one function in (pre-)Proto-Tocharian, namely to form feminines, not abstracts; *pace* Hackstein (2012: 155–7).

surnames).⁴³⁴ This prompted the creation of newer explicitly feminine words like *seamstress* and *spinstress* (Friis 2021: 16–7). This renewal is almost exactly parallel to the addition of *-na-* to ^B*naskāntsa**:

‘female spinner’	⇒	‘spinner’	⇒	‘female spinner(s)’
PT <i>*naskantsa</i>	>	TB <i>naskāntsa</i>	→	pl. <i>naskāntsana</i>
OEng. <i>spinster</i>	>	MEng. <i>spinster</i>	→	sg. <i>spinstress</i>

The gradual specialisation of the feminine participle also meant that the masculine took over feminine reference in the productive participle. This meant that—unlike other participles and verbal adjectives—the **nt*-participle no longer inflected for gender. This must have been the first step on the way for its syntactic development into a (quasi)-agent noun.

5.4.3. Early developments of the masculine

Returning to the masculine, the attested outcome of this paradigm is so different from that of the **uont*-stems, so major restructuring must have taken place. A crucial difference between the **uont*-suffix and the **nt*-participle is that the nom.sg. of the former retains a morphological marker **-u* after the loss of the final cluster. This separates the adjective PT **pernewə* from the PT substantive **perne* ‘glory’ from which it is derived (Pinault 2008: 525).

In the thematic active present participle, however, the m.nom.sg. would most likely have undergone these phonological developments:

$$\text{PIE } *-onts > *-onss > *-oss > *-os > \text{PT } *-e > \text{†}^B -e, {}^A -a^{435}$$

The outcome would thus be identical to that of the Proto-Indo-European *o*-stem nouns:

$$\text{PIE } *-os > \text{PT } -e > {}^B -e, {}^A -\emptyset$$

What is worse, it would be in direct conflict with deverbal nomina actionis like

⁴³⁴ The suffix is still in use in Dutch as a feminine agent suffix, e.g., *gebruikster* ‘female user’, *werkster* ‘maid; female worker’ (Geerts et al. 1984: 91).

⁴³⁵ See Malzahn (2010: 489).

^B*kāñme* ‘game’ < PT ^{*}*kañme* (vb. ^B*kañm-* ‘play’), ^B*traike* ‘confusion’ < PT ^{*}*trayke* (vb. ^B*trayka-* ‘be confused’).⁴³⁶ Most importantly, the m.nom.sg. would have lost its morphological marker as a participle, the suffix ^{*}*-nt-*. In the athematic paradigm, the m.nom.sg. would have been reduced to *CəC* in *aniṭ*-roots and *CəCa* in *seṭ*-roots. Table 5.22 presents the paradigm of the thematic present participle in pre-Proto-Tocharian with the transposed endings from the ^{*}*uont*-stems. The simplest solution to the undermarked m.nom.sg. would be a reintroduction of the suffix and ending of the m.obl.sg.: ^{*}*pəre* → ^{*}*pəre-nt-Ø*.

A renewal of an undermarked nom.sg. has happened elsewhere in Tocharian. For instance, the Tocharian word meaning ‘good’, ^B*kartse*, ^A*kāsu*, follows the same adjectival declension outside the m.nom.sg.; e.g., m.obl.sg. ^B*krent*, ^A*krant*, m.nom.pl. ^B*kreñc*, ^A*kraṃś*, f.nom.pl. ^B*krenta*, ^A*krant* (Krause & Thomas 1960: 154; Pinault 2008: 521–2). In Tocharian A, the m.nom.sg. has been exchanged with an etymologically foreign form *kāsu* < PT ^{*}*kaswe* (Pinault 2008: 521), but in Tocharian B, the m.nom.sg. has been remodelled. The productive adjective formant *-tse* has been added to what appears to be the same stem underlying the rest of the paradigm, i.e., ^{*}*kər-*. The m.nom.sg. was evidently deemed too short and in need of renewal, just like ^{*}*pəre*.

There are two other important words that hold information about the developments of the ^{*}*nt*-formation: the words for ‘king’, ^B*walo*, ^A*wäl*, and ‘queen’, ^B*lāntsa*, ^A*lānts*. There is general agreement that they go back to an old athematic active participle, although the reconstructions of the Proto-Indo-European form vary (Van Windekens 1976: 554; Lubotsky 1994b; Pinault 2008: 512; Kim 2009a: 75 fn. 9; Adams 2013: 631). The participle is formed to a Proto-Indo-European root stem of ^{*}*uelH-* ‘have power’, found in a stative in Lat. *valeō* ‘be strong’, and with a dental extension in Lit. *vėldėti* ‘attain, rule’ and Got. *waldan* ‘rule’ (LIV 2001: 676). It is not clear from the comparative evidence whether the root stem found in Tocharian reflects an original root present or aorist, although the semantics point to the former. Outside the m.nom.sg., the inflection of the words clearly shows the masculine and feminine counterparts of an *nt*-stem; see Table 5.23. Tocharian B even retains the archaic m.gen.sg. *-e* < PIE ^{*}*-os*.

The nom.sg. of the word for ‘king’ must have been restructured at some point, as the final *-o* is totally unexpected (compare the paradigms of ^{*}*uont*-stems, Table 5.21). It is, however, possible that we have the original nominative attested elsewhere. Since Sieg, Siegling & Schulze (1931: 230), it has been generally agreed that the first member of the compound ^B*ylaiñäkte*, ^A*wlāñkät* ‘Indra’ reflects a form of the word for

⁴³⁶ See Malzahn (2012b).

'king': PT **wəlan-nakte* 'king god' (Krause & Thomas 1960: 116; Van Windekens 1976: 554; Lubotsky 1994b).⁴³⁷

Table 5.23: The paradigm of the Tocharian words for ‘king’ and ‘queen’

	TB ‘king’	TA ‘king’	TB ‘queen’	TA ‘queen’
nom.sg	<i>walo</i>	<i>wäl</i>	<i>lāntsa</i>	<i>lāṁts</i>
obl.sg	<i>lānt</i>	<i>lānt</i>	<i>lāntso</i>	<i>lāmtsām</i>
gen.sg.	<i>lānte</i>	<i>lānt</i>	<i>lāntsoy</i>	<i>lāmtse</i>
nom.pl.	<i>lāñc</i>	<i>lāṁś</i>	<i>lantsona</i>	<i>lāntsañ</i>
obl.pl.	<i>lāntām</i>	<i>lāñcäs</i>	<i>lantsona</i>	<i>lāmtsas</i>
gen.pl.	<i>lantamts</i>		<i>lāñcäsši</i>	

The structure of the Tocharian B form requires some explanation. Winter (1987: 306–7) proposes a chain of events to explain the initial *y-* of ^B*ylai*^o. He posits a vocative first member of compound **wlant-* > **lai-* with reintroduction of **w-* and subsequent assimilation to the following syllable, resulting in *ylai*^o. This is—as also stated by Lubotsky (1994b: 68)—quite *ad hoc*. Winter (1987: 305–7) proposes a sound law **-an* > *-ai* to explain the unexpected ending of *ylai*^o. A better solution was suggested by Pinault (apud Carling 2003a: 93 fn. 47; see also Pinault 2008: 484) for the unique nom.pl. ^B*śray* ‘grown man’: **-ōn-es* > **-aňā* > **-ay*. However, as pointed out by Peyrot (2012c: 215–6), Pinault’s sound law is based only on two words ^B*ylai*^o and ^B*śrāy*, and should therefore be treated with caution.

Recently, Del Tomba (2023: 164–5) has suggested a version of the sound law, which does not only explain ^B*ylai*^o and ^B*śrāy*, but also the nom.pl. *-aiñ* of certain nouns in nom.sg. ^B*-o*: PIE **-ōn-es#* > PT **-áñā#* > pre-TB **-áyñā#* > ^B*-aiñ*. Two additional assumptions are required to get to ^B*ylaiñäkte*, namely that the phrase ‘king god’ was not fully compounded by the time the sound law operated and that degemination took place afterwards. These extra assumptions are not implausible and the explanation of the form is thus overall quite attractive:

PT **wálan ñakte* > **walañ ñakte* > **walaĩñ ñakte* → **walaĩññakte*
 > pre-TB **yalaiññakte*

⁴³⁷ Adams (2013: 563) rather takes ^Bylai-, ^Awlā- as a reflex of PIE *uelh₂- ‘strike’.

According to Lubotsky (1994b), the m.nom.sg. of the athematic nouns originally had full-grade in the root, not the suffix: pre-PT **wālan* < PIE **uélHnts*; see also Beekes (1985: 64–77). As there is no clear motivation for analogical introduction of a full-grade or palatalisation, this constitutes good evidence for such an ablaut scheme.

This reconstruction may explain why the m.nom.sg. was in need of renewal as it would have been the only form of the paradigm with initial palatalisation, and in due course, it would also have lost its ending. Both Pinault (1989a: 81; 2008: 421–2) and Lubotsky (1994b: 69) opt for an introduction of an individualising **ōn*-suffix: either **uélH-ōn(s)* or **uélH-ōnt-s*. The development of final *-ōn(ts)* to ^B*-o* is not universally accepted. Malzahn (2010: 489), followed by Fellner (2014b: 60), argues for a development **-ōnt* > PT **-ā*. Both scholars invoke ^B*täryāka* ‘30’, supposedly regularly from PIE **-ōmt*; see Schindler (1967: 240).⁴³⁸ There are other explanations for those forms, however, one of which is Rasmussen ([1978] 1999b: 26 fn. 33) who explains the Tocharian decade words through haplology and levelling. From a functional and phonological perspective, Pinault’s and Lubotsky’s solutions, **uélH-ōn(s)* or **uélH-ōnt-s*, therefore seem the most viable to me.

With this change in the m.nom.sg., **wālōn* was lexicalised with the trivial semantic change ‘the ruling one’ ⇒ ‘ruler’ ⇒ ‘king’ (leading to the development of the meaning ‘queen’ in the feminine). This seems to have happened very early, before the loss of final consonants and the reintroduction of the stem formant **-nt-* in the nominative of other *nt*-participles.

Another possible contender for a relic of an athematic **nt*-participle is ^B*pānto* usually translated as ‘support, aid’ and borrowed into Tocharian A as *pānto*. Hilmarsson (1986: 223) proposes that this noun is the result of an **ōn*-stem extension of an original active participle to a PT root stem **pa-* < **ph₂-*; cf. **peh₂* ‘protect’, Ved. prs.act.3sg. *pāti*, Av. *pāt* ‘protects’. It is noteworthy, however, that no such stem is attested in the verbal system of Tocharian. Only the extended root ^B*pask-*, ^A*pās-*, extracted from an earlier *sk*-present, is found; cf. Lat. *pāscō* ‘let graze, feed’, (Hackstein 1995: 175–6; Malzahn 2010: 699). If this etymology is true, it would show that the **nt*-participles were renewed at different times, since ^B*pānto* shows the **nt*-suffix, while ^B*walo*, ^A*wāl* does not. Recently, a proposal by Dragoni (2023: 131–4) takes ^B*pānto* as a borrowing from Old Khotanese *pando* ‘path, way’ (or possibly an earlier

⁴³⁸ A parallel to *täryāka* is also made by Klingenschmitt (1994: 404) who argues that compensatory lengthening has taken place in both forms: **-ŷnts* > **-ŷs*. This allows him to derive ^B*walo*, ^A*wāl* directly from PIE **uélH-ent-s* > pre-PT **wālants* > **wālās* > PT **walo*. He does not explain the implications of this sound change on the rest of the participles, however.

stage). He proposes a new meaning ‘friend, companion’, pointing to cases in which ‘way’ has come to mean ‘advice’ and ‘advisor, friend’ in other Iranian languages. This possibility seems quite attractive, and it saves us the trouble of explaining why the outcomes of **uH-nt-* ‘ruling’ and **ph₂-nt-* ‘protecting’ are different in Tocharian. We can therefore leave *^Bpānto* ‘friend, companion’ out of consideration.

5.4.4. The inflection of the agent formations

The disintegration of gendered inflection represents in my view the first step in the journey from participle to agent noun for the productive *nt*-formation. It must have happened before Proto-Tocharian, since we find the lexicalised suffix in both languages. This is also compatible with the similarities in usage between Tocharian B and Tocharian A in the productive agentive formation.

The next step involves the inflection that characterises four of the formants under examination: *^B-nta*, *^B-ñca*, *^B-ntsa*, and *^B-ca*. The apocope in Tocharian A has obscured the original paradigm of the *nt*-formation, making it difficult to establish the relative chronology of the introduction of the inflection. On one hand, as pointed out by Malzahn (2010: 489 fn. 21) with reference to Peters (1991: 243 fn. 9), the lack of *a*-umlaut in *^B-enta* and *^B-eñca* (not *†-anta*, *†-añca*) indicates that the suffix-final *-a* was added relatively late. On the other, Tocharian A does show an *-ā-* in most forms of the paradigm, and Tocharian A and Tocharian B agree in forms of the paradigm, e.g., in the nom.pl. *^Baśeñcañ* ‘leaders, leading’, *^Akoṣāntāñ* ‘killers, killing’.

The inflection of the NC-formations is found in another deverbal agentive formation, namely verbal governing compounds of the type *^Bkärtse-rita* ‘seeker of good’ (Bernhard 1958: 135; Malzahn 2012c); see Table 5.24. Hilmarsson (1987: 42) suggests that the inflection of the NC-formations was taken over from this type of noun, which, according to him, has its source in root nouns with stem-final **h₂*; cf. Lat. *agricola* ‘farmer’, OCS *sluga* ‘servant’, Gk. PN Ὀλυμπιανικός. Other accounts attribute the *agricola*-type to stems in **-eh₂*, either feminine abstracta reanalysed as male individuals (Klingenschmitt 1992: 89) or bahuvrīhis reanalysed as verbal governing compounds (Schindler apud Malzahn 2012c: 126). Bammesberger (1996: 54), however, revives the old hypothesis, arguing that *agricola* (from the *aniṭ*-root **k^wel-* ‘turn’) could have been formed on the basis of forms to *seṭ*-roots like *indi-gena* ‘native person’, cf. *-gena* < **génh_i*, which cannot reflect **-eh₂*.

Malzahn (2012c: 126) has shown that the *°rita*-type is exclusively found as the second member of compounds and that they are in complementary distribution with verbal governing compounds with a final member in *^B-i*, *^A-e*, e.g., *^Bkärtse-yāmi* ‘good-doer’, *po-aiši* ‘all-knower’, *^Apālska-pāše* ‘thought-protector’; the *°rita*-type is found to

verbs in final *a*, while the *°aiśi*-type is found to verbs without (Malzahn 2012c: 123–4). On these grounds, she (2010: 488) rejects Hilmarsson’s proposal. In her opinion, the two types of endings must be distinguished etymologically, since “there is no productive agentive suffix **-ā* in Tocharian”; see also Pinault (2012b: 196) who calls the resemblance illusory. Instead, Malzahn (2010: 490) opts for an entirely intra-paradigmatic chain of events. She reconstructs the pre-Proto-Tocharian nominative singular with a long-grade **-ōnt* which in her system would give PT **-a*, while the obl.sg. **-ont-ām* would give **-entä*. From there, a conflation happened within the paradigm, remarking the nominative with the **-ont*-formant, while the **-a* spread from the nominative to the rest of the paradigm. However, the development of **-ōnt* is highly contentious; with Pinault (2008: 421–2; 2012b: 193), it probably developed differently: **-ōnt* and **-ōn* > ^B*-o*. In addition, the reconstruction of the thematic participle as **-ōnt/-ont-* is not warranted for Proto-Indo-European; see 5.4.1.

Table 5.24: Verbal governing compounds in ^B*-a*, ^A*-*

TB	<i>°rita</i> ‘-seeker’	<i>läkle-lyaka</i> * ‘misery-seer’	<i>lwaksā-tsaika</i> ‘potter’ ^ε
nom.sg.	<i>kärtse-rita</i> ^α	—	<i>lwaksā-tsaika</i>
obl.sg.	<i>kärtse-ritai</i>	—	—
gen.sg.	—	—	<i>lwaksā-tsaikantse</i>
nom.pl.	<i>yikne-rita</i> ^β <i>yolo-rita</i> ^γ	<i>läkle-lyakāñ</i> ^δ —	— —
TA		<i>šotre-lyāk</i> ‘sign-seer’	<i>kuntis-tsek</i> ‘potter’ ^ε
nom.sg.		—	<i>kuntis-tsek</i>
gen.sg.		—	<i>kuntis-tsekāp</i>
nom.pl.		<i>šotre-lyākāñ</i>	—

(Malzahn 2012c: 116)

^α *kärtse-rita* ‘seeker of good’.

^β *yikne-rita** ‘seeker of the (right) path’.

^γ *yolo-rita** ‘seeker of evil’.

^δ Sic! With unexpected long *ā* in the nom.pl. ending (PKAS7E a6).

^ε Lit. ‘pot-shaper, pot-maker’.

With some modification and expansion, Hilmarsson's (1987: 42) proposal is quite attractive. If we accept the verbal governing compounds as a type of agentive formation, his argument is strengthened rather than weakened, since another important formation now can be included in the inflectional class at an early stage: the old feminine agent nouns in **-ntsa*. This means that at this stage in pre-Proto-Tocharian, a nominal declension in nom. sg. **-a*, obl.sg. **-ai* existed separate from the feminine adjectival **a*-stems. This declension was characterised by the lack of gender-distinction and agentival function. At this stage—according to my hypothesis—both those characteristics (lack of gender-distinction and agentival meaning) were also true for the previously masculine **nt*-participle. In addition to this, the proposed analogical extension of **-nt-Ø* into the nom.sg. left quite an unstable paradigm, unparalleled in Tocharian. In other *nt*-stems and the preterite participle, the m.nom.sg. and m.obl.sg. have been kept distinct from each other throughout their developmental history, despite major restructurings in the paradigm; see Peyrot (2010).

A final motivation may have come from the complementary distribution between agent nouns in *-i* and *-a*, mentioned above. The existence of an agent noun in ^B-*i*, ^A-*e* formed to the root parallel to the ^o*rita*-type could have made ^B-*a*, ^A-*Ø* (< PT **-a*) analysable as an agent noun final rather than a root-final vowel.

These factors could have served as motivation for the paradigm to switch from the irregular paradigm (nom.-obl.sg. **-nt*) to the agentival declension (nom.sg. **-nt-a*, obl.sg. **-nt-ai*); see Table 5.25. In all likelihood, this switch did not happen all at once, but must have occurred on a lexical basis starting with forms used frequently as substantives. These may still form the basis for the ^B*nta*-formation. When the pressure of agentival *a*-forms was great enough, the declension became ubiquitous for the remaining participles.

Table 5.25: The change in inflection

	Pre-PT		PT
nom.sg.	* <i>kaus'ent</i>	→	* <i>kauṣent-a</i>
obl.sg.	* <i>kaus'ent</i>	→	* <i>kauṣent-ai</i>
gen.sg.	* <i>kaus'ente</i>	→	* <i>kauṣent-</i>
nom.pl.	* <i>kaus'ení</i>	>	* <i>kauṣeñc-añ</i>
obl.pl.	* <i>kaus'entən</i>	→	* <i>kauṣent-an</i>

5.4.5. Athematic NC-forms

The next question to be dealt with concerns the discrepancy in stem formation between Tocharian A and Tocharian B. In Tocharian B, the *ñca*-formation is—with less than a handful exceptions—limited to thematic stems. Only four examples of athematic ^B*ñca*-forms are found:⁴³⁹ *mäskeñca* ‘being’ to *e*-prs.[3] *māsk-e* ‘be(come)’, *yneñca* ‘going’ to a root prs.[1] *y-* ‘go’, *śawāñca* ‘eating’ to *a*-prs.[5] *śawa-* ‘eat’ and *ṃmāñca* which seems to be formed to an unattested TB verb **wāma-* (Burlak & Itkin 2000: 33; Itkin & Kuritsyna 2020: 86).⁴⁴⁰ No such limitation is found in Tocharian A. This raises two questions: which situation was original to Proto-Tocharian and what happened to the **nt*-participle in athematic stems?

A key morphological difference between the athematic and thematic forms of ^B*-nta*, ^B*-ñca*, and ^A*-nt* is that the suffix palatalises the thematic stem, but not the athematic stem:

TB	athem.	root prs.[1] <i>yökänta</i> ‘drinker’, <i>e</i> -prs.[3] <i>mäskeñca</i>
	them.	<i>s</i> -prs.[8] <i>kauṣenta</i> ‘killer’, <i>sk</i> -prs.[9] <i>aiṣṣeñca</i> ‘giving, giver’
TA	athem.	root prs.[1] <i>tränkänt</i> ‘speaking, speaker’
	them.	<i>s</i> -prs.[8] <i>eṣant</i> ‘giving, giver’

This is diachronically unexpected, since the thematic vowel **-o-* should give

⁴³⁹ The form *marsärṣṣañca* to ^B*märs-* ‘make forget’ in THT1231 a3, *marsärṣṣañca läklenta* ‘one who makes [someone] forget the sorrows’ should be emended to *marsäṣṣeñca* (Malzahn 2010: 758; Peyrot 2013a: 787 fn. 559).

⁴⁴⁰ Compare TA *wāmā-* ‘set (of the sun)’, *koṃ-wmānt* ‘sun set’ (Carling & Pinault 2023: 152, 435).

unpalatalising ^B-*e*-, ^A-*a*-. Furthermore, if the athematic suffix in Proto-Indo-European had a full-grade formant PIE **-ent-*, we would expect it to yield palatalising PT **-’ə*-. Synchronically, however, this distribution is completely regular and is also found in the Tocharian present gerundive (Malzahn 2010: 490; Fellner 2014b: 58):

TB	athem.	prs.[3]	<i>mäskelle</i> ‘is to be’
	them.	prs.[9]	<i>aiṣṣälle</i> ‘is to give, be given’
TA	athem.	prs.[3]	<i>mäskal</i> ‘is to be’
	them.	prs.[8]	<i>eṣäl</i> ‘is to given, be given’

Malzahn (2010: 495) argues that this morphophonological rule is the reason why *-ñca* is limited to thematic stems; the palatalising quality was interpreted as an integral part of the suffix, which in turn excluded athematic stems from the ability to form an *ñca*-form.⁴⁴¹ This seems plausible as one factor for the distribution, but it probably cannot stand alone. With the realisation that the *nt*-formation descends from the Proto-Indo-European active participle, we may note that the Tocharian present stems that took exclusively middle inflection, the *e*-prs.[3] and the *o*-prs.[4], probably did not form an *nt*-participle in the early stages of the branch. When the affiliation with active voice ceased to be productive, the morphophonological rule pointed out by Malzahn may have prevented these classes from forming *nt*-forms.⁴⁴² In the *na*-prs.[6], another potential factor may have been present, namely that the nasal of the suffix *-na-* caused dissimilation of the *nt*-suffix, at least in verbs with a nasal in the root; see fn. 433. If enough productive athematic classes did not form *nt*-participles, it could have been interpreted as a rule.

The different treatment of athematic and thematic participles seems to have begun already in pre-Proto-Tocharian. It probably was not completely carried through by the disintegration of Proto-Tocharian, however. This can account for the fact that the athematic participles are missing from Tocharian B, but are frequent in Tocharian A. In Tocharian B, the elimination was carried out in full (with the

⁴⁴¹ Following a suggestion by Peters (2004: 267 fn. 4; 2006: 344 fn. 48), Malzahn (2010: 495) proposes that the *nt*-formation originated in an endingless locative **-ēnt* in the athematic paradigm, explaining the palatalising feature. This is rightly criticised by Pinault (2012b: 193) and by Fellner (2014b: 56), who point out that there is neither an internal motivation or comparative evidence for such a change. In addition to this, it is quite uneconomical to assume that a feature arose in the athematic paradigm in order to explain why it is no longer present there.

⁴⁴² In addition to the intransitive semantics of most of the verbs in *e*-prs.[3] and *o*-prs.[4].

mentioned exceptions), perhaps due to the growing number of alternative participles/agent nouns available, while in Tocharian A, the athematic participles were restored and regularised.

^B*maska-*, ^A*māskā-* ‘be(come)’ is a defective verb. In Tocharian B, it forms an *e*-prs.[3] and an *a*-prt.[1],⁴⁴³ but no separate subjunctive. Tocharian A shows an *a*-prs.-sbj.[3] (suffix ^A*-a-*, ^B*-e-* < PT **-e-*) and a sigmatic prt.[3]; see fn. 61 p. 48. Semantically, it overlaps with ^B*nes-* ‘be’ and is perhaps used in a pseudo-suppletive way with this verb.⁴⁴⁴ Because of the semantics of the verb, the present stem can also express the future, which is typically expressed by the subjunctive (Peyrot 2013a: 388; Malyshev 2022: 147–8). Etymologically, the *communis opinio* takes this verb as a former **ske/o-* present to PIE **men-* ‘remain’: PIE **m_h-ske/o-* > PT **mask-* (Melchert 1977: 104 [1978]; LIV 2001: 437; Malzahn 2010: 766; Peyrot 2013a: 423). Thus, while the verb is technically athematic in synchronic Tocharian B, it is based on a thematic stem. We may therefore take ^B*māskeñca* as a relic formation; since the suffix does not palatalise, the form may be inherited *mutatis mutandis* from PIE **m_h-sko-nt-*.

As discussed in 5.2.5, the verb *y-* ‘go’ has a very strange stem pattern. Malzahn (2010: 492) observes that the stem variant *yn-* is only attested in front of *-e-* (with the notable exception of ^B*ynūca*): prs. 1pl. *ynem*, 3pl. *yanem*, prs.ptcp. *ynemane*, but prs. 1sg. *yam*, 3sg. *yam*, 2pl. *yacer*, prs.ger. *yalle*. For this reason, she classifies the verb as having both a root prs.[1] and an *ʔ/e*-prs.[2], with *yne-* as the thematic allomorph. Klingenschmitt (1975: 158 fn. 12), Hackstein (1995: 304 fn. 47), and Peyrot (2013a: 442–3) explain the stem as an internal Tocharian B development, originating in the pre-TB prs.act.3pl. **yən*, remarked with the 3pl. ending → **yən-en*. First, it spread to the 1pl. *ynem*, and then probably to the prs.ptcp *ynemane*. From there, it could be reanalysed as a type of thematic stem variant, allowing the creation of *yneñca*.

The *ñca*-forms with root-final *-a-* are more difficult to account for. The form ^B*śawāñca* curiously shows a full vowel stem usually only found in the preterite: prt.act.2sg. *śawāsta*, 3pl. *śawāre*, mid.3sg. *śawāte*. In the present-subjunctive, the other finite and nonfinite forms have *ə*-grade: e.g., *a*-prs.-sbj.[5].act.3sg. ^B*śuwam*, prs.act.3sg. ^A*śwāṣ*.⁴⁴⁵ In Tocharian A, the *nt*-form shows the expected *ä*-grade: nom.sg. *śwānt*. Pinault (1994a: 179–80), with reference to J.E. Rasmussen, suggests that ^B*śawāñca* is a relic, showing an original Narten present that may be reflected in

⁴⁴³ Only one form is attested: 3sg. ^B*maska* / *máska* / (THT357 b1) (Peyrot 2013a: 790 fn. 581).

⁴⁴⁴ The subjunctive of ^B*nes-*, suppl. ^B*taka-*, forms no infinitive. Peyrot (2013a: 767 fn. 390) suggests that the infinitive ^B*māskatsi* fills that void.

⁴⁴⁵ In Tocharian A, this verb is suppletive with *tāpā-* providing the non-present stem.

modern Iranian languages, e.g., MPer. *ǰāvīdan* ‘chew’, Pashto *žōv-* ‘bite’. This present type is not safely assured for the verb. In general, the prehistory of ^B*śawa-*, ^A*śāwā-* ‘eat’ and its relationship to other verbs with palatalising ‘a-grade in the preterite (the so-called ^B*tyāka*-type) is highly contested; see Peyrot (2012b: 102–6) and the discussion in 6.4.2. It seems most likely that the *ə*-grade of the present-subjunctive is original, also in the *ñca*-formation, which necessitates an inner-Tocharian solution. Malzahn (2010: 406) suggests analogy from the preterite, **śwāñca* → **śawañca*, but it is not obvious why the form was altered to be even more irregular form if it used to have *ə*-grade. Possibly the answer could be related to the number of syllables. The majority of *ñca*-forms have three or more syllables in the nom.sg.; in fact, only two have two syllables: ^B*preñca* ‘bringing’ and ^B*šmeñca* ‘sitting’. It is conceivable that **śwāñca* was remade into *śawañca* to give it the structure and rhythm of the other *ñca*-forms. We may note that both the disyllabic *ñca*-forms are formed to verbs that are limited to the present, ^B*pər-* ‘bring, carry’ and ^B*šəm-* ‘sit’, and have no forms with a full vowel in the root on which to be remade (Malzahn 2010: 706–7, 926–7). Regardless of the original vocalism, I can see no way that an *ñca*-form could have been made analogically to an *a*-present of class [5] within Tocharian B, so ^B*śawañca* must be considered a relic from before the *ñca*-formation was restricted to thematic stems in Tocharian B.

The other Tocharian B form with root-final *-a-* is *ṽmāñca*, found once in THT424 b5 in the phrase *ṽmāñca kauntse* ‘the setting of the sun’, which looks like the equivalent of the TA compound *koṃ-wmānt* ‘sunset’ (Burlak & Itkin 2000: 33). In Tocharian A, the verb forms an *ā*-subj.[5] stem found in the abstract noun *wmālune* and a causative prt.[2] *wom(ā)r* (Carling & Pinault 2023: 435). On this basis, we can infer a (pre-)TB verb **wəma-* ‘set (of the sun)’. Like *śawañca*, *ṽmāñca* must be considered an archaism within Tocharian B. Due to its semantics, it is quite possible that it was lexicalised in the meaning ‘sunset’, which would explain the preservation of the more archaic morphology.

In this discussion, we must also consider ^B*auñento*, ^A*oñant* ‘beginning’. It is clearly a derivative of the verb ^B*awn-*, ^A*o(ñ)-* ‘hit, meet; M begin’. The shape of the root and the stem pattern are not straightforward in this verb; the nasal is a steady part of the root in Tocharian B, while it is missing in the Tocharian A preterite (Malzahn 2010: 550–2; Peyrot 2013a: 724). It is one of five verbs that show a alternation between a Tocharian A nasal subj.[7] and a Tocharian B root subj.[1] (with root-final non-palatal nasal). The diachronic analysis of this group of verbs is highly disputed (Pedersen 1941: 198; Van Windekens 1944: 276; Lane 1959: 176; Pinault 1994a: 132–4; Hilmarsson 1991a; Malzahn 2010: 339–41; Peyrot 2013a: 585–9). The *communis opinio* assumes that

an athematic nasal stem underlies both the Tocharian A thematic *ñ*-subj.[7] and the comparable Tocharian B root subj.[1]. I will follow the account of Peyrot (2013a: 589) who argues that they represent two different outcomes of a Proto-Indo-European **-neṃ/nu*-present:

$$\begin{aligned} \text{PIE } *-neṃ/nu- &> \text{pre-PT } *-ńaw/nə- \rightarrow \text{PT } *-ñā/nə- \\ &\rightarrow \text{Pre-TA } *-ñā- \rightarrow \text{TA } -ñä/ñā- \\ &\rightarrow \text{Pre-TB } *-nə- > \text{TB } -nə- \end{aligned}$$

On account of these diachronic considerations, the noun *auñento*, *oñant* is often taken as a reflex of an athematic participle; see Malzahn (2010: 488 fn. 19), Pinault (2012b: 195). The problem with this is that it does not account for the stem-final palatalisation; compare the athematic forms ^B*mäskeñca* ‘being’, ^B*yneñca* ‘going’. The forms ^B*auñento*, ^A*oñant* on their own are not strong enough to support Peters’ derivation of **-’ent-* < PIE athem. loc. **-ēnt* (Peters 2004: 267 fn. 4; 2006: 344 fn. 48).

A simpler solution would be to take ^B*auñento*, ^A*oñant* as a pre-Proto-Tocharian innovation, formed with the thematic suffix **-’ent-*, either at the expense of an underlying athematic participle or as a neologism. Pinault (2012b: 195) argues against such a solution, since the *nta*-formation was not particularly productive within his hypothesis. However, the semantics, the change in inflection, and the fact that the word is found in both languages place it early in the relative chronology, making it likely that the formation was created—and lexicalised—before there was a dichotomy of (pre-TB) *-nta* and *-ñca*.⁴⁴⁶ It seems most likely that the form never received the agentival endings nom.sg. *-a*, obl.sg. *-ai*, but was rather transferred to noun class 4.a with nom.sg. *-o*, obl.sg. *-ai* (e.g., nom.sg. *yerkwanto*, obl.sg. *yerkwantai*, obl.pl. *yerkwantam* ‘wheel’) in analogy with other deverbal abstract nouns like ^B*prosko* ‘fear’ and ^B*yoko* ‘thirst’. Most likely, the reason for the creation of this form is to be found in behaviour of the nasal in this verb. The pattern of palatalisation for this group of verbs, PT **-ńaw/nə-* (< PIE **-neṃ/nu-*), must have been non-transparent for speakers synchronically, since morphological palatalisation in the stem suffix usually was found only in thematic stems, e.g. prs.[2] **-’ə/e-*, sk-prs.[9] **-ššə/ske-*. If an original athematic participle contained the palatalised stem variant, **auñā-nt-* (vel sim.), it could be reanalysed as a thematic participle and corrected to **auñ-ænt-*, perhaps under influence from thematic nasal stems like *weñenta* < **weñ-’ent-*.

⁴⁴⁶ See subsection 5.4.7.

5.4.6. Tocharian A *-nt*

By placing a large amount of the innovations needed within the prehistory of TB, we are able to arrive at the Tocharian A system with a minimal amount of changes. In fact, from the developments outlined about, the only necessary change to get to the attested Tocharian A paradigm is the elimination of the the palatalised case endings (nom.pl., possibly gen.sg.); see Table 5.26. More importantly, while the respective suffix variants of the thematic and athematic participle were kept distinct in PT **-ant-/*-ent-*, they merged again in certain environments in Tocharian A. Outside the nom.sg., vowel weakening would reduce the suffix of the thematic participle to *-änt-* (< **-ant-* < **-ent-*).⁴⁴⁷ Apart from the difference in palatalisation of the stem-final vowel, many forms would be formed with the same suffix in both thematic and athematic stems: root prs.[1] nom.pl. ^A*tränkäntāñ* ‘speaking’, s-prs.[8] ^A*aršäntāñ* ‘evoking’. This allowed the language to go down a much less complicated path by simply adding the athematic *nt*-forms back into the system, e.g., root prs.[1] ^A*klyant* ‘standing’, *ā*-prs.[5] ^A*lkānt* ‘seeing’, *nā*-prs.[6] ^A*kärsnānt* ‘knowing’.

Table 5.26: The development of TA *nt*-forms

	PT		Pre-TA		TA
nom.sg.	<i>*kauṣenta</i>	>	<i>*koṣantā</i>	>	<i>koṣant</i>
obl.sg.	<i>*kauṣentai</i>	→	<i>*koṣantān</i>	>	<i>koṣantām</i>
gen.sg.	<i>*kauṣeñc-epi</i>	→	<i>*koṣant-āp</i>	>	<i>koṣantāp</i>
nom.pl.	<i>*kauṣeñcañ</i>	→	<i>*koṣant-añ</i>	>	<i>koṣäntāñ</i>
obl.pl.	<i>*kauṣentan</i>	→	<i>*koṣant-ās</i>	>	<i>koṣantās</i>

Finally, the lexicalised ^A*nt*-forms should be accounted for. Klingenschmitt (1994: 314 fn. 6) suggests that ^A*pekant* ‘painter’ is an archaic type of *nt*-formation, formed from the prt.-sbj. stem on the basis of inherited aorist participles. This is followed by Malzahn (2010: 485), who proposes a solution similar to that of ^B*weñenta* ‘orator’, namely that ^A*pekant* ‘painter’, ^A*tsepant** ‘dancer’ and ^A*rāpant** ‘musician’ are relics of former present stems (Malzahn 2010: 724). It is a plausible suggestion, but the diachronic facts surrounding ^A*pekant* speak against it. The verb to which ^A*pekant* is

⁴⁴⁷ For the variations in the suffix vocalism and the conditions of vowel weakening, see Malzahn (2010: 482–3).

derived, ^B*payk-*, ^A*päyk-* ‘write, paint’, is the only one of the three that has a good Proto-Indo-European etymology: **peik-* ‘carve, form’. Comparative evidence from other Indo-European languages, as well as Tocharian B, shows that the verb formed an original nasal present: infix prs.[7] 3sg. ^B*pinkäm* ‘writes, paints’, prs.ptcp. *pinkemane*, Skt. prs.act.3sg. *piṁśáti* ‘carves; forms’ (LIV 2001: 465–6; Adams 2013: 410). Lat. *pingō* ‘paint’ must also belong here with a voicing of the root-final **k* > *g*, due to the nasal (de Vaan 2008b: 465–6).

The Tocharian A forms can probably be explained more easily another way. Pinault (2012b: 200) underlines the importance of ^A*pekant* being found side by side with an action noun *peke* ‘painting’. On the basis of the action noun, he posits a collective noun which was subsequently individualised to PT **paykānt-*, ultimately yielding the attested Tocharian A form.

It is also possible that the expected *nt*-form was remade in the image of the type ^A*peke*: **pinkant* → *pekant*. This could especially have been motivated by the loss of the *n* in the present stem of Tocharian A: prs.act.3sg. *pikāš* ‘paints’. Such a change would give ^A*pekant* the appearance of being formed to the subjunctive stem. It is possible that ^A*tsepant** was created the same way on the basis of **tsepe*, cf. ^B*tsaipe* ‘music’ (see 5.2.7), but in the case of ^A*rāpant**, this is unlikely as the vocalism does not correspond to that of the action noun ^A*rape* ‘music’. However, both *tsepant** and *rāpant** could have been created secondarily from *pekant*, since they all belong to the same specific semantic sphere, artistic professions. Because of their aberrant appearance, it is no surprise that they were lexicalised as substantives completely. Thus, while these ^A*nt*-forms are the equivalents of the ^B*nta*-formation in that they are lexicalised former **nt*-participles, they do not share a common origin. Each of the formations came about through independent development. In the following subsection, a hypothesis for the trajectory of the ^B*nta*- and ^B*ñca*-formations will be presented.

5.4.7. The development of TB *-nta* and *-ñca*

The idea that *-nta* and *-ñca* originate from the same paradigm is by no means new. This is the explanation offered by Krause & Thomas:

“Je nach dem auf *-nt-* folgenden Vokal mußte im Toch. das *-t-* bleiben oder erweicht werden. Dabei sind im Otoch. die unerweichten, im Wtoch. die erweichten Formen verallgemeinert worden. Die unerweichten Formen erscheinen im Wtoch. im Typ *kausenta*” (Krause & Thomas 1960: 261)

Among other proponents are Ringe (1991: 96 fn. 85) and Malzahn (2010: 491).⁴⁴⁸ It is criticised by Fellner (2014b: 58) who questions the motivation of the spread of the palatalised variant since it is only expected in the nom.pl. However, a spread of suffix palatalisation from the nom.pl. is also found in the preterite participle (Peyrot 2010: 78–9); see Figure 5.1.

Peyrot (2010: 78) argues that this spread came about when the nom.pl.-ending **-wes-ʼas* was resegmented to **-weš-əs*. The circumstances for the **nt*-participle were different, but a similar principle may account for the spread of the formant *-ñc-* in that paradigm.

Figure 5.1: The spread of palatalisation in the prt.ptcp.

m.nom.sg.	<i>*-wu</i>	>	<i>*-wu</i>
m.obl.sg.	<i>*-wesən</i>	→	<i>*-wešən</i>
m.nom.pl.	<i>*-wešəs</i>	>	<i>*-wešəs</i>
m.obl.pl	<i>*-wesəns</i>	→	<i>*-wešəns</i>

If one accepts the gradual movement of **nt*-forms to the agentival *a*-declension proposed in 5.4.4, we can understand the spread of palatalisation. The first—and most substantival—forms would receive the *a*-inflection first; since **-añ* does not cause palatalisation, this change of inflection would eliminate the only form in paradigm with palatalisation; see Figure 5.2.

Figure 5.2: Transfer to *a*-inflection

	pre-PT	PT	TB
subst. nom.pl.	<i>*-nt-ʼə</i>	→ <i>*-nt-añ</i>	> <i>yokäntañ</i>

⁴⁴⁸ Another morphological approach is taken by Thomas (1984: 215–7) who takes the palatalised variant as the former feminine which was relegated to agent noun when the formation lost its gendered inflection, but this suggestion does not work phonologically as the feminine should yield **-ntsa*, not **-ñca*.

The majority of forms, still in use as participles, would only receive the agentival inflection later, meaning that the palatalised suffix allomorph in the nominative plural had more time to spread in the paradigm. Additionally, if the spread of palatalisation had already happened in the preterite participle, this may also have exerted some influence on the **nt*-participle by associating participial/adjectival inflection with palatalisation of the suffix. When the last **nt*-participles were incorporated into the agentival inflection, there would have been fertile ground for a reinterpretation of the palatalisation as a feature of the suffix rather than the nominative plural ending, and it could therefore be preserved.

There is also the possibility that the nominative plural was not the only form of the paradigm with a palatalised suffix. There is a palatalising element present in the m.gen.sg. of certain adjectives and verbal nouns in Tocharian B: e.g., adj. m.gen.sg. *kreñcepi* ‘good’, ordinal gen.sg. *tricepi* ‘third’, prt.ptcp. m.gen.sg. *yāmoṣepi* ‘done’, prs.ger. gen.sg. *nasalyepi* ‘is to be’. In Tocharian A, this ending, *-yāp/-āp*, is not limited to adjectives, but is also found in substantives and does not necessarily palatalise (Pinault 2008: 490).⁴⁴⁹ It seems clear that the element *-epi* is somehow postpositional in origin, but it is uncertain whether the palatalising feature belongs to it. It is quite possible that the **nt*-participle in Proto-Tocharian had the palatalised ending **-’epi*, like the preterite participle and the gerundive, and that it was depalatalised in Tocharian A, just as the nom.pl. was. If this was the case, the introduction of the more substantival ending in Tocharian B, i.e., *-antse*, could also have triggered resegmentation; see Figure 5.3. From these two case forms, the palatalised suffix variant could spread in the paradigm, creating a morphological gap between the lexicalised ^B*nta*-agent nouns and the productive ^B*ñca*-formation which was syntactically more adjectival.

Figure 5.3: Gradual introduction of **-antse* in the gen.sg.

	PT	pre-TB		TB
subst. gen.sg.	<i>*-nt-’epi</i>	→ <i>*-nt-’antse</i>	→ <i>*-nt-antse</i>	> <i>*-ntantse</i>
ptcp. gen.sg.	<i>*-nt-’epi</i>		→ <i>*-nt---antse</i>	> <i>*-ñc-antse</i> > <i>*-ñcantse</i>

⁴⁴⁹ The morpheme must also be related to the m.gen.sg.-ending of the demonstrative pronouns, e.g., anaph. m.gen.sg. *cpi/cwi*; see Pinault (2017: 1337), Jasanoff (2019a: 48).

Some elements of this hypothesis are admittedly speculative, but the hypothetical intermediate stages and each step between them are motivated to a reasonable degree.

5.4.8. ^B-*ca* and ^B-*uki*

The final two members of the Tocharian B complex of agent noun suffixes are ^B-*ca* and ^B-*uki*; see 5.2.5 and 5.2.6, respectively. Hackstein (2012: 157–8) argues that the *ca*-suffix has developed from a Sievers variant of an abstract derivative in *-tiēh₂*, giving parallels from Italic. This hypothesis, however, does not explain how the suffix came to be almost exclusively attached to *na*-prs.[6] verbs. A simpler solution was suggested already by Krause (1952: 44) and followed by many scholars, e.g., Malzahn (2010: 491), Pinault (2012b: 192). The idea is that *-ca* from the suffix ^B-*ñca* was extended onto a base related to the preterite participle through contamination.⁴⁵⁰ While the forms are ambiguous with regard to their stem formation—that is, whether they are formed to the subjunctive stem plus *-uca* or to the preterite participle plus *-ca*—it is more likely that the *ca*-formation started out in the preterite participle, e.g., **tarkau-ca*, since as a participle this is closer semantically and syntactically to the ^B-*ñca*-formation. It could later be resegmented as the *a*-subj.[5] stem with a suffix, **tarka-uca*, and gain productivity in exactly that stem class.

Since there was no productive *nt*-formation for athematic stems left in Pre-Tocharian B and since the extension of the suffix **-eñca* in its entirety would violate the rule that athematic stems do not palatalise in the verbal nouns, agentive nominal forms had to be formed by other means. It is no coincidence that the *ca*-formation became prevalent in the *na*-prs.[6], since that class comprises primarily of transitive verbs which would be more likely to need an agent noun. This hypothesis explains why the *ca*-forms behave synchronically exactly like *ñca*-forms, but it is still totally obscure why the *na*-prs.[6] and other stems would need to create the *ca*-forms in the first place. In light of ^B-*śawāñca* and ^B-*māñca*, one would imagine that that *†tārknāñca* would be a more straightforward solution to the gap in the system.

There is at least one potential explanation, although it is somewhat speculative. It is conceivable that the core of the formation was preterite participles more prone to present reference, e.g., *kārsau* to ^B-*kārs-* ‘know’. These would have been semantically quite close to the *ñca*-formation; cf. *aiśeñca* ‘knower, knowing’ to

⁴⁵⁰ Couvreur (1947: 24, 28) suggests a contamination the other way, namely that *-ca* was extracted from *uca*-forms and added to the *nt*-participle. However, his reconstruction of this suffix into Proto-Indo-European is not well-founded, and the theory cannot be upheld.

^B*ayk-* ‘know’. Since the athematic **nt*-forms had largely been expunged, pre-TB **karsaw* would have been the next best thing and could have contracted the **-ca* of **-ñca* to underline the necessary agentivity, which the preterite participle was lacking (being non-oriented). From there, the form could be reanalysed as *sbj. *karsa-* plus the suffix **-uca* and become productive in other verbs: **wərpa-uca* ‘recipient’. Admittedly, this hypothesis does not explain why the nasal was not transferred along with the rest of the *ñca*-suffix. A phonological solution would be preferable, but the dual form *trauñc* (PKAS9A b7, b9) of the word *trau*, a type of measurement unit (Ching 2010: 382), shows that the syllable structure *auñc* is permissible. Perhaps it was reduced in polysyllabic words, but this explanation is of course entirely *ad hoc*. In addition, since there is only one verb in the group that really lends itself well semantically to this explanation, namely ^B*kars-* ‘know’, I concede that this hypothesis is highly speculative.

The origin of the *uki*-formation is quite obscure. Mechanically, it should reflect something like **-’əwk-əy < *-euk-oj*, which looks like a dead end and raises the possibility of a borrowing origin. It is not obvious why this suffix was productive in the *s*-prs.[8] and the *sk*-prs.[9], where *ñca*-forms are also synchronically abundant. Any connection between the final vowel of ^B*-uki* with verbal governing members like *po-aiši* ‘all-knower’ must be a red herring, since the *-i* of *-uki* does not palatalise. In any case, that connection would not help us much, since it does not help explain the *-uk-* or indeed any other part of the formation.

5.4.9. The development of the *m*-participle

Finally, we may reflect on the development of the *m*-participle. Considering the evidence presented in 5.3, we may conclude that the *m*-participle, ^B*-mane*, ^A*-māṃ*, was inherited into Tocharian as a participle associated with the middle voice, and thus the formal and functional cognate of Gk. *-μένος*, Skt. *-ānā-*, *-māna-*, etc. However, in attested Tocharian, the participle functions primarily as an uninflected converb without any affiliation to the Tocharian middle of the finite verb; see 5.2.8. The transformation of the *m*-participle can—at least in part—be explained in view of the developments of the *nt*-participle (5.4.1–5.4.7).

The finite middle in Tocharian is to a large extent lexically or morphologically dependent. Schmidt’s survey of the middle (1974: 14) shows that more than 60 percent of middle forms in both languages belong either to *media tantum* verbs or to stems that take exclusively middle inflection. Although the survey obviously needs to be updated with new forms and current insights, we can still use it as an indicator

of the general tendency.⁴⁵¹ When less than 40 percent of the Tocharian verbs needed contrastive participles to accompany active and middle finite forms, it is perhaps not surprising that the affiliation with active and middle voice faded in the remaining verbs. Nevertheless, it seems unlikely that this would be the only motivating factor; the morphological association between the *nt*-participle and active voice on the one hand, and the *m*-participle and middle voice on the other, could have been continued in the *activa* and *media tantum* respectively, as in other ancient Indo-European languages; see Grestenberger (2017).

We can find the motivation for the disaffiliation of the participles with diathesis in the proposed development of the *nt*-participle. As suggested above, the inflection of the *nt*-paradigm broke apart as the feminine became increasingly lexicalised (see 5.4.2). With the absence of gendered inflection, the productive *nt*-formation became an agent noun morphologically. Although it retained some of its syntactical participial functions (see 5.2.1, 5.2.7), it could not be subordinated to a main clause. In this situation, it is understandable that the *m*-participle took over this function. In turn, this syntactic change may have initiated the loss of inflection in the *m*-participle since it would predominantly have taken the nominative case when used as a converb. It may also have been affected by contact with languages with uninflected converbs, for instance, a Turkic language (Peyrot 2017: 339).

Since the two former participles were at that point so functionally distinct, they could no longer be considered contrastive and the link between the participles and diathesis could be definitively broken. From that point forward, productive *m*- and *nt*-forms could be made to verbs, regardless of the voice of their finite forms. Only in archaic verbs with a clear semantic distinction between the active and middle (5.3.1) and in fixed expressions such as ^B*keś tas-’ə/e-act* (5.3.3) is the original voice affiliation of the *m*- and *nt*-participles still discernible.

5.5. Chapter conclusions

In this chapter, the fate of the Indo-European **nt*-participle in Tocharian was under investigation. The aim was two-fold: to test whether the Tocharian reflexes of the **nt*- and **mh₁nó*-participles show any affinity with active and middle voice respectively, and to investigate the developmental history of the **nt*-participle in Tocharian. The

⁴⁵¹ The survey includes c. 11.000 word forms, of which Tocharian A attests 1260 middle forms and TB 2222 (Schmidt 1974: 7).

first is highly relevant to the question of the cladistic position of Tocharian, due to the fact that the Proto-Indo-European **nt*-participle is found in Anatolian with a totally different usage than in the CIE languages. The second is important for our understanding of the development of the Tocharian participles, especially because there are many discrepancies between Tocharian A and Tocharian B in the relevant formations.

In section 5.2, the synchronic features of the *NC*-formations and the *m*-participle were collected and analysed. For many of the *NC*-formations, it is debatable what word class they belong to; the survey showed a mixed picture. The syntactic features of ^B-*ñca*, ^B-*ca*, ^B-*uki* and ^A-*nt* point towards true participial usage, in accordance with the findings of Fellner (2014b), but their morphological and semantic features are more consistent with an analysis as agent nouns. The three Tocharian B suffixes are functionally indistinguishable, and ^B-*ñca* and ^B-*ca* stand in almost complementary distribution with one another. The former is found in almost exclusively to thematic presents, while the latter is made to verbs with preterite participles in *-au*, *-oʃ*, subjunctives of class [5], and mostly athematic presents. In Tocharian A, the suffix *-nt*, which is functionally equivalent of these three Tocharian B suffixes, is found to all stem classes. The two suffixes ^B-*nta* and ^B-*ntsa* show a different picture; their syntactic behaviour point to a true agent noun function. The ^B-*ntsa*-suffix forms occupational titles, e.g., ^B*wapāntsa* ‘weaver’; its Tocharian A cognate is indirectly attested in ^A*wāpāntsune* ‘weaving’.

After this synchronic survey, the cladistic question was addressed in section 5.3. I collected all verbs that have a semantic difference between active and middle in the present and attest an *nt*-formation, an *m*-participle or both. The corpus was rather small, but a coherent picture emerged. In the first group of verbs (5.3.1), the finite forms show inchoative-causative alternation expressed only through voice. These types of verbs have been treated extensively in some of the previous chapters. The attested forms showed, with only one exception, an affinity between the ^B-*ñca*-, ^A-*nt*-formation and transitive meaning (= active voice) on one hand, and ^B-*mane*-, ^A-*māṃ*-forms with inchoative meaning (= middle voice).

The second group of verbs shows an alternation between active use in the finite active and passive use in the finite middle (5.3.2). Here, no association between the *m*-participle and passive use was found; in fact, active use was more prevalent with these forms. There were no instances of passive use with the *NC*-forms, but this would also be unexpected in an agent noun formation.

In 5.3.3, the verbs treated show various types of semantic opposition between active and middle. Here we saw an affiliation between the voice of finite phrasal verbs

and the *NC*- and *m*-formations respectively. This indicates that at the time the phrasal verbs were coined, the two formations were affiliated with voice. Thus, despite their use and appearance in Tocharian, we may conclude that the **nt*-participle was aligned with active voice, while the **mh₁nó*-participle was aligned with middle voice in the ancestor language of the Tocharian branch. These participles thus cannot provide evidence for an early split of Tocharian.

Finally, in section 5.4, the prehistory of the various *NC*-formations were treated. I have presented the hypothesis that ^B-*ñca*, ^B-*nta* and ^B-*ntsa* all descend from the Indo-European **nt*-participle. The occupational suffix ^B-*ntsa* developed from the feminine of the paradigm from a core of typically feminine occupations, leaving behind relics such as ^B*lāntsa* ‘queen’ and ^B*prentsa* ‘pregnant’ as clues. In pre-Tocharian B, the gradual referral of **nt*-forms to the agentival declension in *-a*, *-ai* caused the early lexicalisation of the *nta*-suffix. This, in turn, caused the suffix allomorph *-ñc-* to spread in the productive participial paradigm, which led to the *ñca*-formation as it is attested. Later, the suffix ^B-*ca* was extracted from the productive formation to form (quasi)-agent nouns to verbs which had no *ñca*-forms, i.e. athematic stems. The hypothesis relies to a large extent on innovation in Tocharian B, which is consistent with the relatively smaller set of suffixes in Tocharian A. We can understand the development of the primarily converbial *m*-participle through the lens of the *nt*-participle, since the latter lost this syntactic function on its way toward agent noun. That the *m*- and *nt*-participle are not affiliated with middle and active voice, respectively, can also be explained as a function of the new functional discrepancy between the two (see 5.4.9). Through a combination of internal reconstruction and projected reconstruction, we have arrived at a scenario which requires a minimum of assumptions, while accounting for the attested, a times conflicting, facts of the Tocharian *NC*-formations.

Chapter 6 The thematic optative

6.1. The thematic optative in Tocharian

The continuation of the Indo-European optative mood as an inflectional category in Tocharian is beyond doubt. Formally and functionally, the Tocharian optative formed with the suffix PT $*_{-}^{(r)}\partial y-$ > $^B_{-}^{(r)}\partial y-$, $^A_{-}^{(r)}\ddot{a}y-$,⁴⁵² which seems to be derived from the zero-grade variant of the Indo-European athematic optative $*_{-}ih_1$.⁴⁵³ However, the thematic optative suffix, $*_{-}oih_1$, which is found side by side with the athematic one in at least Indo-Iranian, Greek, Germanic, and Balto-Slavic, is not found in thematic verbal stems in Tocharian. *A priori*, we would expect a formant $\dagger^B_{-}ey-$, $^A_{-}ay-$ from $*_{-}oih_1$ in these stems, but instead, we find $^B_{-}'\partial y-$, $^A_{-}'\ddot{a}y-$, e.g.,

TB subj.[2]. act.3sg. *triśäm*, 3pl. *trikem* ‘will fail’
 opt.[2]. act.3sg. *trīši*, 3pl. *triśyem* ‘may fail’, not $\dagger trikey$, $\dagger trikeyem$

TA subj.[2]. act.3sg. *klyoşäş*, 3pl. *klyoseñc* ‘will hear’
 opt.[2]. act.3pl. *klyoşiñc* ‘may hear’, not $\dagger klyosayeñc$

This state of affairs has led to the hypothesis that Tocharian split off from the Indo-

⁴⁵² Phonological notation for $^B_{-}i-$, $^A_{-}i-$; see the section “Symbols” (p. xix).

⁴⁵³ If we accept the connection between PIE $*\mu iH-ró-$ ‘young’ and $*\mu eih_1-$ ‘strive toward’ (LIV 2001: 668–9), this word also shows the sound change $*ih_1 > *i > *ay$ in $^A wir$ ‘young’; see 1.3.1. I will accept this sound change as a base assumption in the following sections, but the reflex of $*ih_1$ before a consonant will be discussed further in 6.6.1. For the difficulties concerning word-final $*ih_1$, see Ringe (1996: 25–9, 77).

European proto-language before the thematic optative morpheme had developed (Ringe 1998: 35–6; Jasanoff 2009; Weiss 2022: 109). If one accepts the hypothesis that the absence of inherited simple thematic presents is also an archaism of Tocharian (see Chapter 3), this hypothesis is quite attractive. If there were next to no thematic presents in the proto-language ancestral to Tocharian, there would have been no use for a thematic optative, and it would be understandable why Tocharian lacked it. As Ringe puts it:

“evidently the development of a thematic optative in PIE proper lagged somewhat behind the development of a class of simple thematic presents, so that even within NIE the core languages and IC have innovated differently.” (Ringe 1998: 36)⁴⁵⁴

A similar scenario is brought forth by Jasanoff (2009: 62–3), who proposes that the optative suffix PT **-’ay-* in the thematic stems in Tocharian is an archaism, reflecting a stage at which Proto-Indo-European thematic presents would form athematic optatives: **b^her-ih₁-* > PT **pər-’ay-*.

There are other factors speaking in favour of this hypothesis. Ringe, Warnow & Taylor (2002: 68–9) argue that the thematic optative in **-oih₁-* looks innovative since it is easily analysable as the *o*-timbre of the thematic vowel with the addition of the zero-grade athematic suffix. Another salient fact is that Italic and Celtic show no evidence of the thematic optative either. This fits the phylogeny of Ringe, Warnow and Taylor (2002) well, since the Italo-Celtic subnode is placed just under Tocharian in that tree. However, it is important to note that while the absence of the thematic optative could be an archaic feature of Tocharian, it cannot be used as an argument for Tocharian Second, precisely because it is also absent in Italo-Celtic (Peyrot 2022b: 96). Nonetheless, the thematic optative has the potential to be a significant isogloss, indicating early Tocharian separation.

Due to restructuring in the Tocharian verbal system, the problem is unfortunately not as clear-cut. The optative is not formed to the aspectual stem—since these no longer exist in Tocharian—but to the subjunctive stem, which derives from multiple Indo-European sources. Furthermore, optative morphology has been repurposed to form the imperfect tense when added to the present stem in Tocharian B. This means that the inherited optative morphology has moved far beyond its original habitat in some ways, but has gone extinct in others. Furthermore, the

⁴⁵⁴ In Ringe’s terminology (1998: 32), ‘PIE proper’ excludes Anatolian and ‘NIE’ excludes Tocharian; ‘IC’ is Italo-Celtic.

optative and imperfect in both Tocharian languages have undergone intensive regularisation, which obscures our view into the past even further.

There is another problem, concerning the formal features of the optative, namely that the Tocharian optative(-imperfect) suffix, PT $^{(*)}\partial y-$ < PIE $^{*}ih_{1}-$, is known to delete a stem-final vowel in some non-thematic stem classes.

TB	prs.[3].3sg. <i>mäsk-e-tär</i> ‘is’	ipf.[3].3sg. <i>mäsk-ī-tär</i> ‘was’
	sbj.[3].3sg. <i>nk-e-tär</i> ‘will perish’	opt.[3].3sg. <i>ns-ī-tär</i> ‘may perish’
TA	sbj.[3].3sg. <i>nk-a-tär</i> ‘will perish’	opt.[3].3sg. <i>ns-i-tär</i> ‘may perish’

This fact seems to have caused a change of opinion in Ringe (2006: 31), who states that the Tocharian situation appears to have come about through a deletion of the thematic vowel. The stem deletion is little understood, but it nevertheless makes it possible that the thematic optative is hiding somewhere in the diachronic layers of the Tocharian branch.

The goal of this chapter is to test the hypotheses about the origin of the optative to thematic stems in Tocharian by looking at the implications of each for the Tocharian system. First, I give a brief overview of the data and reconstruction of the optative in the Indo-European daughter branches excluding Tocharian (6.2). In sections 6.3 and 6.4, I describe the Tocharian optative and imperfect and discuss their reconstruction to Proto-Tocharian. In section 6.5, I will address the questions directly related to the thematic optative by discussing the optatives and Tocharian B imperfects attested to inherited thematic stems. I will apply the forward reconstruction approach to see the strengths and weaknesses of a derivation directly from the athematic suffix and to test what would have happened to the thematic optative suffix $^{*}oih_{1}-$ if it was inherited into Tocharian.

In order to get a complete picture of the possible developments of the optative in Tocharian, the discussion must include the athematic stem classes. This raises new questions, for instance, why the suffix elides the stem-final vowel of the subjunctive stem, why there is a discrepancy between $^B\text{-oy-}$ and $^A\text{-äy-}$ in *a*-final stems and why the optative-imperfect suffixes palatalise the stem-final consonant of some stems and not others. This will be addressed in 6.5.6. At the end of this chapter (6.7), I will summarise and integrate the findings of each section to reach a conclusion on the status of the thematic optative as an isogloss in Tocharian.

6.2. The Indo-European optative

The optative mood can be reconstructed for Proto-Indo-European on the basis of almost all Indo-European branches. The reconstruction of the optative mood for Proto-Indo-European is relatively straightforward, but there are some areas of difficulties. In this section, I will briefly present the formal features of the mood and touch on some problematic points of suffix that will be relevant for the later discussion in 6.5 and 6.5.6.

The Indo-European optative was formed with a suffix added to the aspectual stem of the present or the aorist. Both the athematic suffix **-ieh₁-*/**-ih₁-* and thematic suffix **-oih₁-* are found in Indic, Iranian, Greek, Phrygian, Germanic, Baltic, and Slavic; see Table 6.1. The athematic optative is continued in the subjunctive of a small group of verbs in Italic, but there is no reflex of the thematic suffix **-oih₁-*.⁴⁵⁵ Instead, the regular subjunctive to thematic stems is formed with a suffix **-ā-* of debated origin in both Italic and Celtic: OIr. *beraid*, Lat. *ferat* < **b^her-ā-* (Watkins 1962: 133–4; Bammesberger 1982; Weiss 2020: 445). Some traces of the optative might be preserved in Armenian (Lamberterie 2020: 69) and Messapic (Weiss 2022: 109). It is not present in Anatolian and Albanian.

The ablaut of the athematic suffix **-ieh₁-*/**-ih₁-* can be reconstructed on the basis of, e.g., Ved. *-yá/y-* /*-ī*/ < PIIr. **-iā/-*, cf. Av. *-iiā-*, OP *-iyā-*, and Gk. *-η/-* (Macdonell 1910: 317; Rix 1992: 231–3; Hoffmann & Forssman 1996: 177; Skjærvø 2007: 866, 868, 874; Gotō 2017: 361–2; Willi 2018: 10–2).⁴⁵⁶ It was noted by Jasanoff (2017: 232) that the athematic optative shows the ablaut **e/∅*, **-ieh₁-*/**-ih₁-*, which is rather uncommon for an Indo-European verbal suffix. He, therefore, argues that it is unlikely to have been a post-Anatolian innovation and must have been lost in the Anatolian branch. The aberrant apophony is also highlighted by Pinault (2015a: 152), who does point out that the present suffixes **-néu/nu-*, **-néh₂/nh₂-* extracted from the nasal present stems in root-final **u* and **h₂* also show **e/∅* ablaut. He convincingly argues against a similar origin story (i.e. abstraction from **h₁-*final roots) for the optative suffix, since

⁴⁵⁵ Eichner (1988–1990: 213–4) suggests that the thematic optative is continued in Old Latin *OPETOIT* (for **oppetoit*) from the Duenos Inscription, but that has not gained wide acceptance; see Meiser (2010: 201) and Vine (2017: 785) with references and Tichy (2002: 197) for a competing analysis.

⁴⁵⁶ The strong formant **-ieh₁-* may also be found in Latin—which otherwise only shows evidence of the weak suffix—in the subjunctive of 1st conjugation; cf. Osc. Sbj.3sg. *deivaid* ‘let him swear’, Lat. (contracted) sbj.3sg. *amet*, 3pl. *ament* ‘may love’ (Meiser 2010: 200–1; Weiss 2020: 444–5).

its distribution and function is quite different from those present suffixes. However, it is important to keep in mind that we find ablaut of the type $*Cé(C) \sim *C(C)$ in almost all parts of the verb, including the root and the infix $*-né/n-$, and that it is completely normal in the wider perspective of Indo-European morphology. It is therefore not clear that ablaut of the athematic optative suffix $*-ǵeh_1-/*-ih_1-$ necessarily reflects an archaism. It may have been lost in Anatolian, or it may not have existed at the point when the Anatolian branch separated from the Indo-European family tree.

Table 6.1: Examples of reconstructible Indo-European optatives

	PIE	Ved.	OAv.	Gk.	OLat.	OHG
$*h_1es-$ ‘be’						
1sg.	$*h_1sǵéh_1m$	<i>syám</i>	<i>ǵiiām</i>	εἶην	<i>siem</i>	<i>sī</i>
2sg.	$*h_1sǵéh_1s$	<i>syás</i>	<i>ǵiiā</i>	εἶης	<i>siēs</i>	<i>sīs, sīst</i>
3sg.	$*h_1sǵéh_1t$	<i>syát</i>	<i>ǵiiāt</i>	εἶη	<i>siēt</i>	<i>sī</i>
1pl.	$*h_1sih_1me$	<i>syáma</i>	<i>ǵiiāma</i>	εἶμεν	<i>sīmus</i>	<i>sīm, (sīn)</i>
2pl.	$*h_1sih_1te$	<i>syáta(na)</i>	<i>ǵiiātā</i>	εἶτε	<i>sītis</i>	<i>sīt</i>
3pl.	$*h_1sih_1ent$	<i>syúr</i>	—	εἶεν	<i>sient</i>	<i>sīn</i>
			YAv.		Got.	OCS
$*b^her-$ ‘carry’						
1sg.	$*b^héroi h_1m$	<i>bháreyam</i>	—	φέρωμι	<i>baírau</i>	
2sg.	$*b^héroi h_1s$	<i>bháres</i>	<i>baroiš</i>	φέρεις	<i>baíráis</i>	<i>beri</i>
3sg.	$*b^héroi h_1t$	<i>bháret</i>	<i>baroiť</i>	φέρει	<i>baíráit</i>	<i>beri</i>
1pl.	$*b^héroi h_1me$	<i>bhárema</i>	—	φέρωμεν	<i>baíráima</i>	<i>berěmь</i>
2pl.	$*b^héroi h_1te$	<i>bháreta</i>	—	φέροιτε	<i>baíráiþ</i>	<i>berěte</i>
3pl.	$*b^héroi h_1ent$	<i>bháreyur</i>	<i>baraiian</i>	φέρειεν	<i>baíráina</i>	

With regard to the thematic suffix, the CIE languages generally reflect the suffix $*-oih_1-$, which looks like the $*o$ -grade of the thematic suffix plus the zero-grade of the athematic optative suffix: $*-o-ih_1-$. In Vedic, we find a monophthongised diphthong $-e-y-$ before both vowel-initial endings. The additional glide $-y-$ can probably be explained as a reflex of the laryngeal of the suffix: act.3pl. $*-oih_1-ent > *-oiǵent > PIIr. -aiǵan \rightarrow$ Ved. $-eyur$ (Lubotsky 1995). In Greek, an extra glide is also

found in the thematic optative: Gk. opt.3pl. -οιεν.⁴⁵⁷ The apparent agreement with Indic has led some scholars to suggest that the thematic optative suffix was disyllabic at the node from which both Greek and Indo-Iranian sprang (Jasanoff 2009: 52–60; Pinault 2015a: 181–3):

act.3pl. **-o.i_h-ent* > **-o.ĭent* > **-oi.ĭent* > PGk. **-oĭĭen* > Gk. -οιεν

However, if the glide in Vedic is expected, we may rather interpret the Greek suffix as an indication that the optative was prone to morphological renewal in order to keep it well-marked. Within Greek, the consequence of losing the glide would be vowel merger, which would obscure the suffix, while the introduction of **-e-* from, e.g., the 2sg. and 3sg., into forms with vowel-initial endings.

The status of the optative to the s-aorist is not entirely clear. On one hand, a sigmatic aorist optative is attested in Greek, cf. Cretan Gk. -σῑ-, elsewhere alphathematic -σαῑ- (Harðarson 1993b: 114–5),⁴⁵⁸ in Phrygian in some modal forms in -se/i- (Šorgo fthc.: 371–3) and in Albanian (Schumacher & Matzinger 2013: 177–82), as well as a few forms in Avestan, e.g., 3sg. *frazahī̯t* ‘may leave’. However, the s-aorist active in Vedic does not form the expected sigmatic optative **-si_h-*; rather, this function is expressed with either a root aorist in -yá- with a unique ending -s in the 3sg., e.g., aor.opt.act.3sg. *bhūyās*, 1pl. *bhūyāma* to *bhū-* ‘be’, or the so-called precative, formed with the suffix -yás- throughout the paradigm (Macdonell 1910: 317; Kümmel 2018: 245–6). According to the principles of directionality, the Vedic situation certainly looks more archaic, as the creation of **-si_h-* follows the regular channels of word formation with the aspectual stem marker **-s-* followed by the modal suffix **-i_h-*, and thus could have been created independently in the branches to fill the gap in the system. The opposite scenario, that Vedic would have lost a regular-looking s-aorist optative, is much less trivial; see Jasanoff 2003: 184–5; Søbørg 2020: 22–6, 246. This fits the data from Tocharian, in which the optative to the root sbj.[1] is asigmatic (like the rest of the sbj.[1] inflection). For further discussion and references on the Indo-European optative, see Pinault (2015a).

⁴⁵⁷ Even in the archaic Arcadian form ἐξελαύνοια.

⁴⁵⁸ For discussion and references of the so-called Aeolic optative in Greek, see Kortlandt (1992a), Willi (2018: 11 fn. 10), Søbørg (2020: 243–7).

6.3. The Tocharian optative

The Tocharian optative is only formed to one stem of the verb, namely the subjunctive. In this way, it differs from many of the other old Indo-European languages, e.g., Greek, Vedic and Latin, which form an optative to each of the aspectual stems. We have to keep this in mind when searching for possible archaisms within the Tocharian optative; while some attested forms could have been inherited directly from Proto-Indo-European, many forms must be the result of later restructuring. This is evident in the formation of the optative—as well as the Tocharian B imperfect (see 6.4)—which is formally extremely regular across all stem classes. In this section, I will give an overview of the formal features of the Tocharian optative in order to show this regularity.⁴⁵⁹

As mentioned above, the optative is formed to the subjunctive stem in both languages, taking the weak grade of the root in ablauting verbs and present endings, e.g.:

- TB root sbj.[1].3sg.-2sg.obj. *teñkāñ-c* ‘hinders for you’, inf. *tañktsi* ‘to hinder’
 opt.3sg. *tañci* ‘may hinder’
- TA sbj.[5].act.3sg. *kalkaṣ* ‘will go’, sbj.act.3pl. *kälkeñc* ‘will go’
 opt.act.3sg. *kälkiṣ* ‘may go’

The suffixes used to form the optative differ somewhat between Tocharian A and Tocharian B; see Table 6.2. The Tocharian B optative is formed with two different suffixes, a palatalising suffix *-ʔy-*, and a non-palatalising suffix *-oy-*. Both suffixes delete any preceding stem-final vowel and are distributed consistently according to subjunctive class: root stems and thematic stems take the former, while *a*-final stems take the latter. The suffix ^B*-ʔy-* surfaces as ^B*-i-* in front of consonantal endings and the nil-ending 3sg. ^B*-Ø*, and as ^B*-iy-* in front of endings of the 1pl. *-em* and 3pl. *-eṃ*, which always show the thematic allomorphs (Pinault 2008: 607; Malzahn 2010: 346–50).⁴⁶⁰

There are two variants of the optative suffix *-äy-* in Tocharian A: one that causes palatalisation and one that does not, broadly distributed according to subjunctive stem class. The *ñ*-sbj.[7] and the *äyñ*-sbj.[12] are ambiguous with regard to the suffix

⁴⁵⁹ For a description of the function of the optative, examples, and comparison to the subjunctive and imperative moods, see Peyrot (2013a: 25–8, 237–42, 269–71, 306–7, 328–32).

⁴⁶⁰ Except one instance, opt.mid.3pl. ^B*älyinträ* (THT255 b7, arch.) ‘would they ward off, which shows the original athematic ending (Peyrot 2013a: 584).

since the nasals of the stem suffix are always palatalised. Still, since both classes inflect thematically, it is reasonable to assume that palatalising ^A-’äy- is underlying. In vowel-final stems, such as *e*-sbj.[3] (suffix ^B-*e*-, ^A-*a*-) and *a*-sbj.[5] (suffix ^B-*a*-, ^A-*ā*-), the suffix replaces the vowel (Sieg, Siegling & Schulze 1931: 345; Krause & Thomas 1960: 222; Malzahn 2010: 346).

For the purposes of this thesis, the presence and absence of palatalisation are important in order to understand how the PIE suffix ^{*}-*i*h₂- developed in Tocharian; if it indeed underlies the optative of the thematic stem classes in Tocharian, we must understand why it came palatalise here and not in certain other stem classes that presumably continued the same suffix. In this regard, both the thematic and athematic stem classes are relevant. In the following subsections, I will present the evidence of the suffix and its palatalising effects in the various stem classes, first the thematic classes (6.3.1) and then the athematic ones (6.3.2). In 6.3.2, I will limit the overview to verbs without stem-final ^B-*a*-, ^A-*ā*-, i.e. the root sbj.[1] and *e*-sbj.[3] (suffix ^B-*e*-, ^A-*a*-), since the optative suffix to stems in final ^B-*a*-, ^A-*ā*- never causes palatalisation; additionally, the optative is formed with a special suffix in Tocharian B in these stems: -*oy*-. These optatives are by no means irrelevant to the development of the optative in Tocharian, but they do not directly inform the discussion on the potential archaism of the thematic optative. They will therefore be treated separately in 6.5.6.

Table 6.2: Distribution of optative suffix allomorphs in Tocharian

Tocharian B	optative examples
-’äy-	
sbj.[1]	act.3sg. <i>taśi</i> to root sbj. <i>ték-/tāk</i> ‘touch’
sbj.[3]	mid.3sg. <i>nśitār</i> to <i>e</i> -sbj. <i>nké</i> - ‘perish’
sbj.[2]	act.3sg. <i>klyauši</i> to ’ə/ <i>e</i> -sbj. <i>klyauṣa/se</i> - ‘hear’
sbj.[9]	act.3sg. <i>wikāṣṣi</i> to <i>sk</i> -sbj. <i>wikāṣṣa/ske</i> - ‘remove’
sbj.[10]	mid.3sg. <i>(tä)nmaṣṣitār^a</i> to <i>nask</i> -sbj. <i>tānmaṣṣa/ske</i> - ‘generate’
-oy-	
sbj.[5]	act.3sg. <i>stamoy</i> to <i>a</i> -sbj. <i>stāma-/stāma</i> - ‘stand’
sbj.[6]	mid.3sg. <i>pāknoytār</i> to <i>na</i> -sbj. <i>pākná</i> - ‘intend’

Tocharian A	optative examples
- ^B äy-	
sbj.[1]	mid.3pl. <i>tsāšintär</i> to root sbj. <i>tsāk-</i> ‘glow’
sbj.[2]	act.1sg. <i>läñcim</i> to ^A ə/e-sbj. <i>länc’ə/te-</i> ‘go out, emerge’
sbj.[3]	mid.3sg. <i>nšitär</i> to <i>a</i> -sbj. <i>nka-</i> ‘perish’
sbj.[9]	act.3sg. <i>lmāšiš</i> to <i>s</i> -sbj. <i>lmāšä/sa-</i> ‘set’
- ^A äy-	
sbj.[5]	act.3pl. <i>štmīñc</i> to <i>ā</i> -sbj. <i>štām-</i> ‘stand’
ambiguous	
sbj.[7]	mid.3sg. <i>riñitär</i> to <i>ñ</i> -sbj. <i>riñä/a-</i> ‘give up’
sbj.[12]	act.3sg. <i>ākšīñiš</i> to <i>äyñ</i> -sbj. <i>ākšīññä/a-</i> ‘announce’
^α Attested in PK NS 13 and 516 b5 for expected <i>*tanmäššitär</i> (Couvreur 1967: 154–5)	

6.3.1. Optatives to thematic subjunctives

The evidence for the optative to the thematic subjunctive classes is extremely regular, both between Tocharian B and Tocharian A, and within each language. In both languages, the thematic classes form their optative stem with the palatalising suffix ^B-^Bäy-, ^A-^Aäy-; see Table 6.2.

This situation can with certainty be reconstructed to Proto-Tocharian. There are two ways to analyse the stem synchronically. Either the optative suffix is added on top of the palatalising ^A-^Aə-formant of the thematic suffix, in which case we cannot tell whether the suffix actually causes palatalisation, or, the optative suffix eats the thematic vowel completely and is added onto the bare root, causing palatalisation. From a diachronic perspective, the latter analysis fits well with the hypothesis that there was no **-oih₁-* in Proto-Indo-European at the time Tocharian left, and that the athematic optative suffix PT **-^Bäy-* < PIE **-ih₁-* was added directly to the root. However, the other analysis, that the suffix is added to the theme vowel **-^Aə-*, opens the door for other diachronic interpretations. These will be discussed below in section 6.5.5.

There is one thematic subjunctive stem class that is interesting because it was traditionally connected with the Indo-European optative and because it causes

problems for the synchronic analysis of some optatives, namely *sbj.[4]* with the palatalising suffix **-ʼəyə/e-*. It is attested in only seven verbs, mostly in Tocharian B, with only one attested non-finite form in Tocharian A: *abst.perl. āklyuneyā* (Malzahn 2010: 332). Lane (1959: 166) suggested that the origin of this subjunctive class could be found in the Proto-Indo-European optative; see also Van Windekens (1982: 224). This proposal cannot be upheld because of the differences in inflection, the *ʼəyə/e-sbj.[4]* being thematic, the optative athematic. Instead the origin of the stem class is to be found in primary and denominative **ǵe/o-*presents; see Winter (1961: 95–6; 1990b: 376–7), Hackstein (1995: 219–21), Pinault (2008: 588–9) and Peyrot (2013a: 582–4) with further references.

Although the etymological link with the Indo-European optative must be abandoned, the *ʼəyə/e-sbj.[4]* is still interesting from the point of view of the optative since the shape of the subjunctive suffix makes it difficult to distinguish between subjunctive and optative forms in this class. Malzahn (2010: 333) lists only three certain cases of optatives to *ʼəyə/e*-subjunctives of class [4]. The first is ^B*aklyiyenträ* to the stem ^B*akl-ʼəyə/e-* ‘will learn’. The analysis as optative is supported by the fact that the form is surrounded on all sides by optatives. Peyrot (2013a: 706), however, argues convincingly that a subjunctive would fit better in the syntactic context of the passage:

221 TB THT605 b3–b4

tarya piṭakānta piṅkemanē tāko^{b4}ym · se ce amok aklyiyenträ^{sbj.mid,3pl} po paññākte tākoyem :

‘May I be writing the three *piṭakas*. Whoever **will learn** this art, may they all become buddhas.’ⁿ⁴⁶¹

The two other forms listed by Malzahn (2010: 333) belong to ^B*kālp-* ‘steal’: 3sg. *(ka)lypi* and 1pl. *(kū)lypiyem* (THT404 a8 and b2). Krause (1952: 236) lists a third form under the optative, the 3pl. *kālypī(y)e(m)* (PKAS14.1.1 b5). There is a degree of uncertainty with all three forms. The context surrounding the 3pl. form is not clear enough for us to determine whether it is a subjunctive or an optative. In THT404, although the first syllable of both forms is lacking, we can be reasonably certain that the verb, ^B*kālp-* ‘steal’, is correctly identified from the context, in which a thief is brought before the king; see Sieg & Siegling (1953: 269 fn. 5), Thomas (1957: 118–9). However, the form is found right before the lacuna, so we cannot be sure of the exact form.

⁴⁶¹ Trsl. by Peyrot (2013a: 706).

222 TB THT404 a8

(*tumem lāntä*)^{a8} *śco klā(nte) lykaṃ ce_u šñ(a)ssoñcä : se wesämñ ñ(a)kt(a)kālypi*_{opt.act.3sg.} ///

“Thereupon the owners (of the stolen things)⁴⁶² led the thief to the king. **May he,**
O lord, **steal** from us...”⁴⁶³

Given the context, the optative interpretation makes little sense; a prt.3sg. (*kälypi(ya)*) would fit much better:⁴⁶⁴

223 TB THT404 a8

: *se wesämñ ñ(a)kt(a)kālypi(ya)*_{prt.act.3sg.} ///

“He, O lord, **stole** from us...”

Two lines later, after the king rewards the thief, a 1pl. form is found in a negated question:

224 TB THT404 b2

*ka mā*⁴⁶⁵ *wes ra (kālypiyem)*_{act.3pl.}

“Why **shouldn’t** we also **steal**?”

This could be an optative, which is used in rhetorical questions, but it is also possible that we are dealing with a subjunctive, which can be used in questions “that are not rhetorical in the strict sense, but refer to future situations with an uncertain development and outcome” (Peyrot 2013a: 301–3). We are thus left with no certain examples of optatives to the *ʾayə/e*-subj.[4].

To summarise the synchronic facts about the optatives formed to thematic subjunctives, all relevant forms in both languages are formed in the same way: with the suffix PT **-əy-* which causes palatalisation of the root-final consonant or the consonantal elements of the thematic suffix, either because the suffix itself is

⁴⁶² Adams (2013: 728) translates *šñ(a)ssoñcä*, the m.nom.pl. of an adjective *šñassu**, as “the people seeking possessions”. Considering the context and the derivational basis of the adjective, the adjective *šañ* ‘own’, the translation ‘owners’ may be preferable. The adjective is also found in Tocharian A, *šñassu* (THT1531 b5), probably borrowed from Tocharian B, but the context is too fragmentary to determine its meaning (Carling & Pinault 2023: 498).

⁴⁶³ Restoration by Sieg & Siegling (1953: 269).

⁴⁶⁴ Compare attested prt.act.1sg. *kälypiyawa* (THT1250 b1, Ogihara 2012: 188), 3sg. *kälwiya* (PK iDA M 507.37 and .36 a50).

⁴⁶⁵ For *kā mā* (Sieg & Siegling 1953: 269 fn. 11).

palatalising or because it is added onto the $^{*}\text{-}\text{'a}$ -formant of the thematic suffix. The difficult forms of *sbj*.[4] turns out to have no bearing on the thematic optative.

6.3.2. Athematic optatives to the root *sbj*.[1] and the *e-sbj*.[3]

As argued previously in this thesis, the subjunctives of classes [1] and [3] both derive from inherited athematic formations; see 2.4 and 4.2.2. If we are to find evidence of archaic optatives in the Tocharian data, this is a good place to start. In Tocharian B, the optative to the root *sbj*.[1] is formed with the palatalising suffix $^{\text{B}}\text{-}\text{'ay-}$ with no exceptions, e.g.:⁴⁶⁶

TB opt.act.3sg. *taśi* ‘may (s)he touch’ to root *sbj*.[1] of *tək-* ‘touch’

opt.mid.3sg. *riñtär* ‘may (s)he leave’ to root *sbj*.[1] of *rəyn-* ‘leave, give up’

Unfortunately, there are no diagnostic examples in regard to suffix initial palatalisation of *opt*.[1] in Tocharian A. The only certain verb with a root *sbj*.[1] that attests optatives is $^{\text{A}}\text{e-}$ ‘give’, e.g., 3sg. *āyis* ‘may give’, which cannot show root-final palatalisation. There is one form that suggest that the suffix does palatalise in this stem class, namely 3pl. $^{\text{A}}\text{tsāsintär}$ (A 158 a2) ‘may glow’ to $^{\text{A}}\text{tsāk-}$ ‘glow’, but since there are no other forms attested to the subjunctive stem, we might be dealing with an 'a/e-sbj .[2] (see 6.3.1). However, the evidence of Tocharian B is strong enough to posit a palatalising suffix $^{*}\text{-}\text{'ay-}$ back to Proto-Tocharian. This would also be the diachronically expected consequence of adding the optative suffix to a root stem without final laryngeal, be it in Proto-Indo-European or pre-Proto-Tocharian.

Tocharian A and Tocharian B generally agree on the formation of the optatives to *e-sbj*.[3]. Synchronically, the stem-final vowel of the subjunctive $^{\text{B}}\text{-e-}$, $^{\text{A}}\text{-a-}$ is deleted before the optative suffix:

		TB	TA
$^{\text{B}}\text{kən-}/^{\text{A}}\text{kün-}$ ‘occur’	opt.mid.3sg.	<i>kñtär</i>	<i>kñtär</i>
$^{\text{B}}\text{təm-}/^{\text{A}}\text{tām-}$ ‘be born’	opt.mid.1sg.	<i>cmīmar</i>	<i>cmīmār</i>

⁴⁶⁶ From a diachronic perspective, one might expect roots ending in PT $^{*}\text{-w-}$ to undergo palatalisation to -y- in *opt*.[1] in TB. However, $^{\text{B}}\text{-w-}$ does not participate in morphological palatalisation, so the attested forms, e.g., act.3sg. $^{\text{B}}\text{pluwi}$ ‘may (s)he swim’, 1sg. *ruwim* ‘may I open’, are regular (Peyrot 2013a: 77).

^B*nək-*/^A*näk-* ‘perish’ opt.mid.3sg. *näsītār* *nsītār*

Because of deletion of the stem-final vowel, root sbj.[1] and *e*-sbj.[3] merge in the optative apart from the voice of the endings. Since some of the verbs that form *e*-sbj.[3] also form active root subjunctives of class [1] (see 4.2.1), it may be tempting to take the optatives to *e*-sbj.[3] as neologisms, formed by adding middle endings to the optative stem of the root sbj.[1]: e.g., **nəsāy-*, act.3sg. **nəsāy*, mid.3sg. **nəsāy-tār*. This could be one way of explaining why optatives to *e*-sbj.[3] (suffix ^B*-e-*, ^A*-a-*) stems differ from the imperfects to *e*-prs.[3] (likewise suffix ^B*-e-*, ^A*-a-*) in their ability to palatalise (see 6.4). This scenario is unattractive, however, as no optatives are as yet attested to the oppositional root subjunctives of class [1] to these verbs.⁴⁶⁷

The only form that stands out by lacking root-final palatalisation in this group is ^A*kñitār* ‘may [the wish] be fulfilled’. Malzahn (2010: 296), following Peters (2006: 334–5 fn. 16), takes this form, along with the irregular TB optatives *kāñiyōytār* and *kñyōytār*, as evidence for an otherwise unattested stem **kəna-*. As already discussed above 4.2.2, the ^B*kāñiyōytār* and ^B*kñyōytār* should be taken as innovative and the analogical origin of *e*-sbj.[3] be rejected. However, as proposed below (6.5.6), it might be possible to attribute the lack of palatalisation in ^A*kñitār* to the original laryngeal of **ǵenh₁-* ‘be born’, meaning that the TB form *kñītār* is innovative.

To summarise, both the optative to the root sbj.[1] and the optative to *e*-sbj.[3] (suffix ^B*-e-*, ^A*-a-*) are formed directly to the root and mostly show evidence of palatalisation.

6.4. The Tocharian imperfect

In any discussion of the prehistory of the Tocharian optative, the imperfect has to be addressed as well. In Tocharian B, it is the optative that has lent its morphological marker to the imperfect, and there is a possibility that we find very archaic optative forms in the foundation of the category of both languages. In the words of Lane (1953: 278), it is “in the formation of the imperfect that the two languages go farthest asunder”. The two formations share almost no formal features and would probably be interpreted as completely unrelated formations from a diachronic perspective, was it not for two stem formations anchoring them to one another: ipf. ^B*šey-*, ^A*še-* ‘was,

⁴⁶⁷ We do find transitive optatives in both languages to ^B*təm-*, ^A*tām-* ‘generate’, but they are built to the causative subjunctive of class [9].

were', ^Byey-, ^Aye- 'went'. In this section, I discuss the diachronic theories concerning the imperfects of 'be' and 'go' (subsection 6.4.1), whether the imperfect as a category can be reconstructed to Proto-Tocharian and what formal features it may have had (subsection 6.4.2). Before starting these discussions, I will briefly outline the discrepancies in formation of the imperfect in Tocharian B and Tocharian A.

With the exception of the two irregular imperfects to 'be' and 'go' (6.4.1), the Tocharian B imperfect uses the same morphological markers as the optative, distinguished only in that it is formed to the present stem. It employs the same set of endings, based on the present-subjunctive set, with act.1sg. -*m*, 3sg. -∅. In verbs that form present-subjunctives the two formations are identical and can only be distinguished from context; see Table 6.3.

Table 6.3: Examples of TB imperfects and optatives

TB root	meaning	prs. and sbj.	ipf.act.3sg.	opt.act.3sg.
<i>cāmp-</i>	'be able'	'ə/e-prs.-sbj.[2]	<i>campi</i>	<i>campi</i>
<i>lāma-</i>	'sit'	<i>a</i> -prs.-sbj.[5]	<i>lamoy</i>	<i>lamoy</i>
<i>kārsa-</i>	'make know'	<i>sk</i> -prs.-sbj.[9]	<i>śarsäṣṣi</i>	<i>śarsäṣṣi</i>
<i>pālska-</i>	'think'	<i>n</i> -prs.[6] – <i>a</i> -sbj.[5]	<i>pālsknoy</i> ^{sic}	<i>pālskoy</i>
<i>prāk-</i>	'ask'	<i>n</i> -prs.[8] – root sbj.[1]	<i>prekṣi-ne</i>	<i>parśi-ne</i>

The suffix is distributed according to stem class like in the optative with the ^B-*oy*-formant found in *a*-final stems. The non-*a*-final stems use the suffix ^B-*ʾay-*, with one notable exception: imperfects to *e*-prs.[3] and *o*-prs.[4] do not palatalise the stem-final consonant: ipf.3sg. ^B*māskītār* to the *e*-prs.[3] of ^B*maska*- 'be', ipf.3sg. ^B*yotitār* to the *o*-prs.[4] of ^B*yata*- 'be able' (Hackstein 2004c: 89 fn. 14; Malzahn 2010: 257).⁴⁶⁸

Besides the formation of the imperfects to the verbs 'be' and 'go', ^Aše- ~ ^Bṣey- 'was, were' and ^Aye- ~ ^Byey- 'went' (6.4.1), Tocharian A forms the imperfect in a totally different way from Tocharian B. Morphologically speaking, the Tocharian A imperfect is a conglomerate of preterite formations: 1) the root imperfect with palatalising -*ā-* in the root syllable, formed to six verbs, 2) the *s*-imperfect, identical

⁴⁶⁸ There is one exception, 3sg.-obj.2sg. ^B*kulyitār-ś* (THT 231 b1) 'may recede for you'. However, *l* seems to be particularly prone to secondary palatalisation, e.g., ^B*klyiye* for ^B*kliye* 'woman' (Peyrot 2008: 109), so we probably should not put too much weight on this form.

with the s-preterite, formed only to four, maybe five, verbs,⁴⁶⁹ and finally, 3) the 'ā-imperfect formed from the present stem, by far the most common type (Lane 1953; Pinault 2008: 608–9; Malzahn 2010: 260–4).

6.4.1. The imperfects to ^Bnes-, ^Anas- 'be' and ^By-, ^Ay- 'go'

Tocharian A and Tocharian B agree on the imperfect formation of two verbs, 'be' and 'go'. In the highly suppletive paradigm for 'be', the stem ^Bšay-/šey-, ^Aše- expresses the imperfect, contrasting with an optative formed from the stem ^Btaka-, ^Atākā- 'be': ^Btākoy- and ^Atāki- (Malzahn 2010: 639). The situation is more complex in the verb ^By-, ^Ay- 'go', which forms a root present-subjunctive of class [1]. It was noted by Peyrot (2012b: 108) that although we expect optative and imperfect to be identical in present-subjunctive stems, there are no unambiguous instances of optative use in this verb.

Table 6.4: Shared imperfects in Tocharian A and TB

	TB 'was, were'	'went'	TA 'was, were'	'went'
1sg.	šaim, šeym	yaim	šem	yem
2sg.	šait, šaiyt, šaitä	yait	šet	yet
3sg.	šai, šey, še _i	yai, yey, yeyo	šeš	yesh
1pl.	šeyem	yeyem	šemäs	—
2pl.	šaicer, šeycer	yaicer, yeycer	—	—
3pl.	šem, šeyem	yeyem	šeñc	yēñc

(Malzahn 2010: 253; Peyrot 2012b: 107)

In Tocharian B, the two imperfects show two different vocalisms, -ey- and -ai-. The diachronic distribution of the forms indicate that -ai- is older in the singular and the 2pl. while -ey- is original in the 1pl. and 3pl. (Stumpf 1990: 107; Peyrot 2008: 58; 2012b: 107). This is congruent with original PT *e-vocalism, going back to a pre-PT *o or *ē.

⁴⁶⁹ Besides the traditionally listed s-imperfects to ^Aklāwā- 'fall', ^Atrāñk- 'say', and ^Atsīp- 'dance', I follow the reinterpretation of ^Akñasu, ^Akñasäšt to ^Akñā-s- 'know', and possibly also ^Aprasku to ^Apärsk- 'be afraid', by Itkin (2014: 38–41).

While the root etymology of these imperfects are uniformly accepted, PT **y-* to PIE **h₁ei-* ‘go’, **š-* to **h₁es-* ‘be’, the original stem formation is debated. Watkins (1969: 201–2) suggests that the irregular imperfects could reflect thematic optatives, i.e., **h₁i-oih₁-*, **h₁s-oih₁-*; also indirectly Lane (1953: 280). For the first form, **h₁i-oih₁-*, we would get the phonologically correct result, but then have to rely on analogy to explain the palatalisation in **šey-* from **h₁s-oih₁-*. What is far more problematic is that we would have to explain why the thematic optative would surface in these two, notoriously athematic, presents, and nowhere else in Tocharian; see also the critique by Adams (1978: 285–6).⁴⁷⁰

Since Pedersen (1941: 207), the most commonly accepted hypothesis for the origin of PT **šey-*, **yey-* is that they reflect the original athematic optative, cognates of which we find in many Indo-European languages: prs.opt.act.3sg. **h₁s-ieh₁-t* ‘may (s)he be’, 3pl. **h₁s-ih₁-ent* > Ved. *syāt*, 3pl. *syúr*,⁴⁷¹ Gk. *εἴη*, *εἴεν*, OLat. *siēt*, *sient*, OHG 3pl. *sīn* (Pedersen 1941: 206–7; Winter 1994b: 294; Adams 1999: 61; Pinault 2008: 609–10; Peyrot 2012b: 107–11). This stem does not directly yield **šey-*, **yey-*, so the diphthong must be explained.

One option would be to assume a remarking of the stem with the Tocharian optative suffix **-əy-* in pre-Proto-Tocharian before it was relegated to the imperfect, e.g., Pinault (2008: 609), Peyrot (2012b: 111). The relative chronology of a remarking is tricky, because it must have happened before the forms were relegated to the imperfect; otherwise there would be no reason for the optative suffix to take part in the renewal. We are also missing an analogical model for a diphthong **ey* in the optative.

Another option was proposed by Pedersen (1941: 207), namely conflation of the strong and the weak optative stem. In the strong stem, the full vowel **-e-* is expected, while the diphthong is found in the weak stem, albeit with a weak vowel.

PIE opt.sg. **h₁s-ieh₁-* > pre-PT **s’e-* > **še-*

PIE opt.pl. **h₁s-ih₁-* > pre-PT **s’əy-* > **šəy-*

PIE opt.sg. **h₁i-ieh₁-* > pre-PT **y’e-* > **ye-*

PIE opt.pl. **h₁i-ih₁-* > pre-PT **y’əy-* > **yəy-*

⁴⁷⁰ Adams (1978: 285–6) seems to be overstating the support for the thematic hypothesis to some extent. As far as I can tell, the athematic optative hypothesis that he also supports was very prominent in the literature from the time it was proposed by Pedersen (1941: 207).

⁴⁷¹ With replacement for the 3pl. ending.

The Proto-Indo-European consonantal structure of both roots is almost lost in the expected forms, which makes the ablaut that originated in the suffix look like ablaut in the root. Under these circumstances, it would be understandable if the ablaut in the stem was reanalysed as root ablaut and the roots were reanalysed to **šay-* and **yay-* respectively. This could lead to the introduction of **-y-* in the strong stem, after which the ablaut could be levelled in the weak stem.

pre-PT sg. <i>*še-</i>	> <i>*sey-</i>	
pre-PT pl. <i>*šay-</i>		> PT <i>*sey-</i>
pre-PT sg. <i>*ye-</i>	> <i>*yey</i>	
pre-PT pl. <i>*yay-</i>		> PT <i>*yey-</i>

Since the optative origin of these imperfects was suggested, several parallels to other Indo-European languages have been adduced, e.g., in Greek by Pedersen himself (1941: 204–5), in Avestan, Sogdian and Sanskrit by Couvreur (1938: 247–8 with reference to E. Benveniste and M. Tedesco),⁴⁷² and to Middle Welsh by Krause (1950: 28). To illustrate the phenomenon in English, Lane (1953: 280) points to the use of *would* in the habitual past: “When I was on vacation I would take a walk before breakfast every day”. Pedersen (1941: 206–7) cautiously suggests that the irrealis meaning of the construction with ^B*šai*, ^A*šeš* plus subjunctive gerundive could harken back to the original modal meaning of the optative. Peyrot (2012b: 111) suggests that **šay* was consolidated as an imperfect by the creation of a better marked optative to the suppletive stem **taka-*, which in turn pulled **yey-* into the imperfect as well. In addition, I think there might be a structural reason why **sey-* was pulled into the imperfect. The verb **h₁es-* ‘be’ would have yielded a very aberrant paradigm:

PIE prs.act. **h₁és-/h₁s-* > **es-/s-* > pre-PT **yəs-/s⁽¹⁾-*

PIE sbj.act. **h₁ése/o-* > **ese/o-* > pre-PT **yəs’ə/e-*

PIE opt.act. **h₁s-*ǵ*éh₁/ih₁-* > **sē-/sī-* > pre-PT **s’e-/s’əy-*

Both augmented and full-grade forms would yield the stem allomorph in **ye/yə-* which does not seem to have survived in Tocharian. Unaugmented zero-grade forms

⁴⁷² See also Pinault (2002b: 244) who suggests that use of the optative as an imperfect could be due to contact between Tocharian and Middle Iranian languages.

are limited: the present plural forms, the optative **h₁s-*ieh₁/ih₁-**, the active participle **h₁s-(e)nt-*, and—importantly—the stem that yielded the Tocharian B copula: 3sg. *ste*, *star*-(obj.), 3pl. *skente*, *stare*, *skentar*-(obj.). These forms most likely reflect a **ske/o*-present to **h₁es-*; see the thorough discussions in Stumpff (1990: 86–91) and Hackstein (1995: 272–82). It is possible that the optative **sey-* ‘would be’, perhaps already with habitual past meaning, was reinterpreted as the imperfect to this copula present stem.⁴⁷³ In any case, we have direct evidence from Tocharian B that a transfer from optative to imperfect function happened at least once, so it is economical to assume that these forms took part in the same movement.

One dissenting account from the optative theory was presented by Klingenschmitt (1975: 157–8), who takes the imperfect **yey-* ‘went’ as a descendant of an imperfect **h₁ient* with an inner-Tocharian loss of augment. For this to work phonologically, he proposes a change **-əy- > *-ay-/ey-* in monosyllables which cannot be upheld.⁴⁷⁴ In addition, he still has to rely on an addition of the optative-imperfect marker **-əy-*, so the proposal is no more economical than the optative hypothesis.

Kortlandt (1996) gives a similar suggestion. He proposes that **yey-* ‘went’ reflects a Proto-Indo-European augmented imperfect, followed cautiously by Norbruis (2021: 229 fn. 23).

**h₁eh₁ei_x- > *ē_x- > *yey- > ^Byai, yeyem, ^Ayeş, yeñc*

This explanation works well for ^Byai, ^Ayeş since it delivers the forms almost directly—with the addition of the relevant Tocharian A and Tocharian B endings—and it explains the non-ablauting **ey*-vocalism throughout the paradigm. Kortlandt (1996: 172–3) suggests that the long vowel of the imperfect preform **-ē-* spread to other preterite formations such as the Tocharian A long-vowel imperfect and the Tocharian B causative preterite of class [2]; similarly, Rasmussen ([1992] 1999a: 568–70; 2002: 378) through a different route. While one might point to the dependence on the augment, otherwise absent in Tocharian, as a weakness for this hypothesis, e.g., Peyrot (2012b: 113), it can also be seen as a tendency in Indo-European languages for augmented imperfects of **h₁*-initial roots to develop long vowels which spread to

⁴⁷³ It is also worth noting that the ablaut **e/ə* is reminiscent of several preterite formations, for instance the s-preterite and the **lēka*-type, which may have played a part in pulling the paradigms from the optative into the past tense.

⁴⁷⁴ Other examples of the alternation in ^Bai and ^Bey can be explained as different chronological layers (Peyrot 2008: 58–9).

other preterite formations. This has been suggested for Germanic by Kortlandt (1992b), and most recently for Anatolian by Norbruis (2021: 209–35). However, if this proposal is correct, it must have happened independently in each branch, in which case a motivation for the loss of the augment in Tocharian is needed; see the discussion in 2.4.

There is a bigger issue with both Klingenschmitt's and Kortlandt's proposals. To explain the imperfect to 'be', they are forced to assume that the expected imperfect PT **yes-* (< **h₁éh₁es-*), was replaced with **šey-* through analogy with **yey-*. This analogy is quite problematic, since there are very few places where the stem variant **s^(v)-* would have been available in the verb for 'be' (see above). Klingenschmitt (1975: 158) suggests that the form is based on the present plural, e.g., 3pl. **h₁s-ent*, which he finds in Tocharian in the present stem of ^B*nes-*, ^A*nas-* 'be' from a prefixed stem **no-(h₁)s-*, following the derivation by Pedersen (1941: 161). This derivation is both uncertain and contested, meaning that the root present to **h₁es-* 'be' may not be attested in Tocharian at all.⁴⁷⁵ In addition, we would have to assume either an analogy modelled on the plural or a levelling of the root initial **y-* to **s^(v)-*, neither of which I can find any motivation for.

A more attractive candidate would be the copula stem attested in ^B*ste*, *skente* as it would provide a present stem on which an imperfect could be built. The presents of **y-* 'go' and **s-/š-* 'be', however, differ drastically in morphological expression, since **y-* forms a root present with active inflection, while **s-/š-* forms a **ššə/ske-* present with middle endings (Hackstein 1995: 272–82). Thus, **y-* 'go' with imperfect **yey-* is not a particularly good model for an imperfect to **s-/š-* 'be'. Another option would be to posit another Proto-Indo-European root as the ancestor of PT **šey*, but then one would lose the advantage of the phonological similarity of **h₁eḡ-* 'go' and **h₁es-* 'be'. In addition, it would be uneconomical, not to mention uncomfortable, to separate Tocharian entirely from the root **h₁es-* which fits the meaning of **šey* so well.

To summarise, the imperfect hypotheses by Klingenschmitt (1975: 157–8) or Kortlandt (1996) do not explain the attested facts of PT ^B*šey*, ^A*šeš*, ^B*yey*, ^A*yeš* as well as the optative hypothesis with conflation of the two expected stems.

6.4.2. The Proto-Tocharian category “imperfect”

While the origin of the **ey-*imperfects obviously affects our diachronic

⁴⁷⁵ I think the etymology that derives ^B*nes-*, ^A*nas-* from a perfect of the root **nes-* 'return' is better; see 3.3.2.

understanding of the Tocharian category of imperfect, one fact remains the same regardless of which hypothesis one finds most compelling: ^Bšey-, ^Aše- ‘was, were’ and ^Byey-, ^Aye- ‘went’ are the only two imperfect stems reconstructible for Proto-Tocharian. Even if they did come from the optative, at the Proto-Tocharian stage they must have been true imperfects. The question that remains is how many other imperfect forms existed at that stage and what form they took.

The first option is that Proto-Tocharian had an optative-imperfect system like Tocharian B which was largely replaced in Tocharian A (Lane 1953: 287; Peyrot 2012b: 113). One implication of this would be that Tocharian did not inherit the Proto-Indo-European imperfect, at least not in any way that is discernible to us now. I do not find this particularly likely since the Tocharian B imperfect is so regular that it is hard to imagine why Tocharian A would replace it with several different types of preterites, an argument also pointed out by Norbruis (2021: 229 fn. 23). The present-subjunctives do not play nearly as big a role in Tocharian A as in Tocharian B, so I cannot see that as a motivating factor for getting rid of the optative-imperfect system.

On the other hand, in the opposite scenario—that Proto-Tocharian had a preterite-based imperfect like Tocharian A which was replaced with optative formations in Tocharian B—we would have to assume that the language gave up a well-defined distinction between imperfect and optative in verbs that form present-subjunctives; compare TB opt.3sg. *campi*, ipf.3sg. *campi* with TA opt.3sg. *cāmpis*, ipf.3sg. *cāmṣā*.⁴⁷⁶ This is not very attractive either.

We may note that there are the imperfect formations in Tocharian A are related to preterite formations in Tocharian B. Most interesting are the imperfects of the type ^Alyāk ‘saw’ as they are rare and correspond to a rare preterite type in Tocharian B: 3sg. *lyāka* ‘saw’; see 2.4, 3.3.3 and fn. 305. It has been proposed that the Tocharian A lengthened grade imperfects go directly back to Proto-Indo-European imperfects, more precisely to imperfects of the Narten-type, exhibiting *ē/e-*ablaut* (Weiss 1993: 178–181; Jasanoff 1998: 305–7; 2003: 193, 224).⁴⁷⁷ These are connected with the lengthened-grade perfects in Latin, e.g., 1sg. *ēgī* ‘drove’; this connection is strengthened on the word level by the perfect *lēgī* ‘collected’, which most scholars consider a cognate of ^Blaka-, ^Alākā- ‘see’ (Lane 1953: 282; Weiss 2020: 439 fn. 17).

The concept of Narten roots is not universally accepted. To explain the

⁴⁷⁶ This last form seems to have been created on the basis of the s-preterite rather than an s-present as expected (Peyrot 2013a: 462).

⁴⁷⁷ See also Malzahn (2010: 158–62), who remains agnostic as to the type of Narten preterite (aorist or imperfect).

lengthened grade in the Tocharian A imperfects, Kortlandt (1996: 172) and Peyrot (2012b: 109) rather propose that an analogical transfer of the lengthened grade happened from the special imperfects **sey-* and **yey-*. Since Kortlandt already relies on analogy to explain the stem **sey-*, the relative chronology of the proposal is difficult. Why was the whole diphthong transferred in **sey-*, but not in **leka-*? Peyrot, who derives both special imperfects from old optatives, addresses this issue by proposing that the inherited full-grade **h₁eġ-* > **yay-* had not been ousted by the zero-grade in the present yet. This would allow the lengthened-grade in the imperfect to be analysed as a past tense marker: prs. **yay/yə-*, prt. **yey-* → **yVy-*. He suggests that this type of imperfect became productive first to suppletive verbs and then to a mild degree in verbs forming *na*-prs.[6]. While this scenario is possible, it is a lot of weight to put on the shoulders of **yey-*.

Peyrot (2012b: 106) presents an alternative solution, namely that the lengthened grade is inherited from forms subjected to monosyllabic lengthening of the kind proposed by Kortlandt (1994). While this hypothesis entails a phonological process, not a morphological feature like Narten behaviour,⁴⁷⁸ they are similar in that they explain the Tocharian A root imperfect as archaisms, which makes the etymological connection between ^A*tyāk* and Latin *lēgī*, and possibly between ^A*pārat* and Gothic *bērum* much more likely. The benefit of the Kortlandt hypothesis is that it explains the restriction of the lengthened grade in the preterite/imperfect, but on the other hand, it takes quite substantial language-internal restructuring in many branches.

A discussion on Narten ablaut as a morphological phenomenon is far beyond the scope of this chapter. For the purposes of this discussion, I note that the scholars cited agree that lengthened grade was a part of the verbal morphology in the ancestor language to Tocharian, as witnessed by verbal formations with PT *-*ē-* in the root, especially in the preterite. It thus seems plausible that the core of this preterite formation continues an inherited *-*ē-* in the root syllable, which spread to a limited degree in a pre-stage of Tocharian.

On the basis of these considerations, I think that the category imperfect was only emergent in Proto-Tocharian. The easiest way to account for the divergent imperfect formations is to assume that Tocharian A and Tocharian B innovated independently to a large extent, filling in the empty slot ‘imperfect’ using different strategies; see Adams (1978: 278), Peyrot (2022b: 96). The basis of the formation would be partly inherited imperfects with lengthened grade; in some verbs, e.g., PT **pār-* ‘carry’ and

⁴⁷⁸ Peyrot (2012b: 105) objects to Narten-based explanations on systemic grounds with reference to de Vaan (2004).

**laka-* ‘see’, that had classic imperfective semantics and did not form a separate preterite, there would be no meaningful distinction between imperfect and preterite. It is likely that the creation of the category ‘imperfect’ in Tocharian only truly started at the reinterpretation of **šey-* and **yey-* as past tense forms, because they brought with them the sense of habitual past. They were probably not the only optatives that made the jump to imperfects; most likely, some of the first imperfects were probably original optatives to present-subjunctives, where the forms are identical (Peyrot 2012b: 113). This tendency continued in Tocharian B, where adding optative morphology to the present stem became the one and only method of forming the imperfect. Below in 6.6.2, I will propose a mechanism by which newly formed optatives could have pushed some older forms into the imperfect.

In Tocharian A, it was instead preterite formations that were employed to fill the role of imperfect. In some verbs, an old *s*-preterite became associated with the present stem through suppletion, e.g., in the verb ^A*tränk-* ‘speak’, to which the verb ^A*weñ-* expresses the subjunctive and preterite. After these two roots became linked, the *s*-preterite 3sg. **cränkäs* would appear much more closely related to the present stem, despite its preterite morphology, and could therefore be used as an imperfect. As for the origin of the “weak” Tocharian A *’a*-imperfect, the proposal by Peyrot (2012b: 112) is convincing. He suggests that *’ə/e*-present-subjunctives of class [2] derived a preterite stem by adding **-a-* to the palatalised variant of the present-subjunctive stem. In some verbs, these could have been pushed into imperfect function by a new (suppletive) preterite, whence it became productive in Tocharian A. For references and discussion on various alternative theories, see Malzahn (2010: 163–9).⁴⁷⁹

6.5. The inherited optative to thematic stems

The system of optatives and imperfects, described and discussed in the two previous sections (6.3–6.4), does not look like what we can reconstruct on the basis of the other Indo-European branches; its development will be the topic of this section (6.5) and the next (6.5.6). In the following subsections (6.5.1–6.5.5), I will discuss the problems and possibilities of reconstructing an optative to thematic stems in Tocharian, starting with the forms attested to simple thematic presents.

⁴⁷⁹ Malzahn (2010: 166) emphasises the importance of the fact that the suffix *-’ā-* does not elide in the diachronic explanation. This could be explained if the suffix was added on top of the palatalising thematic suffix *-’ə-*, possibly with the development of a glide between the two suffixes initially (Winter 1994b: 406–8).

6.5.1. Optatives and imperfects to simple thematic presents

In Table 6.5, I have collected the optatives and imperfects to the stems that continue simple thematic presents; see 3.2 for discussion on the reconstruction of the present stems. As old simple thematic presents, these verbs could potentially form optatives—and in the case of Tocharian B, imperfects—that go all the way back to Proto-Indo-European optatives. Four out of the five verbs that can be traced back directly to Proto-Indo-European simple thematic presents (3.2) form either optatives or Tocharian B imperfects.

Table 6.5: Simple thematic optatives and imperfects

		TB opt.	TB ipf.	TA opt.
^B <i>kəl-</i> , ^A <i>käl-</i> 'stand'	'ə/e-prs.[2] ^α		mid.3sg. <i>kälyitär</i>	
^B <i>pər-</i> , ^A <i>pär-</i> 'carry'	'ə/e-prs.[2] ^α		act.3pl. <i>priyem</i>	
^B <i>śay-</i> , ^A <i>śāw-</i> 'live'	'ə/e-prs.- sbj.[2]	1sg. <i>śayim</i> , 2sg. (<i>śa</i>) <i>yit</i> , ^β 3sg. <i>śāyi</i>		3sg. <i>śāwiś</i>
^B <i>lak-</i> , ^A <i>läk-</i> 'lie'	'ə/e-prs.- sbj.[2]	3sg. <i>lyāśi</i>		

^α Suppletive subjunctive.
^β Restoration according to CEToM (THT 84, ed. M. Malzahn, accessed 1 February 2023)

Before discussing the optatives to the present-subjunctives in ^B*śay-*, ^A*śāw-* 'live' and ^B*lak-* 'lie', I would like to address the TB imperfects *priyem* and *kälyitär* and whether they actually can be used in the diachronic discussion of the thematic optative. In particular, the form ^B*priyem* and its inferred 3sg. ^B*pari** have been highlighted as a possible inherited optative stem to a simple thematic present (Adams 1978: 285; Jasanoff 2009: 64). However, it seems unlikely that this stem is inherited directly. Specifically, it is improbable that the imperfect as a category existed (however nascently) at a point prior to the establishment of the three-stem division between present, subjunctive, and preterite of the Tocharian verb. To put it another way, the opposition between imperfect and optative just would not be meaningful before the opposition of present and subjunctive was established. This

means that if pre-Proto-Tocharian continued the present optative **b^{her}(o)ih₁-*, it would have found itself homeless at the point when the optative became associated with—and subsequently dependent on—the subjunctive stem; see Pinault (2015a: 185). In the case of **pər-*, this scenario is unlikely in light of the Tocharian A long vowel imperfect *pārat* ‘carried’. If there had been an imperfect predecessor of the form *^Bpārəy-* in Proto-Tocharian, it is difficult to see why it would have been replaced in Tocharian A by a much more irregular form. The same reasoning can be applied to *^Bkālyitār*. I therefore think we must regard *^Bpriyəm* and *^Bkālyitār* as innovations, and they should therefore not inform the diachronic interpretation of the thematic optative.

It is thus only in the present-subjunctives that we will be able to find inherited optatives: prs.-sbj. *^Bśay-’ə/e-*, *^Aśāw-’ä/a-* < PT **śaw-’ə/e-* < PIE prs. **g^wih₃u-e/o-* ‘live’ and prs.-sbj. *^Blak’ə/e-* < PT **lak-’ə/e-* < PIE prs. **leg^h-e/o-* ‘lie’. Although we would expect a present-subjunctive to form an imperfect-optative in Tocharian B, all attested forms seem to be optatives:

TB 1sg. *śayim* ‘may I live’ (PK AS 5C a2, PK NS 25 and 26 b1),⁴⁸⁰ 3sg. *śāyi* ‘may he live’ (IOL Toch 86 a2), 3sg. *lyāši* ‘he should lie’ (PK AS 7A a6)

The only exception might be *^B(śa)yit* (THT 84 b2) which is found in an indeterminable context. Since there are so few forms attested, this lop-sidedness could be due to chance.

While the only attested Tocharian A form 3sg. *śāwiš* ‘he should live’ (A353 b2) is uninformative as to palatalisation, both Tocharian B stems *śayi-* and *lāši-* show suffix-initial palatalisation. In *^Bśayi-*, it is most likely not significant since *-y-* is generalised in the almost the entire base verb.⁴⁸¹ In *^Blyāši*, there is no doubt, however; the optative is formed—as synchronically expected—to the palatalised stem allomorph **lak- > ^Blās-*. In optatives to inherited simple thematic presents, we can therefore conclude that the evidence is completely consistent with an athematic optative suffix in the zero-grade **-ih₁-* with the important caveat that this evidence consists of a single form.

⁴⁸⁰ PK AS 5C and PK NS 25 and 26 are parallel texts.

⁴⁸¹ For forms with stems *^Bśaw-*, see Malzahn (2010: 916) and Peyrot (2013a: 825 fn. 879) with slightly different analyses.

6.5.2. Optatives to **ske/o*-presents

The simple thematic present was not the only thematically conjugated class in the Proto-Indo-European inventory. The **ske/o*-present is abundantly attested in Anatolian and Tocharian, as well as many CIE languages. If it is true that there was no thematic optative **-oih₁-* available in the precursor of Tocharian, a pressing question arises: What did an optative to a **ske/o*-present look like?

In Anatolian, there is no evidence as the category optative is absent. In Latin, the subjunctive is formed as expected for the 3rd conjugation with the suffix *-ā-*, e.g., subj.3sg. *noscat* ‘would know’, *pāscat* ‘would pasture’ (Liddell & Scott 1961: s.v.), and thus offers no trace of the Indo-European optative. In the other CIE branches, we find the expected thematic optative forms in **-oih₁-*, e.g., Ved. opt.3sg. *gácchet* ‘may go’, *yácchet* ‘may stretch’, Gk. opt.3sg. *πάσχοι* ‘may experience, suffer’, 2sg. *γινώσκεις* ‘you may know’. In Tocharian, as we have seen (6.3.1), the optative to *sk*-subjunctives and the Tocharian B imperfect to the *sk*-present use the formant PT **-ʔy-*. To summarise, the **ske/o*-present behaves exactly like the simple thematic present in its optative formation.

The question of optatives to **ske/o*-presents was anticipated and addressed by Jasanoff (2009: 63–4), who suggests that the optatives to the complex thematic presents were supplied by more archaic present stems; the **ske/o*-present was supplied by the *s*-present and the **ie/o*-present by the non-dental middle root present in **-or*. Jasanoff suggests that as the athematic Narten-ablauting *s*-present was being replaced with **ske/o*-presents, the *s*-present optative lagged behind, creating a paradigm of suppletive stems:

prs.ind. <i>*prék-s-/prék-s-</i> ‘ask’	opt. <i>*prék-s-ih₁-</i>
↓	
prs.ind. <i>*prék-ske/o-</i>	opt. <i>*prék-s-ih₁-</i>

He uses this paradigm to explain why the *s*-aorist was lacking an optative; while the presigmatic aorist could steal many of the *s*-present forms rendered obsolete by the new **ske/o*-present, the optative was still in use in the present.

However, if there was an optative in **-s-ih₁-* at such an early stage of the proto-language in presents next to presigmatic aorists, it is difficult to imagine that form would not override function at some point. In other words, the old form **prék-s-ih₁-* looks much more like an optative to an *s*-stem than an *sk*-stem, and it is

more likely that it would be reinterpreted as the *s*-aorist optative the minute an optative was created to match the newer **ske/o*-present (whether **prk-sk-ih₁-* as in Tocharian or thematic **prk-sko-ih₁-*). Unless we want to propel the stem suffix allomorphy all the way into the individual branches, this must have happened in a common prestage, in which case there is no reason why a language like Vedic would be unable to form an *s*-aorist optative.

Another option is to take the Tocharian evidence at face value and reconstruct **-sk-ih₁-* with a zero-grade variant of the optative suffix directly into the proto-language. This would imply that the thematic vowel was elided in the proto-language:

	indicative		optative
prs.3sg.	<i>*g^wm-ske-ti</i>	~	<i>*g^wm-sk-ih₁-t⁴⁸²</i>
prs.opt.3sg.	<i>*g^wm-sko-nti</i>	~	<i>*g^wm-sk-ih₁-ent</i>

This scenario is possible and totally in line with what we find in Tocharian. In Proto-Indo-European, however, it raises some uncomfortable questions, most notably how and why the vowel of the suffix was lost. Either **g^wmskih₁t* represents an earlier stem before it became thematic, in which case, we must accept that the optative is an ancient member of the Indo-European verbal system that was lost in Anatolian, or the suffix **-ih₁-* was able to delete a preceding vowel. I struggle to see a phonological reason for this; **g^wm-sko-ih₁-* is not a problematic stem. It would be unfortunate to get rid of **-oih₁-* in **-skoih₁-* once we have it, since it is identical to the thematic optative attested in CIE (in which case, the stem would have to de-thematise to then subsequently re-thematise).

A final option would, of course, be that the thematic optative **-oih₁-* did exist at the Indo-European prestage of Tocharian and either developed into or was replaced by **-əy- < *-ih₁-* within that branch.⁴⁸³ This possibility will be discussed further in 6.5.4–6.5.5.

6.5.3. The ablaut of **-ieh₁/ih₁-*

We have already seen above that the Tocharian optative-imperfect suffix is perfectly

⁴⁸² Perhaps the full-grade **g^wm-sk-ieh₁-t* is expected here.

⁴⁸³ This might also be assumed for the *ā*-subjunctive in Italo-Celtic (Weiss 2020: 444).

compatible with the athematic optative suffix of CIE. The remaining issue to be explained is the fact that the ablaut of the athematic suffix $*-iēh_1-/*-ih_1-$ has been eliminated in synchronic Tocharian. For Jasanoff (2009), the full-grade suffix would not be expected in thematic stems in any case, since he reconstructs acrostatic Narten ablaut for the pre-forms of the thematic optative; see also Jasanoff (1991: 101). Nonetheless, the question is relevant since an answer will allow us to better understand the productivity of the zero-grade formant.

In the singular, the optative suffix $^B-əy-$, $^A-äy-$ cannot reflect the expected full-grade $*-iēh_1-$ as this would probably have yielded $*-iē- > *-(y)'e- > ^B-(y)'e-$, $^A-(y)'a-$. One could possibly see this formant in the ubiquitous thematic ending of the Tocharian B optative 1pl. ^B-em and 3pl. ^B-əm , but I cannot see how it could have ended up in the plural, when it was eliminated in the singular. As discussed in 6.4.1, there are only two places where relics of the full-grade suffix can be posited, namely the imperfects to the verbs ‘be’ and ‘sit’.

I think that the easiest way to explain the elimination of ablaut is the sheer preponderance of the zero-grade variant. In the proto-language ancestral to Tocharian, the full-grade would have been found only in the active singular of athematic stems, while the zero-grade would have been present in the active plural, the entire middle, and possibly the s-aorist (if this indeed formed an optative, see 6.2). The nasal presents of class [6] in Tocharian can serve as a parallel to some extent. Also here, we only find evidence of the zero-grade of the infix $*-ne/n-$:

$^Btärkana-$, $^Atärna-$ < PT $*tərka-$ ‘emit’ < PIE $*TrK-n-H-$

In laryngeal-final roots, which are the nucleus of this class, we would expect the full-grade to produce a long vowel, $*-neH- > *-n\bar{V}-$, coloured according to the following laryngeal, but we do not find any relics of that kind.

Extra-Tocharian parallels can be adduced from Latin and Germanic (Adams 1978: 286); see Table 6.1. In Gothic, the zero-grade variant seems to have been completely generalised: Got. 3sg. *wili* ‘want’ < $*wil-\bar{i}-$ < $*\mu elh_1-ih_1-$. In Latin, we see that the zero-grade is gaining territory even in the archaic subjunctive of ‘be’ (Weiss 2020: 443–4):

Old Latin: *siem*, *siēs*, *siēt*, *sīmus*, *sītis*, *sient*
 → Classical Latin: *sim*, *sīs*, *sit*, *sīmus*, *sītis*, *sint*

Whether the elimination of ablaut was the leading cause of the systemwide regularisation of the optative-imperfect is difficult to say, but it is quite likely that the two are linked.

6.5.4. Possible phonological outcomes of **-oih₁-*

The immediate phonological problem with the thematic optative is that there are no parallels for the development of **-oih₁-* in internal syllables and only partial parallels for final syllables (Ringe 1996: 84). There is evidence, at least from Tocharian B, that the regular development of a Proto-Indo-European **oi-* diphthong in initial syllables before a consonant was PT **ay* > ^B*ai*: ^B*maiwe* ‘young’ < **moiwo-* ‘little’, cf. ON *mjór* ‘slender’, ^B*-aiwe-nta* < **oiuos* ‘one’ (Ringe 1996: 84; Hackstein 2017: 1315). We know that other instances of PT **ay* yields ^A*e*, e.g., PT prt.3pl. **paykare* ‘paint, write’ > ^A*pekar*, ^B*paiykāre* ‘painted’, PT **aykāre* > ^A*ekār*, ^B*aikare* ‘empty’. There is no reason to think that the same would not be the case for **ay*-diphthongs from original **oi* in non-initial internal syllables.

In final position, it seems that **-oi#* becomes ^B*-i*, ^A*-e*. The strongest piece of evidence for this is the nominative plural of masculine **o*-stems in which the ending **-oi* (taken over from the pronominal declension) yields ^B*-i*, ^A*-e*, probably through an intermediate PT diphthong **ey* (Del Tomba 2020b):

PIE nom.pl. **h₁ék-wōs* ‘horses’ → **h₁ek^woi* > PT **yókwey* > ^B*yakwi* ‘horses’

PIE ordinal **tritoi* ‘third’ > PT **trit^{ey}*⁴⁸⁴ > ^B*trici*, ^A*trice* ‘third’

It is possible that the same development happened with **oi* in final syllable before **-t*. If this is the case, that would affect the thematic optative with inherited secondary endings in the singular. This would mean that in Tocharian B the optative 3sg. ending ^B*-i* may just as well reflect **-oih₁t* as **-ih₁t*, assuming that final **-t* was lost after a vowel prior to the monophthongisation (Hackstein 2017: 1326):

**-oih₁t* > pre-TB **-ey* > ^B*-i*

This vowel would then spread to the rest of the paradigm. Potentially, there are thus thematic optatives hiding in plain sight in inherited imperfects and optatives:

**légh^h-oih₁-t* > **lak^h-ey* > ipf.act.3sg. ^B*lyási*

It is conceivable that the suffix in the singular was extended to the rest of the paradigm, especially since it would have merged with the athematic suffix in the zero-grade.

⁴⁸⁴ On the palatalisation, see immediately below.

There are, however, several issues with this scenario. First of all, there is the question of palatalisation. Ringe (1996: 81–2) and Kim (2018a: 64–5) favour an early monophthongisation of final **-oi* to a front vowel. Indeed, the masculine nominative plural ending does palatalise in some nouns, e.g., ^B*kokalyi* ‘chariots’ to ^B*kokale* ‘chariot’. This palatalisation is convincingly refuted by Del Tomba (2023: 318–9), who points out that the examples presented by Kim can be explained in other ways and that the counterexamples are more probative, for instance in old **oi*-stems, where palatalisation could not have been removed through analogy, e.g., ^B*reki*, ^A*rake* m. ‘word’. Thus, if ^B*léghoiht* is hiding within ^B*lyasi*, we will have to assume that palatalisation was introduced secondarily. This is not as big an issue as it may seem. If we look at the inventory of a thematic paradigm, there are two stem-final options: either ^B-*ə*-, ^A-*ä*- < PIE **-e*- with palatalisation or ^B-*e*-, ^A-*a*- < PIE **-o*- without.⁴⁸⁵ If the athematic optative suffix, which was palatalising in the athematic stems, was introduced into the thematic stems, it is not surprising that the palatalisation would be transferred as well.

The second problem is that this monophthongisation cannot explain the optative in Tocharian A, where we would expect an optative suffix ^A-*e*- in the thematic stems. There is no evidence of such a suffix. If the monophthongised thematic optative suffix existed in Proto-Tocharian, it must have been replaced wholesale by the reflex of **-ih₁*- in pre-Tocharian A. This is somewhat expensive, since we would have to give up direct cognates such as opt.3sg. ^B*klyauši* ~ 3pl. ^A*ktyošiñc* ‘may hear’, 3sg. ^B*šāyi* ~ ^A*šāwiš* ‘may live’. On the other hand, Tocharian A optatives are formed exclusively with the suffix ^A-*äy*- in the non-thematic classes, so it is conceivable there was enough analogical pressure to transform **šāweš* to **šāwiš* at some stage of pre-Tocharian A.

6.5.5. Deletion of the stem-final vowel

If the sound change of **-oihtC* > ^B-*i*, ^A-*e*, discussed above, turns out to be incorrect, it might still be possible to derive the Tocharian thematic optative(-imperfect) from the **oiht*-optative through analogical means.

⁴⁸⁵ The only exception is the agent noun in ^B-*ñca*, ^A-*nt* which is formed with a palatalising ^B-*e*-, ^A-*a*-; see Chapter 6.

“[...] it looks as if the thematic vowel of stems may actually have been deleted before the subjunctive and optative suffixes were added.” (Ringe 2006: 31)

The thematic vowel in the optative is not the only vowel that—at least synchronically—seems to be subject to deletion. The optatives to *e*-subjunctives of class [3] show exactly that: the deletion of PT non-palatalising **-e-* by the palatalising optative suffix **-’əy-*.

Table 6.6: Suffix alternation in sbj. and opt.[3]

	subjunctive	optative
TB	3sg. <i>kn-e-tär</i>	3sg. <i>kñ-i-tär</i>
TA	3sg. <i>kn-a-tr</i>	3sg. <i>kn-i-tär</i>
TB	1sg. <i>cm-e-mar</i>	1sg. <i>cm-ĩ-mar</i>
TA	3sg. <i>cm-a-tär</i>	1sg. <i>cm-ĩ-mār</i>

Yet, this alternation is expected, at least in some of the optatives to the *e*-sbj.[3], whose origin is to be found in root stems. If it is correct that the *e*-subjunctive reflects the original non-dental middle 3sg. **o*-ending with the later addition of Tocharian middle endings (see 4.2.2), it is possible to take some of these optatives as inherited from Proto-Indo-European. Although there would never have been a form “**n’ək-e-’əy-tər*”, synchronically the optative suffix would appear to replace the stem forming **-e-*. This could have served as an analogical model for the thematic stems, if they continued the **oih₁*-optative.

**nék-o* → **n’ək-e-tər* > ^B*nketär*, ^A*nkātär*
**nĕk-ih₁-* > **nək-’əy-tər* > ^B*nśītär*, ^A*nśītär*

There is an even more direct motivation to be found in the verbal system reconstructed for CIE, namely the fact that the subjunctive and the optative of root stems alternate suffixes. This point is illustrated quite beautifully by the paradigm of **g^wem-* ‘come’ > PT **k^wəm-* ‘come’. It is almost certain that the *’ə/e*-sbj.[2] of this verb continues the thematic subjunctive of the root aorist (Pinault 1994a: 203–4; Peyrot 2013a: 386–7). The accompanying optative would be built to the root stem as well,

and if both were inherited into Tocharian, it would come to look as if the optative suffix was added to the palatalising 'ə-grade of the thematic suffix. There would be a difference in ablaut, the subjunctive having *e-grade and the optative zero-grade, but this could have been levelled without much difficulty.⁴⁸⁶ It is also possible that the root-initial consonant in this verb in particular was palatalised by the optative suffix itself.⁴⁸⁷

sbj. **gʷém-e/o-* > **kʷəm-ə/e-* > TB act.3sg. *śānmām*, 3pl. *śānmeṃ*⁴⁸⁸

TA act.3sg. *śmāṣ*, 3pl. *śmeñc*

opt. **gʷm-ih₁-* > **kʷəm-əy-* → TB mid.1sg. *śmīmar*

TA act.3sg. *śmiṣ*

We have to assume that other root aorist verbs showed similar distributions in the early stages between Proto-Indo-European and pre-Proto-Tocharian. In this way, we can begin to understand why thematic optatives from original present stems would elide the full vowel of *-oih₁- > *-ey- as well; see Table 6.7.

Table 6.7: Analogical pressure on former present optatives

	sbj.	opt.	opt.
3sg.	* <i>n'ək-e-tər</i>	* <i>nək-əy-tər</i>	
3sg.	* <i>kʷəm-ə</i>	* <i>kʷəm-əy</i>	
3pl.	* <i>kʷəm-e-n</i>	* <i>kʷəm-əy-en</i>	
	↓	↓	
3sg.	* <i>wəyk-ə</i>	* <i>wəyk-ey</i>	→ * <i>wəyk-əy</i>
3pl.	* <i>wəyk-e-n</i>	* <i>wəyk-ey-n</i>	→ * <i>wəyk-əy-n</i>

⁴⁸⁶ It is worth noting that Old Avestan attests several aorist optatives with full-grade in the root: aor.opt.act.1pl.-conj. *varəzimā-ca* 'may do', *srəuuīmā* 'may hear' (Hoffmann & Forssman 1996: 226).

⁴⁸⁷ There are other examples of palatalisation 'jumping over' the nasal to affect the preceding consonant, e.g., nom.pl. of the Proto-Indo-European *nt-stems: **nt-es* > **n'tə* > ^B-ñc; see 5.4.1.

⁴⁸⁸ With an intrusive -n- from the present.

6.5.6. Reflections on the thematic optative as an isogloss

The cladistic question of this chapter is whether it can be established with a reasonable degree of certainty that Tocharian inherited an archaic optative suffix **-ih₁-* in the thematic stems. In the previous five subsections 6.5.1–6.5.5, I have presented and discussed several issues with this assumption. First and foremost, the regularity of the optative category in Tocharian has obscured any potential archaisms that might have informed us on the development of the mood. In addition to this, both structural and formal arguments can be adduced against the notion that PT **-(^h)ay-* necessarily reflects PIE **-ih₁-* directly. Among the structural arguments is the notion that the imperfect of simple thematic presents, in particular ^B*priyem* ‘carried’, cannot be a direct descendant of a PIE stem **b^hér-ih₁-*, but must be a neologism (6.5.1). In addition, if the attested optatives to other inherited simple thematic presents such as opt.act.3sg. ^B*śāyi*, 3sg. ^A*śāwiṣ* ‘may live’, ^B*lyasi* ‘may lie’ were to continue **-ih₁-*, it raises the question what the optatives to complex thematic stems like **ske/o-*presents would have looked like in the proto-language ancestral to both Tocharian and the CIE languages (6.5.2). In 6.5.3, I discussed the ablaut of the athematic suffix **-ieh₁/ih₁-*. Such an alternation is not found in the Tocharian optative suffix which only shows the zero-grade reflex (except perhaps in the imperfects of the verbs ‘be’ and ‘go’; see 6.4.1). While this does not directly affect the question of the thematic optative, it must be considered part of the regularisation process that the category underwent.

If we approach the problem using forward reconstruction, it is worth noting that in Tocharian B, the suffix **-oih₁-* probably would have developed into **-ay-* regularly if it occurred in the final syllable of the form (Hackstein 2017: 1326). A purely phonological solution cannot account as easily for the Tocharian A thematic optative, but it certainly calls the assertion that TB *-(^h)ay-* must continue **-ih₁-* into question; see 6.5.4. A final and important issue is that we find a deletion of the stem-final vowel of another subjunctive class, namely *e*-subj.[3]: subj. ^B*CəCe-*, ^A*CäCa-*, opt. ^B*CəC-’ay-*, ^A*CäC-’(äy)-*. This can most likely be explained as a reflex of the Proto-Indo-European modal system, in which the optative was formed directly to the aspectual stem (in this case, a root stem). The same would have been the case in verbs with thematic subjunctive stems, like **g^wem-* ‘come’. This could have provided a pattern for the productive optative in Tocharian; see 6.5.5.

Overall, there are far too many uncertainties to establish that PT **-ay-* continues an archaic state **-ih₁-* compared to the CIE languages **-oih₁-*.

6.6. Optatives to *a*-final stems: TB *-oy-* and TA *-äy-*

Having addressed the cladistic question of this chapter relating to the thematic optative—and presented a negative result—there are still some questions left unanswered with regard to the rest of the Tocharian optative, mostly concerning the stems in final ^B*-a-*, ^A*-ā-*. The secondary aim of my thesis is to explore the development of the grammatical features related to the isoglosses in question; see 1.4. This was addressed to some extent with regard to the thematic optatives (6.3.1) and the athematic optatives to subjunctive stems without final ^B*-a-*, ^A*-ā-*, i.e. root *sbj.[1]* and *e-sbj.[3]* (6.3.2). In this section, I want to expand on the diachronic analysis to include the stems in final ^B*-a-*, ^A*-ā-*, among others the very common *a-sbj.[5]*.

There is a noticeable disagreement in the Tocharian optatives to *a*-final subjunctive stems. Here, the Tocharian B optative is formed using a suffix *-oy-*, while in Tocharian A the optative is formed with the suffix *-äy-*. Neither suffix palatalises the preceding consonant.⁴⁸⁹

TB	<i>a-sbj.[5]</i>	opt.act.1sg. <i>kaloym</i> to <i>kāla-</i> ‘lead, bring’ mid.3sg. <i>kaloytär</i> to <i>kāla-</i> ‘lead, bring’
TA	<i>ā-sbj.[5]</i>	act.3sg. <i>kliš</i> to <i>kālā-</i> ‘lead, bring’ mid.2sg. <i>klitār</i> to <i>kālā-</i> ‘lead, bring’

Unlike the optatives of non-*a*-final stems, we cannot readily reconstruct these forms back to Proto-Tocharian. Malzahn (2010: 352 fn. 5) points out that we do not know what an internal diphthong ^B*-oy-* would correspond to in Tocharian A, but we might expect a similar correspondence as in the word-final examples, e.g., ^B*soy*, ^A*se* ‘son’. There is good evidence that PT ^y-diphthongs, regardless of their Proto-Indo-European starting point, monophthongise to *e* in Tocharian A: prt.act.3pl. ^A*pekar* ‘painted’ < PT ^{*}*paykāre* (^B*paiykāre*), prt.mid.2sg. ending ^A*-te* < PT ^{*}*-tay* (^B*-tai*); see Hackstein (2017: 1315). It is thus unlikely that the two suffixes derive from the same exact proto-form, meaning that either Tocharian A or Tocharian B has innovated and subsequently regularised intensely.⁴⁹⁰

⁴⁸⁹ With Malzahn (2010: 352), the palatalised exception ^A*yäkšintr-äm* ‘may she embrace her’ (A101 a1) to ^A*yäksā-* ‘embrace’ can be explained analogically, probably because the *s* in the root makes it look like an *s*-present.

⁴⁹⁰ There are two peculiar forms attested to *nā*-subjunctives of class [6] in Tocharian A that look as if they are formed with a suffix *-nās(š)-* < ^{*}*-nak’-*: opt.mid.3sg. (*yä*)*knāsšiträ* (A354 a1) to ^A*yäkā-* ‘be careless, neglect’ and *päknās(itär)* (THT1996a2) to ^A*päkā-* ‘intend’. There are no

There are about a dozen matches between Tocharian A and Tocharian B in both stem and diathesis in optatives to *a*-subj.[5], although the stem formations cannot go back to the same proto-form; see Table 6.8. On these grounds, we may assume that at least some of these matches represent original cognate sets, obscured by a morphological change in at least one of the languages. The question is therefore which language continues the more archaic situation.

Table 6.8: Optatives to *a*-subj.[5] cognates

TB	meaning	optative forms	TA	optative forms
<i>art(t)a-</i>	‘approve of, love’	act. <i>ārttoy</i>	<i>arta-</i>	mid. <i>ārtitār</i>
<i>kəla-</i>	‘lead, bring’	act.1sg. <i>kaloym</i>	<i>kälā-</i>	act. <i>kliš</i>
<i>kəwla-</i>	‘recede’	mid. <i>k_uloytār</i>	<i>kāwlā-</i>	act. <i>kuliş</i>
<i>kraup-</i>	‘gather’	mid. <i>kraupoytār</i>	<i>krop-</i>	mid. <i>kropitār</i>
<i>klautka-</i>	‘turn, become’	act. <i>klautkoy</i>	<i>lotka-</i>	act. <i>lotkiş</i>
<i>taka-</i>	‘be(come)’	act. <i>tākoy</i> ;	<i>tākā-</i>	act. <i>tākiş</i>
<i>mārsa-</i>	‘forget’	act.1sg. <i>marsoym</i>	<i>mārsā-</i>	act.2sg. <i>mārsit</i>
<i>yata-</i>	‘be able’	act.3sg.-obj.1sg. <i>yāto-ñ</i> ,	<i>yātā-</i>	act.3sg.-obj.2sg. <i>yātiş-şi</i>
<i>rāyta-</i>	‘seek’	mid. <i>rītoytār</i>	<i>rāytā-</i>	mid. <i>rititār</i>
<i>lām-</i>	‘sit’	act. <i>lamoy</i>	<i>lām-</i>	act.1sg. <i>lmim</i>
<i>waya-</i>	‘lead’	act. <i>wāyoy</i>	<i>wā-</i>	act.1sg. <i>wāwim</i>
<i>wārpa-</i>	‘enjoy, receive’	mid. <i>warpoytār</i>	<i>wārpā-</i>	mid. <i>wārpitār</i>
<i>skaya-</i>	‘attempt’	act. <i>skāyoy</i>	<i>skāyā-</i>	act. <i>skāwiş</i>
<i>stām-</i>	‘stand’	act. <i>stamoy</i>	<i>štām-</i>	act.3pl. <i>štmiñc</i>
<i>tsälpa-</i>	‘pass away, be released’	mid. <i>tsälpoytār</i>	<i>tsälpā-</i>	act. <i>tsälpi</i>
Forms are 3sg. unless otherwise indicated				

subjunctive forms attested to either stem, but we find subjunctives of class [6] in Tocharian B: *na*-subj.[6] mid.3pl. *yäknāntār* and mid.3sg. *päknātār* with a regular opt.mid.3sg. *päknoytār* (Malzahn 2010: 702–3, 790–1). There is no clear donor for the extra *-k’-* in Tocharian A; it may be some kind of hiatus-breaker (Couvreur 1947: 74–5; Peyrot 2013a: 50, 199). It is worth noting that the two roots are close to opposite in meaning and could have influenced each other.

6.6.1. Expected phonological developments

Any discussion on the Tocharian B *oy*-optative must begin with acknowledging the similarity with PIE **-oih₁-*. This comparison is, however, only attractive on the surface level, since etymological identity is neither a phonological nor a morphological possibility. To quote Pedersen (1941: 203), “Die Ähnlichkeit mit gr. *πέροιμι* ist also trügerisch”. We must therefore search for a different origin for the Tocharian B optative in *-oy-* and by extension, its functional counterpart in Tocharian A, *-äy-*.

In this section, I apply forward reconstruction to the optatives of *a*-final roots in the hope that it can help us determine whether ^A*-äy-* or ^B*-oy-* is more original as the optative formant in these stems. Since the basis of the *a*-final subjunctive stem are laryngeal-final roots (see 2.6), and predominantly aorist stems, the starting point for its optative should be **-H-ieh₁/ih₁-* from a Proto-Indo-European perspective. The strong stem would mechanically yield pre-PT **-a-ye-* which would probably undergo contraction; if the product of this contraction was the same as the contraction in the preterite participles to *a*-final roots, **áwe > *á.e > *o* (Peyrot 2010: 70), we would expect the strong variant of the optative suffix to *a*-final roots to be PT **-o-*. In the weak stem, it is quite uncertain what the phonologically regular outcome would be of a sequence **-Hih₁-* due to the lack of parallels.

If the stem-final laryngeal **-H-* did not vocalise, we could perhaps take PIE **uīH-ró- > ^Awir* ‘young’ as a partial parallel to the 1pl. and 2pl. which have consonant-initial endings. In that case, we would expect, e.g., the 1pl. **CCH-ih₁-me* to yield **CəC-(⁹¹)əy-mə*.⁴⁹¹ If, on the other hand, the first laryngeal did vocalise, we might expect that the laryngeal of the suffix would also vocalise, since **-i-* would be realised as a consonantal glide: **CCH-ih₁-me > *CəCa-ya-mə*. In the 3pl., the vowel-initial ending would prevent vocalisation of the suffix laryngeal: **CCH-ih₁-ent > *CəCa-y-ən* or **CəC-y-ən*, depending on the vocalisation of the root-final laryngeal.

Given the lack of parallels of the sequence **CHih₁C*, it is not possible to argue decisively in favour of any of the options above. In either case, the pre-Proto-Tocharian would have exhibited at least three allomorphs of the optative suffix:

Strong stem **CCH-ieh₁-C- > *CəCa-ye-C- > *CəC-o-C-*

⁴⁹¹ On the presence or absence of palatalisation, see below.

Weak stem	<i>*CCH-ih₁-C-</i>	> <i>*CəC-^(ʰ)əy-C-</i> or <i>*CəCa-ya-C-</i>
	<i>*CCH-ih₁-V-</i>	> <i>*CəC(a)-y-V-</i>

In light of **uih₁ró-*, where **i* retains its syllabicity and neither of the surrounding sounds, **u* and **h₁*, vocalise, it is more likely that neither of the laryngeals vocalised in the forms with consonant-initial endings and that **i* remained vocalic: **CCH-ih₁-C-* > **CəC-^(ʰ)əy-C-*. The fact that the optative formant **-^(ʰ)əy-* is so prevalent is also in itself an argument for this development, as we would otherwise have to assume that it spread from the 3pl. (and possibly middle forms in vowel-initial endings) in all paradigms.

Whether or not the suffix was ablauting at this point in (pre-)Proto-Tocharian is difficult to say. But if the phonological assumptions above are accepted (provisionally), I can see three possible scenarios from this point. Firstly, Proto-Tocharian could have inherited an ablauting paradigm with several allomorphs, from which the languages developed separately; secondly, the Tocharian B situation with the suffix -oy- should be reconstructed for Proto-Tocharian, meaning that some conflation of the suffix allomorphs took place in pre-Proto-Tocharian; or, thirdly, the suffix in Tocharian A continues the Proto-Tocharian situation, meaning that the weak grade of the suffix **-əy-* was extended to all forms of the paradigm.

Starting with the first possibility, perhaps **-o-* was conflated with **-^(ʰ)əy-* into **-oy-* before the split of the two languages. This is not inconceivable as the strong stem may have needed reinforcement as an optative marker. In that case, we can take the Tocharian B optative as the continuation of the strong stem, and the Tocharian A optative as the continuation of the weak. In Tocharian A, the lack of palatalisation can be attributed to analogical removal after the strong stem (that was then lost). This scenario neatly accounts for the attested systems, but it is quite hypothetical. We have no corroborating evidence for intraparadigmatic ablaut in the optative elsewhere, and this hypothesis assumes that the alternation was kept until the final stages of Proto-Tocharian unity. On the other hand, both Tocharian A and Tocharian B show evidence of heavy independent regularisation, to which the absence of ablauting relics could be attributed.

Moving on to the second scenario, what would it mean for Tocharian A, if we proceed with the hypothesis that the Tocharian B opt.[5] situation should be projected back to Proto-Tocharian? Pedersen (1941: 203–4) proposes that PT **-oy-* > TA †-e- developed into non-palatalising ^ʰ-äy-. A similar but analogical approach has been taken, e.g., by Adams (1978: 285) and Malzahn (2010: 352). To exemplify, the Tocharian A reflex of PT **tākoym* (> ^b*tākoym* ‘may I be’) would have developed into

†*tākem*, but would have been replaced analogically with ^ʌ*tākim* which we find attested. This is certainly a possible explanation for the Tocharian A facts, but I do not find it particularly well motivated. The *ā*-subj.[5] is an extremely common class in Tocharian A, participating in 6 out of 11 out the most common stem patterns (Peyrot 2013a: 138–41). If all subjunctives in this class formed their optatives with the suffix **-e-*, which is not used to mark any other category, it is difficult to see what the incentive would be to remake it into **-i-*. There is also a question of economy. Since **-oy-* has to be an innovation of pre-Proto-Tocharian, even in this scenario, we would have to assume that Tocharian A abandoned this innovation completely, and introduced **-ʾay-* from other stems, but without the palatalisation.

Regarding the lack of palatalisation, it is difficult to judge the likelihood of the suggestion that it was retained from the original **-oy-* suffix when we do not know whether optatives to the root *sbj.[1]* palatalised in Tocharian A. If they did, the palatalisation must be analysed as being suffix-initial rather than stem-final, which would be a problem for the suggestion. On the other hand, if they did not, the palatalisation, found only in thematic stems (and two Tocharian B *e*-*sbj.[3]* forms; see above 6.3.2), can be analysed as a result of the palatalising stem variant **-ʾä-*, rather than the optative suffix. As mentioned in 6.3.2, I lean towards the first option, but this matter can only be solved by the discovery of a diagnostic *opt.[1]* form in Tocharian A. To summarise, if the optative suffix of Proto-Tocharian *a*-final stems was **-oy-*, we have to assume an analogical introduction of **-a-* in pre-Proto-Tocharian and subsequent analogical restoration in Tocharian A, which is not unproblematic.

Let us now turn to the third option, namely that the optative suffix was **-(^ʷ)ay-* in Proto-Tocharian, i.e., the outcome of the weak optative stem **-H-ih₁-*. For the Tocharian B optative, we would have to assume that the stem-final *-a-* of the subjunctive was introduced into the optative after the end of Proto-Tocharian. From there, we must assume that **-a.ay-* contracted to **-oy-*. This is a common assumption for the origin of the *oy-* suffix (Hackstein 1995: 300 fn. 32; Pinault 2008: 440–1; Malzahn 2010: 348–9; Del Tomba 2023: 83). Neither the reintroduction of **-a-* nor the contraction are particularly expensive. There could have been a need to strengthen the link between the subjunctive and the optative stem, so as to differentiate the latter from the imperfect. If we assume that this third option for the phonological development of **-H-ih₁-* is correct, the lack of palatalisation in Tocharian A takes a much more central role: how can it be explained if the suffix is inherited directly from Proto-Tocharian, perhaps even from Proto-Indo-European?

One possibility is that it could have been removed analogically, if optatives

formed to the root *sbj*.^[1] did not palatalise through the mechanism described above. Since this cannot be determined, I will leave this possibility aside. There is another, slightly speculative, option, namely to take [^]äy- as the phonologically regular outcome. This solution hinges on a suggestion by Ringe (1996: 18–9) that an effect of a consonantal laryngeal lingers long enough in Tocharian to prevent palatalisation. The evidence for this sound change is slim, but hard to disregard. First, there is ^B*skiyo* ‘shadow’ which both in form and function corresponds very neatly to Gk. *σκιά* ‘shadow, shade’ (Couvreur 1950: 128). Further cognates include Skt. *chāyā* ‘shadow’, Av. *asaiia-* ‘who casts no shadow’, Latv. *seja* ‘face’ and Alb. *hie* ‘shadow’. On the basis of these, we can reconstruct a proterokinetic paradigm **skéHih₂*, **skHiéh₂s* for Proto-Indo-European (Ringe 1996: 18; Beekes 2010: 1351; Derksen 2015: 549). Beekes proposes laryngeal metathesis in the weak stem found in Greek, Tocharian B and Albanian: **skHieh₂-* > **skiHeh₂-*. However, the Tocharian B form cannot easily derive from **skiHeh₂-*, since **sk-* should palatalise before **-i-*. It is therefore easier to trace the Tocharian B form back to the weak stem **skHieh₂-* directly, like Ringe (1996: 19); see also the discussion by Del Tomba (2023: 151–3).⁴⁹²

Another example can perhaps be found in ^B*səyn-*, ^A*säy(n)-* ‘be satiated, depressed’. This verb, along with its sister verb ^B*soy-* ‘satisfy’, must go back to PIE **seh₂(i)-* ‘be satiated’ (LIV 2001: 521–2).⁴⁹³ Hackstein (1995: 299–300), followed by Peyrot (2013a: 587), suggests that ^B*səyn-*, ^A*säy(n)-* continues the zero-grade stem of a **neu/nu-*present with suffix in the zero-grade: **s(h₂)inu-* > PT **səynə-*. With the sound change proposed by Ringe, we can now assert the laryngeal in this form to explain why the verb is not **šəynə-* (< **si-nu-*). There are two other verbs that end in **-əyn-*: ^B*kläyn-*, ^A*kläyn-* ‘be necessary’ and ^B*rəyn-*, ^A*räy-* ‘give up, desert’. They are usually derived from **neu/nu-*present of PIE **klej-* ‘stand’ and **h₃reiH-* ‘whirl’ respectively (LIV 2001: 306, 332; Malzahn 2010: 626, 827; Adams 2013: 241–2, 582). As **klej-* is not laryngeal-final, we would expect **kli-nu-* to become PT **kläynə-*. Such forms are attested, e.g., *sk-prs*.^[9].act.3sg. ^B*klyinaššām* next to ^B*klinaššām*, but the unpalatalised forms are older (Peyrot 2013a: 745 fn. 191). Perhaps analogical depalatalisation came

⁴⁹² The quality of the laryngeal is determined to be **h₂* by Ringe (1996: 18) and Beekes (2010: 1351) on the basis of Gk. *σκηή*, Dor. *σκαῖᾱ* ‘tent’. A. Lubotsky (p.c.), however, suggests that very good cognates are available if we reconstruct **h₃* instead: Gk. *σκότος* ‘darkness, dark’, OIr. *scáth* ‘shade, darkness’, Go. *skadus* ‘shadow, shade’ < **sk(e)h₃-t-*. Alternatively, he suggests a connection with PIr. **cíahma-*, Skt. *śyāma-* ‘black’, YAv. *sāma* ‘black (horse)’ in which case the laryngeal should be **h₁*.

⁴⁹³ The **-i-* is based on forms with *-i-* in the root, attributed to laryngeal metathesis by LIV (2001: 521 fn. 4).

into play from **saynə-*.

Perhaps we can also include ^B*laukito*, ^A*lokit* ‘guest, stranger’, if the derivation by Pinault (2015b: 176) is correct. He takes the form as a compound **lo_{uk}-h₁i-teh₂* ‘coming from afar’; compare ^B*lauke*, ^A*lok* ‘far’. According to Pinault (2008: 423), PIE vocalic **i* does not cause palatalisation in velars, labials, labiovelars or **s*, so he does not need to invoke an effect of the laryngeal, but in that case, as Del Tomba (2023: 125–6) points out, we would have to assume that **lo_{uk}-h₁i-teh₂* became PT **laukato*, rather than **laukayto*. With Ringe’s proposal that **Hi* > **əy* (and **Hu* > **əw*), Pinault’s reconstruction gives the attested form, if we assume the blocking-effect from the laryngeal.

Finding direct evidence in the optatives of laryngeal-final roots inherited directly from Proto-Indo-European is not easy, since Tocharian *a*-final roots no longer corresponds one to one with *set*-roots. There is seemingly one counterexample to this palatalisation-blocking effect, namely the opt.1sg. ^B*taccimar* (PKAS4B a5) which has been analysed as an irregular optative to ^B*tatta-* ‘put’ directly from the Proto-Indo-European reduplicated optative **d^{he}-d^hh₁-ih₁-* (Adams 1999: 285; 2013: 302; Malzahn 2010: 348–9 fn. 1; Peyrot 2013a: 757 fn. 292). However, Adams (2014) reanalysed this and a few possibly related forms and convincingly concluded that ^B*taccimar* rather belongs to the verb ^B*tatk-* ‘extend’ which must find its origin in a **ske/o*-present, not in a laryngeal-final stem.⁴⁹⁴ Recently, O. Lundysheva (p.c.) has identified the form *tättoym* ‘may I put’ in SI2987/2-1 b3, an optative 1sg. form to the subjunctive stem ^B*tatta-* with the expected suffix *-oy-* which definitively shows that ^B*taccimar* does not belong to ^B*tatta-*. There is one Tocharian A form which we might even take a positive evidence for this sound law: ^A*knitär*. Since the underlying Proto-Indo-European root was laryngeal-final **génh₁-* ‘be born’, the synchronically unexpected lack of palatalisation would be predicted.

In conclusion, I think there is a case to be made that the Tocharian A optative formant *-äy-* represents the phonologically regular outcome of PIE **-H-ih₁-* and that it perhaps reflects the Proto-Tocharian optative suffix directly, although we cannot rule out that the discrepancy between TB *-oy-* and TA *-äy-* is due to an ablauting suffix in Proto-Tocharian.

6.6.2. Non-palatalising **əy-* in the Tocharian B imperfect

In the previous subsection, I proposed that the Tocharian A optative suffix *-äy-* could

⁴⁹⁴ For the etymology of ^B*tatk-*, see Pinault (2014).

have developed through regular sound change from **-ih₁-* added to laryngeal-final roots. There is an added benefit to this solution: it can be used to explain the lack of palatalisation in the Tocharian B imperfects formed to the *e*-prs.[3] (suffix ^B*-e-*, ^A*-a-*) and the *o*-prs.[4] (suffix ^B*-o-*, ^A*-a-*). As noted in 6.4, these two classes form imperfects with the suffix ^B*-äy-*, which never palatalises, unlike the optative to *e*-subj.[3] (suffix ^B*-e-*, ^A*-a-*). An explanation for this phenomenon was proposed already by Krause (1950) who suggests that the imperfect suffix in these two classes derives from the thematic optative. Malzahn (2010: 257), however, points out that the distribution of these present classes does not correspond to original thematic presents. While we know that some thematic present underlie the *e*-prs.[3] and *o*-prs.[4], e.g., old *sk*-presents like 3sg. ^B*mäsketär*, ^A*mäskatär* ‘is’, and that—as suggested in 3.4.2 and 3.4.4—more may be added to that group, these forms could hardly have been influential enough to influence the entire group, and thus I completely agree with her objection.

In Tocharian A, another peculiar fact presents itself: there are no imperfects formed to *a*-prs.[3] or *a*-prs.[4] with the exception of one *s*-imperfect: 3pl. ^A*klawrä* ‘fell down’ (YQ2.7 a6). Malzahn (2010: 401–2) connects these two facts and suggests that the phonological outcome of an **äy*-imperfect to *a*-prs.[3] and *a*-prs.[4]—which she to a large extent derives from former denominative or deverbative formations—was too aberrant in the system to survive: **-a/ōĩ-*. In Tocharian B, this was replaced with bare **-äy-*, which she calls ‘ubiquitous’, while Tocharian A started using the regular preterite as a substitute. However, non-palatalising **-äy-* is not ubiquitous in Tocharian B; in fact, it only exists in these classes. Especially in view of opt.[3] ^B*nšitär*, ^B*cmütär* etc., I do not understand why imperfects to *e*-prs.[3] (and *o*-prs.[4]) would not be restored to ^B*-äy-* within this scenario, e.g., †^B*mäššitär* instead of ^B*mäskitär*.

I would like to make a different suggestion to explain the Tocharian B situation. I will begin with the assumption that non-palatalising **-äy-* is the phonologically regular outcome of **-Hih₁-* before a vowel. This means that in Proto-Tocharian, an **a*-subj.[5] **CaC-a- (/ *CaC-a-)* formed an optative **CaC-äy-*, a situation continued in Tocharian A. In pre-Tocharian B, this optative is optimised with the stem-marking **-a-* to increase the connection to the subjunctive which developed into ^B*-oy-*. This development meant that the original optative was redundant and lost in most stem classes. For instance, in verbs with *a*-subj.[5] and *na*-prs.[6], the present is also *a*-final and would also be liable to the renewal **-a-äy- > ^B-oy-* at a certain point. In verbs with *e*-prs.[3] (suffix ^B*-e-*, ^A*-a-*) and *a*-subj.[5], however, this stem came to look like an optative formed to the present stem, i.e., an imperfect, on the model of the relationship between *e*-subj.[3] and its optative:

<i>a</i> -sbj.[5] * <i>tsəlpətər</i> ‘will be released’	opt. * <i>tsəlpəytər</i> ‘may (s)he be released’
	↓
<i>a</i> -sbj.[5] * <i>tsəlpətər</i> ‘will be released’	opt. * <i>tsəlp-a-əytər</i> ‘may (s)he be released’
	↓
<i>e</i> -prs.[3] <i>tsəlp-e-tər</i> ‘is released’	ipf. * <i>tsəlp-əy-tər</i> ‘was being released’
compare	
<i>e</i> -sbj.[3] * <i>nk-e-tər</i> ‘will perish’	opt. * <i>ns-’əy-tər</i> ‘may (s)he perish’

In Tocharian A, optatives to *ā*-final stems were not renewed, and the *äy*-forms were therefore retained. It is still somewhat puzzling that no new imperfects in *-’ā*- were created to these stems, but it may perhaps be seen as another indication of the recency of the imperfect as a category, if the productivity of the formation had not yet reached the *a*-prs.[3] and *a*-prs.[4]. However, I do not see any immediate reason why these two present classes would be treated differently than the rest in this regard.

6.7. Chapter conclusions

The question of this chapter was to determine which hypothesis is the most likely: that Tocharian did not inherit the thematic optative in **-oih₁-* and instead shows a more archaic state **-ih₁-*, or that Tocharian did inherit **-oih₁-* but has lost it somehow. This potential isogloss does not have bearing on the Tocharian Second hypothesis, since **-oih₁-* is not found in Italo-Celtic either. Yet, it would still place Tocharian high up in the family tree if it can be established as an archaism. The road to an answer has proven full of impediments as the Tocharian languages show optatives that have clearly undergone a lot of regularisation, not only in a common prestage, but individually in Tocharian A and Tocharian B as well; there is a surprising lack of irregular or archaic looking forms. In addition to this, the formation of the imperfect category complicates the picture, because it is formed the same way as the optative in Tocharian B, but not in Tocharian A.

The idea that the thematic optative suffix **-oih₁-* is a combination of the zero-grade of the athematic optative suffix **-ieh₁-*/**-ih₁-* and the thematic vowel is very attractive and almost certainly correct. Because it is so transparent in its constituent parts, it is plausible that the renewal happened at a relatively late stage of the Indo-

European proto-language, and perhaps after the separation of the Tocharian branch.

Of the verbs that directly continue Proto-Indo-European simple thematic presents, the form ^B*lyasi* ‘should lie’ provides evidence that this stem class uses the PT suffix **-ʔy-* which reflects **-ih₁-*. The optative to old **ske/o-*presents forms the optative in the same way. This can be seen as evidence for the hypothesis that Tocharian continues an archaic state. On the other hand, this hypothesis partly relies on the argument that the thematic optative was not needed until the simple thematic present class was fully fledged. This is not the case for **ske/o-*presents which must be reconstructed for the oldest layer of Proto-Indo-European available to us. Positing an optative **-sk-ih₁-* would just push the problem of an optative suffix that deletes the thematic suffix from Tocharian into Proto-Indo-European. The uncertainty of the status of the optative to complex thematic stems is a major disadvantage to the idea that the thematic optative is a recent creation, and thus that Tocharian shows an ancestral state of it.

There is another—bigger—issue with the isogloss, namely that it is practically impossible to prove that the Tocharian optative is archaic. Phonological change and regularisation has obscured the prehistory of the category to such an extent that it is difficult to reconstruct it even back to Proto-Tocharian. For this reason, I used forward reconstruction to see what might have happened to the thematic optative **-oih₁-* if it had been inherited into Tocharian.

One of the conclusions reached from this approach was that a phonological derivation of act.3sg. **-oih₁t > ^Bʔy* is possible, but it is difficult to explain the entire formation like that, because it neither explains the palatalisation in Tocharian B nor the Tocharian A suffix *-ʔy-*. On the other hand, I have made the case that there are pressures within the Tocharian system, both phonological and morphological, that would cause the stem-final vowel to delete. Root stem optatives, inherited into Tocharian, would appear to do exactly that if the stem which was employed as the subjunctive was formed to the root with a vocalic suffix.

Other factors may have been at work to make **-(^B)ʔy-* the most productive optative(-imperfect) suffix. On optatives to *a*-final stems, where Tocharian A and Tocharian B disagree on the formation of the suffix, I have argued that it is preferable to reconstruct the Tocharian A suffix *-ʔy-* back to Proto-Tocharian, rather than TB *-oy-*. The suffix itself may be the phonologically regular outcome of the optative in laryngeal-final roots. This may in turn help us to understand why the imperfect suffix in the Tocharian B *e*-prs.[3] and *o*-prs.[4] does not palatalise; this suffix could be the old optative suffix pushed into the imperfect by a new optative in *-oy-*.

Regularisation and internal change has created a situation simultaneously so

simple and so complex that it is hard to prove anything at all about the thematic optative in Tocharian. In fact, the cumulative case for the various ways that the Tocharian branch could have disposed of an inherited suffix **-oih₁-* is much stronger than the case for an archaic inherited state **-ih₁-* in the thematic stems. And without being able to prove that **-ih₁-*, not **-oih₁-*, was inherited as the optative suffix in Tocharian, an isogloss separating Tocharian from the CIE languages (excluding Italic and Celtic) cannot be established.

Chapter 7 Conclusions

The cladistic position of Tocharian is important in three primary ways. First of all, it informs our understanding of the prehistory of the Tocharian languages, their development, and possibly their speakers. Secondly, it influences the way we reconstruct the proto-language of all Indo-European languages. Finally, it affects the input that we as historical linguists provide to the interdisciplinary work between linguistics, archaeology, and genetics to determine the primary and secondary homelands of the Indo-European languages.

The plausible hypothesis that Tocharian was the second branch to separate from the Indo-European family tree has become the standard view among Indo-Europeanists in recent years. Yet, there is much disagreement with regard to the evidence on which this hypothesis rests. In 1.3, it became clear that many of the isoglosses that have been proposed as foundational evidence cannot carry cladistic weight in their own right. Hence, while these isoglosses may be consistent with the Tocharian Second hypothesis, they cannot be considered evidence for it.

The objective of the research presented in this dissertation was to gain insight into the linguistic prehistory of the Tocharian branch of Indo-European in two ways:

- Aim 1) To test alleged verbal isoglosses which could substantiate the hypothesis that Tocharian separated from the family tree as the second branch.
- Aim 2) To understand how the grammatical features related to the isogloss developed from Proto-Indo-European to Tocharian.

In this concluding chapter, I start by summarising the results of the thesis: the

cladistics results, relating to aim 1), in section 7.1, and the results relevant to Tocharian historical morphology, related to aim 2), in section 7.2. In section 7.3, I reflect on the consequences of the research on the Tocharian Second hypothesis and the possible secondary homeland of the Tocharian branch, before ending with some perspectives for future research on this topic.

7.1. Cladistic results

The first aim was addressed by applying the cladistic method (1.2.1) to six isoglosses treated in five studies; see Table 1.1 in 1.4. In order for an isogloss to be considered evidence for the Tocharian Second hypothesis, it must be shown that Tocharian preserves an archaic state and that CIE languages have innovated together. For this reason, isoglosses based on the absence of a feature cannot be included as positive evidence; neither can shared innovative states that are cross-linguistically commonplace, as these could have developed independently. I chose isoglosses from the verbal realm, as morphological innovations tend to be less trivial than phonological or lexical ones. The verbal isoglosses that have been proposed so far carry significant potential with regard to the Tocharian Second hypothesis if it can be proven that they do show Tocharian archaism. Another reason for delving into the verbal domain is that the Tocharian verbal system and its antecedents are very disputed topics among Indo-Europeanists. Approaching some of the disputed aspects of the verb from a cladistic perspective could yield new results and insights.

The first topic treated is the question of the possible relationships between the Tocharian *s*-preterite, the Hittite *hi*-conjugation preterite and the CIE *s*-aorist. If it can be shown that the two former formations represent an archaic paradigm that constitutes the precursor of the latter, there would be no doubt that Tocharian belongs in the top of the Indo-European family tree: the development of a fully sigmatic aorist would constitute a highly significant innovation, unlikely to have happened independently in the CIE branches. I treated this possibility, known as the presigmatic aorist theory, in Chapter 2.

In Chapter 2, I compared the arguments and assumptions of the presigmatic aorist theory with those of competing hypotheses, primarily the *s*-aorist theory, which takes the Tocharian *s*-preterite as a descendent of the fully sigmatic *s*-aorist. I focused on the active paradigm, the sigmatic middle, the function of the *s*-preterite, as well as the position of the root subjunctive of class [1] in relation to the *s*-preterite. The resulting analysis shows that Tocharian and Hittite agree on very few features in the two paradigms and that several assumptions are needed to derive the three

paradigms—the *s*-preterite, the *hi*-preterite, and the *s*-aorist—from a common ancestor. The argument that the sigmatic endings in the 3sg. of both languages could not have arisen independently by coincidence (Jasanoff 2003: 176–7) is weakened by the identical endings in the 2sg. ^B*-sta*, ^A*-št*, Hitt. *-šta*, which did indeed arise independently. While the *s*-aorist theory also requires assumptions, these are primarily inner-Tocharian sound changes that have parallels in some cases and do not have counterexamples. This means that it is more likely that Tocharian inherited the same state as the CIE languages, that is, a fully sigmatic aorist. The *s*-preterite thus cannot be used to support the Tocharian Second hypothesis.

I build on the conclusions of Chapter 2 in Chapter 4, where two stem classes, the subjunctive of class [3] (suffix ^B*-e*-, ^A*-a*-) and the Tocharian A root preterite [o] (type ^A*nakät*) are treated. These stem classes are systemically linked with the *s*-preterite, and Jasanoff (2019b: 44–5) suggests they represent archaic intransitive middle forms to the presigmatic paradigm. The possible origin of these stems was discussed in 4.2–4.4. Based on diachronic analysis, I argue that they continue inherited intransitive stem types, the so-called ‘stative’ in **C(e)C-o* and the perfect, respectively, that became productive as oppositional intransitives in a group of verbs with similar semantics and root structure, e.g., ^B*nək*-, ^A*näk*- ‘perish; destroy’ < PIE **nek-* ‘perish’. The stem pattern with *e*-subj.[3] and root prt.[o] should thus not be considered an archaism of Proto-Indo-European, although it certainly is archaic within Tocharian.

The primary isogloss treated in Chapter 3 was the scarcity of the simple thematic presents in Tocharian. Since Adams (1978), it has been acknowledged among scholars of Tocharian that there are very few Tocharian stems that can be shown to continue Proto-Indo-European simple thematic presents directly. However, from the few that we do find, e.g., prs.[2] ^B*pər*-’ə/e-, ^A*pär*-’ä/a- ‘carry’ < **b^hér-e/o-*, ^B*ak*-’ə/e-, ^A*āk*-’ä/a- < **h₂ég-e/o-* ‘drive’, we know that the category did exist in the proto-language ancestral to Tocharian. In order to prove a CIE innovation, it must be shown that individual CIE simple thematic presents are cognate with more archaic stems in Tocharian. In order to test this, I collected the simple thematic presents in the LIV (2001) corpus that are attested in three branches or more and had a root cognate in Tocharian. I investigated their stem pattern in the attested CIE languages and in Tocharian. The survey showed one verb that looks archaic in both stem formation and meaning: ^B*lank*-, ^A*länk*- ‘hang’ < **h₁leng^{wh}*; see 3.3.1. The other verbs in the survey either showed evidence of restructuring or had very productive stem patterns. In other words, it was not possible to prove an archaism on the part of Tocharian in most of the verbs treated.

An additional cladistic question which was relevant in both Chapter 3 and

Chapter 4 was the possibility that certain Proto-Indo-European roots had an inherent alternation between middle and active voice, expressing inchoative and causative meaning, respectively. The present stems to verbs that form *e*-subj.[3] and root prt.[o] in Tocharian show exactly this alternation and might therefore be interpreted as archaic. However, I argued in 3.7 that the voice alternation is an innovation in Tocharian, which came about through the (near-)merger of **e/o*- and **ie/o*-presents.

The fourth isogloss, treated in 4.5–4.6, combines elements of the first and the second. Jasanoff (1998; 2003: 224–7) proposes that the presigmatic aorist formed two competing subjunctive stems in the proto-language, a sigmatic and an asigmatic one. He bases this on the fact that Tocharian shows a stem pattern with a sigmatic present and a simple thematic subjunctive, while some verbs in the CIE languages have sigmatic aorists with a sigmatic subjunctive next to a simple thematic presents; the competing subjunctives have thus innovated differently in the two groups, according to him. If this theory can be substantiated in the Tocharian data, it would require us to reevaluate the evidence for the presigmatic aorist, and it would constitute a significant morphological innovation in CIE in its own right. The distribution of the Tocharian stem pattern, however, does not fit the hypothesis. By examining the verbs that form *ʾa/e*-subjunctives of class [2], I found a consistent correspondence between *s*-transitive verbs with the pattern [8 – 2 – 3] and verbs with oppositional intransitives with a pattern [3 – 5 – 1]. Within the **h₂e*-conjugation theory, these verbs belong to the stative-intransitive system and should therefore not have formed a presigmatic aorist in the proto-language. The distribution predicted by the presigmatic aorist theory is not found in the data and the isogloss thus cannot be upheld.

The fifth isogloss analysed in the thesis concerns the status of the Proto-Indo-European **nt*- and **mh₁nó*-participles in Tocharian (Chapter 5). For the most part, the Tocharian reflexes of these two suffixes do not show any affinity with active and middle voice unlike in the CIE languages. Since the Anatolian reflex of the **nt*-participle has subject-patient orientation, and the **mh₁nó*-participle may only recently have been grammaticalised as a participle, it is possible that Tocharian shows an archaic state from before the two participles were paradigmatically linked to the diathesis of the finite verb. To test this hypothesis, I collected those Tocharian verbs that show a semantic difference between active and middle and attest one or both of the relevant formants: the productive agent noun ^B-*ñca*, ^A-*nt* and the present participle ^B-*mane*, ^A-*māṃ*. The number of forms is not large, but the results are relatively clear. In verbs with inchoative-causative alternation, the *m*-participle is associated with the meaning of the middle (with only one counterexample), while

the agent nouns express the causative meaning only (subsection 5.3.1). In other verbs with a semantic distinction, there is a correlation between active voice and forms in ^B-*ñca*, ^A-*nt*, as well as between the middle voice and the *m*-participle in phrasal constructions (5.3.3). There are thus traces in the Tocharian data of a stage where the **nt*- and **m*-participles were affiliated with active and middle voice, respectively, which is consistent with the use of these participles in the CIE languages. We may thus conclude that Tocharian does not show an archaism compared with the CIE languages in the **nt*- and **mh₁nó*-participles.

Finally, in Chapter 6, I address the potential isogloss of the optative to thematic stems in Tocharian. In CIE, we find a suffix **-oih₁-* that seems to comprise the *o*-grade of the thematic suffix and the zero-grade of the athematic optative suffix **-ieh₁/ih₁-*. In Tocharian, optatives to thematic stems are formed with the suffix **-ʼəy-*, which looks like the continuation of the athematic suffix **-ih₁-*. Potentially, the CIE thematic optative is thus a later creation. On the face of it, this isogloss seems to hold up; thematic stems show **-ʼəy-* and no signs of an earlier state **-ey- < *-oih₁-*. However, using both internal and forward reconstruction, I have shown that there are numerous problems relating both to the Tocharian optative and to the imperfect in Tocharian B (which is formed with the same suffix). The thematic stems are not the only stems that are missing a stem-forming vowel in the optative. This is also the case for optatives to *e*-subjunctives of class [3], which is actually expected diachronically, since the Proto-Indo-European optative was not built on the subjunctive stem. It is possible that the optative could have been extracted from athematic stems and added to the *ʼə*-formant of the thematic suffix, or—more speculatively—the suffix **-oih₁-* itself could have developed to **-əy-* in final position. In any case, the system seems to have undergone such an intense regularisation that it is not possible to establish an archaic state for Tocharian with respect to this isogloss.

Thus, the results of the cladistic research in this thesis are overall negative. For two isoglosses, the *s*-preterite and the thematic optative, an archaism cannot be positively ascertained and, as the further diachronic analyses show, a simpler analysis is possible if we accept that Tocharian aligns with CIE. The same is mostly true for the simple thematic present with the notable exception of the root present to the root **h₁leng^{wh}-* ‘be light’, which looks morphologically and semantically archaic in Tocharian. For the competing subjunctives theory and the **nt*- and **mh₁nó*-participles, analysis of the Tocharian data disproves the potential archaism outright. See Table 7.1 for the combined evidence for the Tocharian Second hypothesis as it currently stands.

Table 7.1: Isoglosses in favour of the Tocharian Second hypothesis

	archaic state		innovative state	
'drink'	<i>*h₁eg^{wh}-</i>	^B yok-, ^A yok-, Hitt. <i>eku</i> - ^{zi}	<i>*peh₃-</i>	a.o. Ved. <i>píbati</i> , Gk. πίνω, Lat. <i>bibō</i> , OCS <i>pitъ</i>
<i>*uīHró-</i>	adj. 'young/ strong'	^A wir	subst. 'young/strong man, hero'	a.o. Ved. <i>vīrá-</i> , Lat. <i>vir</i> , Got. <i>wair</i> , Lith. <i>výras</i>
<i>*h₁leng^{wh}-</i>	root prs. 'be light'	^B lank-, ^A lānk- 'hang'	<i>*e/o</i> -present 'move lightly'	Ved. <i>rámhate</i> , YAv. <i>rənjaiti</i> , OIr. <i>-ling</i> , <i>-lengat</i> , OHG <i>gilingan</i>
untreated/uncertain				
? PE mid. marker	<i>*-r</i>	Toch., Hitt., Ital., Celt., Phryg.	<i>*-i</i>	IIr., Gk., Gmc.

For the isoglosses in Table 7.1, the simplest analysis is that Tocharian has retained an archaic state and that the CIE languages have innovated. The question is whether those three isoglosses on their own are strong enough to posit an early separation of the Tocharian branch. Without more substantiating evidence, we may conceive of ways in which the isoglosses could have come about without shared innovation excluding Tocharian. Although it would require some additional assumptions, it is possible that the root **peh₃-* in the meaning 'drink' was lost in Tocharian, and the root **h₁eg^{wh}-*—possibly with a related but slightly different meaning—took its place. Likewise, if one is unwilling to accept the development **ih₁C > *ayC*, or find the semantic gap between 'strong, eager, vital' and 'young' too wide, the etymological connection between **uīh₁ró-* and ^A*wir* should perhaps be reconsidered. Alternatively, it is conceivable that **uīh₁ró-* underwent backmutation in Tocharian, i.e., it was inherited in the meaning 'vital, strong man' which developed into 'young man' in (pre-)Proto-Tocharian and was reanalysed back to an adjective due to influence from other inherited **ró*-adjectives. In **h₁leng^{wh}-*, it is possible that the **e/o*-present and dynamic meaning developed independently in Indo-Iranian, Celtic, and Germanic. Both of these scenarios require more necessary assumptions than assuming shared CIE innovation, but they are plausible enough to account for the two isoglosses if

actual counterevidence to the Tocharian Second position should be found. Since the cladistic aim of the dissertation was limited to the Tocharian Second hypothesis, I do not wish to speculate about such possible counterevidence or make inferences about other cladistic relationships Tocharian may have had. This should be a topic for future research.

7.2. Results in Tocharian historical morphology

Whereas the cladistic results of this thesis were negative, the detailed analysis and interpretation of the isoglosses in question have led to several new insights about Tocharian historical morphology.

In Chapter 2, there were some issues relevant to the development of the *s*-preterite regardless of one's opinions about the origin of the paradigm. One of these was the 3sg. ending in ^B-*sa*, ^A-*s* < PT **-sa*. Since both the presigmatic and sigmatic aorist theories posit an ending **-st* for the 3sg. in the original paradigm, it was not completely clear why the vowel **-a* was introduced. By proposing that final **-t* was lost at different stages in pre-Proto-Tocharian depending on the preceding sound, I offer an explanation for this ending: consonant-final stems lost their 3sg. ending and were renewed with the ending **-at* from *a*-final stems (i.e. original **CeCH*-roots). In the *s*-preterite 3sg., this resulted in the creation of the ending PT **-sa*: **CēCst* > **C'eCs* → **C'eCsat* > **C'eCsa* (see 2.3.6). Although the proposed sound change cannot be independently substantiated with the current evidence, it is *a priori* plausible and has considerable explanatory power.

In 2.5–2.6, I propose that root structure became a decisive feature for the morphological patterning of the verbal roots, exactly because of the gradual loss of final **-t*. Former root aorists to **CeCH*-roots kept their ending in the preterite 3sg., pre-PT **C'əCat*, whereas it was lost in **CeC*-roots, pre-PT **C'əCt* > **C'əC*. This led to the introduction of **-at* into the latter, like in the *s*-preterite. We can now understand why the vowel **-a* became such an important marker of the preterite in Tocharian. Root aorists to **CeH*-roots, on the other hand, developed into vowel-final stems, **CṼ-*, and as such kept their 3sg. ending intact initially. These seem to have been incorporated into the *s*-preterite, starting with roots in **Ceh₁-*, since the ablaut of these roots would merge with the ablaut of the *s*-preterite in the strong stem.

Looking systematically at the correspondences between CIE simple thematic presents and their root cognates in Tocharian in Chapter 3 reveals several interesting matters of reconstruction. Most important are the present stem formations of the

roots with inchoative-causative alternation which show, on the one hand, a totally regularised pattern in Tocharian and, on the other, a variation of similar stems in CIE, **e/o-* and **ġe/o-* presents, predominantly in Indo-Iranian. This is especially interesting when we consider that the verbs in question look archaic within Tocharian. In the present in Tocharian B, the semantic alternation is expressed only through voice, and the intransitive preterite and subjunctive are formed with rare stem classes that are limited to these specific verbs (TA root prt.[o], TB *e*-grade s-prt.[3] middle, TA and TB *e*-sbj.[3] with the suffix ^B*-e-*, ^A*-a-*). I propose in 3.7.2 that the key to understanding this situation is the fact that the **e/o-* and **ġe/o-* presents, found in the CIE languages, would merge to a large extent in Tocharian, causing diathesis to become the distinguishing feature between inchoative and causative meaning.

These results in Chapter 3, as well as the findings of Chapter 2, informed the discussion in the first sections of Chapter 4. Accepting that the voice alternation in the verbs of the type ^B*nək-*, ^A*näk-* is innovative, we can better understand the inchoative-causative alternation in the preterite and subjunctive. In these stems, it is expressed with stem alternation as well as voice alternation. I propose that the verbs exerted mutual influence on each other, because of their similar semantics and their root structure. This explains the high regularity in this group of verbs.

Chapter 4 also comprises a study on a different type of inchoative-causative alternation, i.e. the one expressed with the intransitive stem pattern [3 – 5 – 1] and s-transitive [8 – 2 – 3]. First of all, I try to demonstrate that the s-transitive pattern [8 – 2 – 3] is with our current knowledge exclusively found to roots of the structure *CəRC-* and *CəWC-*. I propose that the pattern [8 – 2 – 3] was secondarily productive in verbs with these structures, while the more widespread pattern [8 – 1 – 3] can be considered the primary descendant of the pattern [9 – 1 – 3], forming transitive verbs in (pre-)Proto-Tocharian.

Secondly, it is noteworthy that *nək*-type verbs and the *e*-prs.[3] verbs share many features, especially in their stem formation. Combining these insights, I argue that semantics and root structure played an important role in limiting the productivity of the *nək*-type and establishing the *e*-prs.[3] pattern—and later the *o*-prs.[4] pattern—as the productive intransitive stem pattern. These hypotheses are difficult to test, and thus difficult to verify, but they are internally coherent and consistent with the Tocharian as well as the Indo-European comparanda.

Using forward reconstruction has proven to be a useful tool; see e.g., 3.4.2. In Chapter 3, I explain the highly unusual stem pattern of ^B*māyta-*, ^A*māytā-* ‘set out, go, come’ that combines an *e*-prs.[3] and an *a*-sbj.[5] with an s-preterite of class [3], as the outcome of confusion, resulting from laryngeal-colouring on the thematic vowel:

PIE **meiθ₂-e/o-* > **mayta-/mayte-*. The forms with the **e*-suffix were reanalysed as forms of *e*-prs.[3], while the forms with the **a*-suffix were interpreted as *a*-subjunctives of class [5].

An even clearer case of the usefulness of forward reconstruction is found in Chapter 5. After determining that the **nt*-participle goes back to the active **nt*-participle of the CIE languages (5.3), it was extremely helpful to project the expected paradigm into Tocharian when forming the hypothesis of its subsequent development. It became clear that the variety of agent noun suffixes in Tocharian B corresponded phonologically with the outcomes of various forms of the expected paradigm of an inherited **nt*-stem. From this insight, I was able to argue that the occupational suffix in ^B*-ntsa*, ^A*-nts** descends from the feminine singular. This conclusion is supported by the synchronic data, since several of the attested occupational nouns were related to traditionally feminine professions. The difference between the agent noun ^B*-nta* and the productive agent noun/participle ^B*-ñca* can be attributed to innovation in Tocharian B with the agent nouns in ^B*-nta* corresponding formally to the productive agent noun/participle in ^A*-nt* and continued only in lexicalised relics.

In Chapter 6, the results relating to historical grammar are less clear, because the system is so thoroughly regularised that internal reconstruction is difficult. One result, although slightly speculative, is that the lack of palatalisation in the optative and Tocharian B imperfect suffix, which correlates with *a*-final stems, could be due to a laryngeal-effect preventing palatalisation (6.6.1–6.6.2).

Overall, the results of this thesis show that underneath the thick layers of sound change and morphological restructuring, the Tocharian verbal system is to a large degree consistent with grammatical categories and features of the classical Indo-European languages.

7.3. Reflections on the position of Tocharian

What are the consequences of these results for the position of Tocharian in the broader perspective? First of all, it is my firm belief that the Tocharian Second hypothesis is not (yet) solid enough to support an application of the cladistic approach to reconstruction; see 1.2.5. At present, scholars of Indo-European linguistics should be cautious of invoking Tocharian Second as an assumption in their diachronic analyses.

As discussed in the introduction (1.1), the Tocharian Second hypothesis is

consistent with the identification of the Afanas'ev culture of southern Siberia as the secondary homeland of the Tocharian branch; see Kroonen, Barjamovic & Peyrot (2018: 8). However, even if the evidence for the Tocharian Second is deemed insufficient, it will not have detrimental effects on the validity of the Afanas'ev hypothesis. First of all, it is important to keep the old adage in mind that absence of evidence is not evidence of absence. It is possible that speakers of what became the Tocharian languages migrated from the (pre-)Yamnaya heartland to settle in the Afanas'ev area early without this leaving evidence in the linguistic data. The two cultures overlap chronologically, show strong cultural similarities, and are, generally speaking, genetically indistinguishable (Anthony 2013; Allentoft et al. 2015; Narasimhan et al. 2019; Honeychurch et al. 2021). Under these circumstances, it is possible that the two groups were linguistically very close as well. Recent results from Zhang et al. (2021: 258) find a genetic legacy from Afanas'ev in individuals in the Dzungaria Basin, showing that there was some southward movement of Afanas'ev people and lending support to the identification of Tocharian speakers with the Afanas'ev culture.

Nevertheless, there is no proof that the people of Afanas'ev spoke Tocharian. If they spoke an Indo-European language—which seems highly likely—it could have been a dialect we do not (yet) know. The next crucial step for the question of the Tocharian secondary homeland must therefore be the search for evidence tying the language to something tangible and geographically bound.

One such method is to investigate prehistoric contact between Tocharian and other languages that can be placed geographically with reasonable approximation. The recent work showing prehistoric contact with Iranian languages is an example of this; see Dragoni (2023) on contact with the Tumshuqese-Khotanese branch of Iranian, and Bernard (2023) on contact with the unattested Old Steppe Iranian language and a BMAC language. Bernard (2023: 249–53) proposes that the contact between Tocharian and these prehistoric languages took place to the north of the Tarim Basin, which would be consistent with a move downwards from southern Siberia. If prehistoric contact with Uralic languages, in particular Samoyed, can be proven, it would show that the Tocharians indeed crossed through Siberia. This may lend additional credence to the Afanas'ev hypothesis, although it is difficult to reconcile the early date of the Afanas'ev culture with the relatively late date of Proto-Uralic, let alone (pre-)Proto-Samoyed; see Peyrot (2019b) and Warries (2022b).

Another method of linking language to geography is by matching vocabulary of material culture to the archaeological record, i.e., through the method of palaeolinguistics; see Carling (2024: 124–137). The work to elucidate the Tocharian

vocabulary has taken big strides in recent years (Carling, Pinault & Winter 2009; Ching 2010; Adams 2013; Carling & Pinault 2023), but studies with a focus on Tocharian material culture have been few and primarily concerned with agriculture and livestock (Pinault 1997; 2020; Ching 2016; Peyrot 2018a). It was recently argued that the lack of evidence for agriculture in the Afanas'ev culture matches poorly with the presence of a few inherited terms for farming, the most important of which is ^A*āre* 'plough' < **h₂erh₃-* 'plough' (Kroonen et al. 2022: 33). This claim must be investigated further, along with many other semantic fields pertaining to material culture. Reconstruction of social and political structures may also yield valuable information; see e.g., Olsen (2019). Therefore, in addition to the study of linguistic contact between Tocharian and the languages of central Eurasia, the future of Tocharian prehistory may lie in the palaeolinguistic realm.

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Bibliographic abbreviations

CEToM = *A Comprehensive Edition of Tocharian Manuscripts* <https://cetom.univie.ac.at/>

IDP = *The International Dunhuang Project: The Silk Road Online*, <http://idp.bl.uk/>

LIV = Rix & Kümmel 2001.

TITUS = *Thesaurus Indogermanischer Text- und Sprachmaterialien*,
<https://titus.fkidg1.uni-frankfurt.de/texte/tocharic/>.

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Samenvatting

De Tochaarse tak van de Indo-Europese taalfamilie bestaat uit twee uitgestorven talen, Tochaars A en Tochaars B, die beide in het eerste millennium van onze jaartelling werden gesproken in het noorden van het Tarimbekken, in de huidige regio Xinjiang in Noordwest-China. Vanaf het moment dat het Tochaars werd herontdekt, in het begin van de twintigste eeuw, hebben deze twee talen, evenals hun sprekers en hun taalkundige voorgeschiedenis, onderzoekers gefascineerd. In de afgelopen dertig jaar zijn er steeds meer voorstanders gekomen van het idee dat het Tochaars de tweede tak was die zich van de Indo-Europese oertaal heeft afgesplitst, de zogenaamde *Tocharian Second*-hypothese. Er is echter weinig consensus over de vraag welk bewijs kan worden aangedragen om deze hypothese te ondersteunen. Dit proefschrift onderzoekt potentieel bewijs voor de *Tocharian Second*-hypothese uit het domein van de verbale morfologie.

De cladistische methode die in dit proefschrift wordt gebruikt is gebaseerd op de comparatieve methode, de hoeksteen van de historische taalkunde. Door middel van de comparatieve methode is het mogelijk om te bepalen of talen verwant zijn. Met behulp van de cladistische methode kan worden vastgesteld hoe nauw de verwantschap is tussen verschillende talen van een taalfamilie. Hiervoor moeten kenmerken worden geïdentificeerd die voorkomen in sommige, maar niet in alle talen van een taalfamilie: zogeheten isoglossen. Isoglossen kunnen alle taalkundige domeinen betreffen en bijvoorbeeld lexicaal, fonologisch, morfologisch of syntactisch zijn. Als kan worden vastgesteld dat een bepaalde isoglos het resultaat is van een gemeenschappelijke innovatie, is dit een bewijs dat de talen die deze isoglos delen een subgroep vormen, een kleinere taalfamilie binnen de grotere taalfamilie.

Als bewijs voor de *Tocharian Second*-hypothese zijn gemeenschappelijke innovaties vereist van alle takken van het Indo-Europees met uitzondering van het Tochaars en van het Anatolisch, dat volgens deze hypothese als eerste is afgesplitst. De meeste isoglossen die zijn voorgesteld ter ondersteuning van de *Tocharian Second*-hypothese zijn lexicaal of morfologisch. Voor het merendeel van de voorgestelde lexicale isoglossen kan echter niet met zekerheid worden vastgesteld of het Tochaars archaïsmen vertoont vergeleken met een gemeenschappelijke innovatie van de rest van de Indo-Europese talen, het zogeheten *Core Indo-European*. Er wordt vaak aangenomen dat het bij morfologische isoglossen eenvoudiger is om vast te stellen of *Core Indo-European* een gemeenschappelijke innovatie heeft ondergaan. Veel van de voorgestelde morfologische isoglossen komen uit het domein van het werkwoord, dat in de Tochaarse grammatica relatief archaïsch is.

Een bepaalde groep Tochaarse werkwoorden wordt vaak aangemerkt als bij uitstek archaïsch, aangezien ze specifieke morfo-semantiche eigenschappen vertonen: het actief is causatief, bijv. ‘vernietigen’ of ‘(iets) verbranden’, terwijl het medium inchoatief is, respectievelijk ‘ten onder gaan’ of ‘branden’. Van deze werkwoorden is de stamformatie ook opmerkelijk: de mediale stammen van het preteritum en de conjunctief komen nergens anders in het verbale systeem voor. Daarnaast worden de actieve stammen van deze werkwoorden gevormd volgens specifieke sigmatische stamformaties. Een groot deel van dit proefschrift is gewijd aan een historisch-taalkundig onderzoek naar deze stampatronen. Er wordt betoogd dat het grootste deel van deze specifieke patronen kan worden verklaard uit secundaire ontwikkelingen in het Tochaars, veroorzaakt door zowel fonologische als morfologische veranderingen. De oorspronkelijke stampatronen die ten grondslag liggen aan deze groep Tochaarse werkwoorden zijn in overeenstemming met die van verwante werkwoorden in andere Indo-Europese talen, met name in het Indo-Iraans. Deze groep werkwoorden levert dus geen bewijs voor de *Tocharian Second-hypothese*.

Twee andere isoglossen die eerder zijn voorgesteld betreffen de zeldzaamheid van geërfde simpele thematische presentia in het Tochaars en de afwezigheid van het thematische optatiefmorfem **-oih₁-*. Beide isoglossen blijken niet bewijskrachtig te zijn, aangezien productieve patronen in zowel het Proto-Tochaars als in Tochaars A en B eventuele archaïsmen onherkenbaar hebben overdekt.

De laatste isoglos betreft de Proto-Indo-Europese participiale suffixen **-nt-* en **-mh₁no-*, waarvan de Tochaarse cognaten ogenschijnlijk niet verbonden zijn aan respectievelijk het actief en het medium, anders dan in *Core Indo-European*. Dit proefschrift laat echter zien dat in archaïsche werkwoorden en werkwoordsfrases het gebruik van beide participia wel degelijk overeenkomt met de diathese van het finiete werkwoord. Het feit dat het gebruik van deze participia synchroon over het algemeen niet door de diathese van het finiete werkwoord wordt bepaald is dus een innovatie van het Tochaars en geen archaïsme.

In het gehele proefschrift wordt slecht één isoglos in het verbale systeem als potentieel archaïsme aangemerkt: het wortelpresens van Tochaars B *lānk-*, Tochaars A *lānk-* ‘hangen’, dat contrasteert met een simpel thematisch presens in *Core Indo-European*. Ook in het domein van de werkwoordsmorfologie is er dus bijzonder weinig bewijs voor de *Tocharian Second-hypothese*. Dit betekent niet dat de hypothese direct verworpen moet worden, maar voorzichtigheid is geboden en de hypothese kan voornog niet zonder meer voor waar aangenomen worden.

Curriculum vitae

Louise Skydsbjerg Friis was born in 1992 in Værløse (Denmark). She graduated from Gladsaxe Gymnasium in 2011. In 2012, she started a BA in Indo-European Linguistics at the University of Copenhagen with a minor in Akkadian and Inuit Studies. During the BA, she developed an interest in Anatolian languages and wrote her BA thesis on the phylogenetic position of Lydian within Anatolian in 2016. She started the MA in Indo-European Linguistics in Copenhagen that same year, exploring her interests in Anatolian languages, the branching of the Indo-European family tree and verbal morphology. In spring 2017, she spent a semester at the Department of Linguistics at Harvard University (Massachusetts, USA) under the supervision of Jay Jasanoff. Her MA studies culminated in a 2018 Master's thesis titled "The sigmatic aorist and Hittite", supervised by Birgit A. Rasmussen (Olsen), which earned a gold medal in the prize paper competition at the University of Copenhagen as well as the first prize for Master's theses from the Society for Indo-European Studies.

From 2019 to 2024, she was employed as a PhD candidate at the Leiden University Centre for Linguistics for the ERC-funded project *The Tocharian Trek* led by Michaël Peyrot, working on the phylogenetic position of the Tocharian branch within Indo-European. During this period, she taught courses in the Indo-European track of the BA and MA Linguistics, presented at several international conferences such as the International Conference of Historical Linguistics in Oxford in 2022, and helped organise seminars and conferences, including the 2022 Arbeitstagung der Indogermanischen Gesellschaft "The secondary homelands of the Indo-European languages". Currently, she is employed as a university lecturer at Leiden University.