Leiden University – Faculty of Humanities

Uralic influence on the Tocharian agglutinative case system

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Abbreviations of languages

Alb.	Albanian	OLith.	Old Lithuanian
EnF	Forest Enets	PBSl.	Proto-Balto-Slavic
Goth.	Gothic	PCelt.	Proto-Celtic
Gr.	Greek	PIE	Proto-Indo-European
Hitt.	Hittite	PSmy.	Proto-Samoyedic
IIr.	Indo-Iranian	PT	Proto-Tocharian
Kam.	Kamas	PU	Proto-Uralic
Lat.	Latin	Skt.	Sanskrit
Lith.	Lithuanian	SlkC	Central Selkup
Mat.	Mator	SlkN	North Selkup
NenF	Forest Nenets	SlkS	South Selkup
NenT	Tundra Nenets	TA	Tocharian A
Ngan.	Nganasan	TAB	Tocharian A and B
OCS	Old Church Slavonic	TB	Tocharian B
OEng.	Old English	W	Welsh
OIr.	Old Irish		

Abbreviations of grammatical terms

1	first person	INSTR	instrumental
2	second person	IPV	imperative
3	third person	PL	plural
ABL	ablative	SG	singular
ACC	accusative	PRS	present
ADV	adverbial (marker)	LAT	lative
ALL	allative	LOC	locative
AOR	aorist	NOM	nominative
COM	comitative	OBL	oblique
COND	conditional	PERL	perlative
CVB	converb	POSS	possessive
DEF	definite	PRD	predestinative
DISTR	distributive	PROL	prolative
DUR	durative	PST	past
EP	epenthetic element	REFL	reflexive
EXCL	exclamation	SG	singular
FUT	future	TRA	translative
GEN	genitive		

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1 Introduction

Two languages known as Tocharian A (TA) and Tocharian B (TB) were once spoken in the Tarim Basin in Northwestern China. They are unproblematically classified as Indo-European languages, forming their own Tocharian branch. This means that the Tocharian A and B descend from Proto-Indo-European via their reconstructed immediate ancestor Proto-Tocharian (PT). Tocharian displays a number of striking deviations from Proto-Indo-European typology, however. One of these deviations can be found in the nominal case system, in which a number of agglutinating elements are used, in contrast to the fusional case endings of other early Indo-European languages. The Tocharian case system furthermore includes the non-Indo-European cases perlative and comitative. Confronted with these observations, the question arises how this situation arose.

In this thesis, I will look into the hypothesis that influence from Uralic languages left its mark on the Tocharian case system. In particular, I will investigate the possibility that the early case system of the Samoyedic branch of Uralic provided the model on which Tocharian was reshapen. I will provide the background to the problem in chapter 1, and there I will also introduce the methodology used to determine whether prehistoric language contact occurred. In chapter 3, I will discuss the Tocharian agglutinative case system in more detail, moving from synchrony to diachrony, and in chapter 4 I will take a similar approach to the local cases of the Samoyedic languages (4.1-3). I will make the comparison between the Tocharian and Samoyedic systems in chapter 5, followed by my final conclusions and a discussion in chapter 6.

2 Background

This first chapter is intended to provide the necessary background information to the problem at hand, as well as a justification for the current investigation. I will start with a very brief account of the Tocharian migration hypothesis (2.1), followed by a more elaborate introduction to the peculiarities of the Tocharian case system and the question of external influence as an explanation (2.2). After a summary of the linguistic signs that point to contact between Uralic and Tocharian (2.3), I will give an overview of the Uralic language family, paying special attention to the Samoyedic branch and the possibilities of contact with Tocharian (2.4). At the end of this introductory chapter I also introduce the methodology I will adhere to in my attempt to find out whether the Tocharian case system was influenced by Samoyedic (2.5).

2.1 Tocharian far from home

Sources of the two closely related Indo-European languages Tocharian A and Tocharian B were found in the Tarim Basin in Xinjiang, Northwest China, dating to around 500-1000 AD. Since there is mounting evidence from linguistics, archaeology and genetics that the Indo-European homeland was located in the steppe region north of the Black Sea, the Tocharians must have migrated from there to the Tarim Basin in some way (e.g. Anthony 2007; Mallory 2015). The Afanasievo culture (ca. 3300-2500 BC) of the Minusinsk Basin and the Altai Mountains has been associated with an Indo-European migration from the steppes, and genetic data so far supports a connection. As such, the Afanasievo culture has been hypothesised to represent the early Tocharians before their migration southward to the Tarim Basin. The earliest archaeological indication of possibly Tocharian presence in that area is represented by the Xiaohe horizon, starting around 2000-1800 BC, although a connection with the Afanasievo is still very uncertain (Mallory 2015: 31-32, 37-51, 48).

Despite increasingly precise information from archaeology and especially genetics in recent years, the exact migration route of the Tocharians remains doubtful, and the possibility that the Afanasievo culture or the Xiaohe horizon (or both) represent some other non-Tocharian group cannot be excluded. The linguistic evidence supports Tocharian presence in the Tarim Basin only starting from the final centuries BC, based on loanwords to and from early Chinese and Turkic (e.g. Lubotsky & Starostin 2003). Before that time the interaction between Tocharian and other languages is as yet largely unclear, although ancient language contact has often been proposed in order to explain the particularly non-Indo-European features of Tocharian, especially when it comes to the nominal case system.

2.2 Tocharian nominal inflection and the question of substrate influence

The Tocharian case system is divided into so-called "primary" cases (nominative, oblique, genitive and (TB) vocative) and the "secondary" cases (allative, locative, ablative, perlative, comitative, (TA) instrumental and (marginal TB) causal). Tocharian case inflection is thus quite elaborate, but only four cases that can be considered the descendants of the eight, possibly nine cases reconstructed for Proto-Indo-European: the nominative, accusative (called "oblique" in Tocharian), genitive and vocative. The dative disappeared as a separate case, but it provided the genitive form of some nouns.[1] There may be some traces of locative forms, but the other non-grammatical cases ablative,

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[1] The Tocharian genitive case combines both genitive and dative functions.

instrumental, and allative[2] were lost at some point during the prehistory of Tocharian. After this reduction of the case system, Tocharian innovated new cases in the period leading up to Proto-Tocharian, and continuing in the individual languages A and B (e.g. Carling 2000: 381-383). The newly formed Proto-Tocharian cases were not merely functional replacements of those lost in pre-Proto-Tocharian, however. In particular, the perlative and the comitative are striking, since these cannot be reconstructed for Proto-Indo-European, nor are they common as later innovations in other members of this language family. With the addition of these two cases, the Tocharian system conforms well to Anderson's characterisation of Central Siberian case systems, where the presence of a perlative case[3] and a separation of instrumental and comitative functions are common, at least nowadays (Anderson 2006: 278-292).[4] The case systems of Proto-Indo-European, Tocharian and various other Indo-European languages are illustrated in the Table 1.

Table 1. An overview of the nominal cases in various Proto-Indo-European languages. ("+" indicates that the language has that particular case, and that it is inherited from PIE in at least some instances; "≠" indicates that the language has that case, but that it is not a continuation of the PIE case at all; "−" indicates that the case is absent.)

	PIE	Hittite	Sanskrit	Greek	Latin	Lithuanian (Old)	Tocharian A	B
nominative	+	+	+	+	+	+	+	+
vocative	+	+	+	+	+	+	−	+
accusative	+	+	+	+	+	+	+	+
genitive	+	+	+	+	+	+	+‡	+‡
dative	+	+	+	+	+	+	−	−
locative	+		+	−	−	+†	≠	≠
ablative	+	+	+	−	+	−	≠	≠
instrumental	+	+	+	−	−	+	≠	−
allative	+*	+	−	−	−	(≠)	≠	≠
adessive	−	−	−	−	−	(≠)	−	−
illative	−	−	−	−	−	(≠)	−	−
perlative	−	−	−	−	−	−	≠	≠
comitative	−	−	−	−	−	−	≠	≠
causal	−	−	−	−	−	−	−	≠

* Going by the Old Hittite case; restricted to adpositions and adverbs in the other Indo-European languages.

† The locative has become a part of the "inessive" case, characterised by an additional ending *-en.

‡ Some genitives are formally descended from Proto-Indo-European datives, e.g. TB *pātri* < PIE *ph₂-tr-ei*.

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[2] If this was an actual case in the Proto-Indo-European that Tocharian descends from.

[3] In most descriptions of Siberian languages this case is known under the names "prolative" or "prosecutive".

[4] Anderson also mentions an opposition between allative and dative cases as a third characteristic of Siberian case systems, but Pakendorf has noted that this seems to be mostly restricted to Tungusic, and is thus rather a specific feature of that language family (Pakendorf 2010: 715, 718).

The endings of the Tocharian secondary cases differ from the older Indo-European norm in that they are agglutinating elements, being added to the oblique form of nouns. For example, the same TA allative case ending *-ac* is added in both the singular *käṣṣin* 'teacher' → all.sg. *käṣṣin-ac* 'to the teacher' as well as in the plural *käṣṣis* → all.pl. *käṣṣis-ac* 'to the teachers'. The oblique forms on which these allatives are based, by contrast, show fusional inflection, with the *-n* in *käṣṣi-n* signifying both the oblique case and singular number and the *-s* in *käṣṣi-s* signifying oblique case and plural number. Furthermore, not all obliques are formed using just these two elements *-n* and *-s*. The same goes for the other primary cases, whereas the secondary cases, by contrast, all have a single, unchanging ending each.

Another characteristic of Tocharian nominal inflection is a phenomenon known as *Gruppenflexion* or "group inflection". This describes the optional use of only a single secondary case form[5] at the end of a phrase of multiple nouns, or when attributive adjectives are used with a noun in a secondary case. In Gruppenflexion, all elements before the final noun in the secondary case can be rendered in the oblique case; e.g. TA *kuklas yukas oṅkälmās-yo* 'with carts, horses, and elephants', where the single use of the instrumental ending *-yo* at the end applies to *kuklas* 'cart-OBL.PL' and *yukas* 'horse-OBL.PL', as well as to *oṅkälmās* 'elephant-OBL.PL' (after Krause 1951: 185-186; similar descriptions in e.g. Krause & Thomas 1960; Pinault 2008; Van Windekens 1979).

To explain these aberrant features of the Tocharian case system, some scholars have proposed influence from non-Indo-European languages. Schmidt lists the three features of Tocharian nominal inflection introduced above as "the main features caused by substrate influence": (i) agglutinating inflection; (ii) the enlargement of the local case system to include a locative, ablative, allative and perlative; and (iii) Gruppenflexion (Schmidt 1990: 195). However, not everyone agrees that these constitute innovations particular to Tocharian, or that ascribing them to language contact is warranted.

Starting with Gruppenflexion, Campanile (1990: 55-60) argues that the same syntactic feature is found as a marginal phenomenon in the other old Indo-European languages Vedic, Avestan, Hittite and Mycenaean as well, and should thus be considered an archaism; e.g. Vedic *navyasā vacaḥ* (instead of *vacasā*) 'with a newer word'. The only difference between the Vedic example and the Tocharian situation is that the oblique is used in Tocharian, rather than the bare stem as in Vedic. Campanile does not consider this an insurmountable obstacle, since according to him, the oblique can be seen as the synchronic stem form in Tocharian. The oblique would have replaced the stem as the unmarked form, without further changing this type of construction; cf. Vedic stem *vacas-* : instr. *vacasā* ~ TA obl. *kuklas* : instr. *kuklasyo* (Campanile 1990).

Thomas is unconvinced by Campanile's arguments for an archaic status of Gruppenflexion. He thinks that the Hittite example given by Campanile may be a mistake from a non-native scribe (ibid.: 227 fn. 11), and the status of the apparent Gruppenflexion occurring in the other languages is not agreed upon either. Thomas further argues that the use of the oblique case in Gruppenflexion cannot be explained by positing that particular case as the synchronic stem form, based on evidence from nominal compounds (Thomas 1994: 227-228). To be sure, Bernhard describes the formation of the first member of nominal compounds as using either a "primary stem", which represents the original stem protected from final apocope, or a "secondary stem", which is mostly identical to the nominative singular. Only those nouns that have an extended nominative singular with an extra *-e* use the oblique singular when they are the first member of a nominal compound (Bernhard 1958: 24-25). The use of the oblique in Gruppenflexion can consequently not be convincingly characterised as an archaism.

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[5] The genitive may also optionally partake in Gruppenflexion, meaning that only the last element of a sequence is marked as a genitive, while preceding elements like adjectives are in the oblique case.

Thomas, like Schmidt (1990) and Krause (1951), deems it most likely that the Tocharian development of agglutinating nominal inflection, including Gruppenflexion, was encouraged by language contact (Thomas 1994: 230).

Campanile specifically considered Tocharian Gruppenflexion an archaism, rather than an innovation caused by external influence, but he allows for the possibility that other aspects of Tocharian could still be explained as the result of external influence (Campanile 1990: 56). Some scholars, however, dismiss external influence as an explanation for the state of the Tocharian system of nominal inflection altogether. Kim (2012: 124-126), for instance, is very much opposed to the idea that the secondary cases of Tocharian would be the result of substrate influence. According to him, cases such as Vedic *pat-táḥ* 'from the foot' and Greek οὐρανό-θεν 'from heaven' "demonstrate that the expansion of adverbial morphemes to other nominal bases and reinterpretation as case-like markers with an adverbial (usually locational) sense was far from uncommon in older Indo-European languages, and hardly requires the assumption of contact with Uralic, Turkic, or any other non-Indo-European languages of an agglutinating type" (ibid.: 126).

Realising that agglutinating elements or tendencies are not alien to early Indo-European languages is certainly important, and it seems good to caution against positing substrate for any and all agglutinating features. However dismissing language contact as a possibility entirely is unwarranted. Writing on language contact and historical linguistic methodology, Thomason points out that it is not justified to say that contact origin of a certain feature can only be considered if no internal explanation is to be found at all. Rather, a solid contact explanation is preferable to a weak internal one, and the possibility that a change was brought about by multiple causes should always be kept in mind. Furthermore, it is not the case that contact-induced change is off the table if a similar change happened elsewhere outside of a (the same) contact situation, since it is not historically realistic to assume that contact-induced change is only responsible for changes that have never occurred elsewhere through internal causation (Thomason 2001: 91-92). The assumption that if a change happens for internal reasons in one language, it should always be the result of a similar, internal cause in every language is also incorrect. "Since even the most natural changes often fail to occur, it is always appropriate to ask why a particular change happened when it did" (Thomason & Kaufman 1988: 59).

If we broaden our view, we can see that the idea that agglutination in Indo-European languages is not limited to Tocharian. Another much-cited Indo-European language with an extensive and innovative case system is Ossetic, an Iranian language with nine cases. The Ossetic cases behave like agglutinating elements, similar to those of Tocharian, and it is likely that contact with Georgian played an important role in their genesis (Belyaev 2010: 311). Similarly, the presence agglutinative cases found in some New Indo-Aryan languages like Sinhala and Hindustani can be attributed to the influence of agglutinating Dravidian languages spoken in the same area (Krause 1951: 189; Kulikov 2012: 300), and the Old Lithuanian extended case system with the additional allative, adessive, illative and inessive (> Modern Lithuanian locative) has been attributed to the influence of Finnic languages, with their extensive local case systems (Kulikov 2012: 298-299).

Since the rise of agglutinating case systems in Ossetic, New Indo-Aryan, and Old Lithuanian can be understood by looking to other agglutinating languages in the vicinity, it is reasonable to suppose that the Tocharian agglutinating cases can be explained in terms of language contact as well. Several possible substrate languages have been suggested in the literature, prominently Uralic (e.g. Krause 1951) and Altaic/Turkic (e.g. Kulikov 2012). Only the former will be considered in this thesis, based on a number of other indications that early Tocharian was in contact with Uralic.

2.3 Signs of contact with Uralic

As discussed in section 2.2, the case system of Tocharian is unexpected within Indo-European, and influence from non-Indo-European has been repeatedly considered—but why make a comparison with Uralic specifically? In this section, I will argue that the choice to compare Tocharian with Uralic is not entirely frivolous, as there are quite a few parallels between the two language groups that hint at prehistoric contact. Some possible loanwords provide support for prehistoric contact between Tocharian and the Samoyedic branch of Uralic in particular. If there is a genuine connection, a better understanding of the linguistic prehistory of Uralic is crucial to gain a better view of the Tocharian migration (cf. 2.4).

2.3.1 Phonology

Kallio has investigated possible Uralic influence on the phonology of several Indo-European branches, and the Tocharian stops in particular may have been the result of a Uralic substrate. The Tocharian stop system stands out among Indo-European languages due to the absence of more than one manner of articulation: only fortis *T remains of the original three-way distinction *T, *D, *D^h in Proto-Indo-European. The loss of just one of these categories would not be so special, but, as it turns out, in Tocharian all three coalesce into a single series of voiceless stops (with the exception of *d > *ts). This rather dramatic reduction in the number of meaning distinctions that can be made using stops is unexpected from a language-internal point of view, and it is thus attractive to look for some kind of external cause. Since the Uralic stop system is characterised by a single series *p, *t, *k, it is a prime suspect if one frames what happened to the Proto-Indo-European stop system on the way to Tocharian in terms of language contact (Kallio 2001). Peyrot (fthc.) has also found parallels between the pre-Proto-Tocharian and pre-Proto-Samoyedic vowel systems.

2.3.2 Morphology and word formation

As discussed, Tocharian nominal morphology is partially agglutinating, and agglutination is also typical of Uralic languages; cf. e.g. Finnish *talo-ssa* : *talo-i-ssa* and Hungarian *ház-ban* : *háza-k-ban* 'in the house : in the houses'. Another similarity between Tocharian and Uralic is the presence of compounds consisting of two substantives, most strikingly TA *akmal* 'face' ← 'eye' + 'nose', which can be compared to Hungarian *orca* 'face' ← 'nose' + 'mouth' (Krause 1951: 195-197). In Tocharian, such compounds often consist of two near-synonyms, like TA *ñom-klyu* ~ TB *ñem-kälywe* 'glory' ← 'name' + 'reputation' (Schmidt 1990: 184-185). Bednarczuk further adduces the use of object clitics to the verb as a parallel to the so-called "objective" conjugation in certain branches of Uralic (viz. Samoyedic, Ob-Ugric and Mordvin), which generally marks the definiteness of the object (Bednarczuk 2015: 62). These semantics do not seem to be mirrored in the use of the Tocharian object clitics, however (cf. the description of the Tocharian object clitics in Krause & Thomas 1960: 162-163).

2.3.3 Loanwords

Finally, some loanwords have been proposed to have passed between pre-Tocharian and pre-Samoyedic in particular. Janhunen (1983) was the first to devote attention to such traces of contact between these two language groups, and he proposed to derive PSmy. *sejt³wə* '7' from the ancestral

form of TA *špät* ~ TB *șukt* 'id.', and PSmy. *wesä* 'metal, iron' from TA *wäs* ~ TB *yasa* 'gold'. Kallio is sceptical of both loan etymologies, and rejects a relation between PSmy. *sejt³wə* and pre-PT *septə* > PT *s'əpt* '7'. The Samoyedic word for 'metal, iron' could be related to Tocharian 'gold', but it would rather be a borrowing in the opposite direction, according to Kallio. This is because PSmy. *wesä* can be connected with e.g. North Saami *veaiki*, Finnish *vaski* 'copper' < PU *wäśkä*, which supports an earlier presence of this root in Uralic. The sequence *-śk-* of *wäśkä* is also inexplicable if PT *ẃəsa* or earlier pre-PT *wesa* is taken as a starting point. The Tocharian word furthermore does not have a fully convincing Indo-European etymology (Kallio 2004: 132-133; but see Adams 2013: 524 for a different analysis of the etymology of TB *yasa*). Kallio himself proposes a different loan etymology from Tocharian into Samoyedic, namely PSmy. *wẹn* 'dog' ← pre-PT *kʷёnə*, the oblique singular of *ku* 'dog', with simplification of the initial labiovelar (Kallio 2004: 133-135). Napol'skikh has published an article on several other proposed loanwords from Tocharian (or, with a lot more uncertainty, "para-Tocharian") into various Uralic languages. An example of a loanword into Samoyedic is PSmy. *menüjə* 'full moon' ← PT *meńe* 'moon' (Blažek apud Napol'skikh 2001: 371-372). The Samoyedic word is only found in the Nenets languages, so a more detailed analysis of the lexicon preserved in the individual Samoyedic idioms might yield further lexical items of Tocharian origin.

2.4 Uralic and Samoyedic phylogeny and prehistory

To understand how contact between Tocharian and Uralic is even possible, we must first get a better understanding of the Uralic languages and their prehistory. Nowadays, the Uralic languages are spread out over much of northern Eurasia, from Norway and Hungary in the west to the Taimyr Peninsula and along the Yenisei and Ob rivers of Siberia in the east. There are nine uncontroversial groups of Uralic languages: Saami, Finnic, Mordvin, Mari, Permic, Khanty, Mansi, Hungarian and Samoyedic. The Samoyedic branch will be the most important for the purposes of this thesis, based on the loanwords shared between this branch and Tocharian, and the likely position of the Proto-Samoyedic homeland (see 2.4.2).

The way in which the Uralic languages are related to one another has come under greater scrutiny in the last few decades, practically starting with Kaisa Häkkinen's article questioning the validity of the traditional Uralic *Stammbaum* (K. Häkkinen 1984). In 2.4.1, I will give an overview of some possibilities that are being explored, as well as where the Uralic homeland is thought to have been located. These are important matters when considering the possibility of prehistoric language contact between Tocharian and Uralic/Samoyedic (2.4.3).

2.4.1 The Uralic family tree and homeland theories

Uralic is traditionally split into a Finno-Ugric and a Samoyedic branch, with Samoyedic being regarded as an outlier within Uralic. After the break-up between Proto-Finno-Ugric and Proto-Samoyedic, the former is split into many more lower level branches: Finno-Permic, Finno-Volgaic, Finno-Mordvinic, and Finno-Saamic. A tree model of the traditional internal classification of Uralic is shown in Figure 1. Of the Ugric languages Hungarian, Khanty and Mansi, the latter two are grouped together as Ob-Ugric.
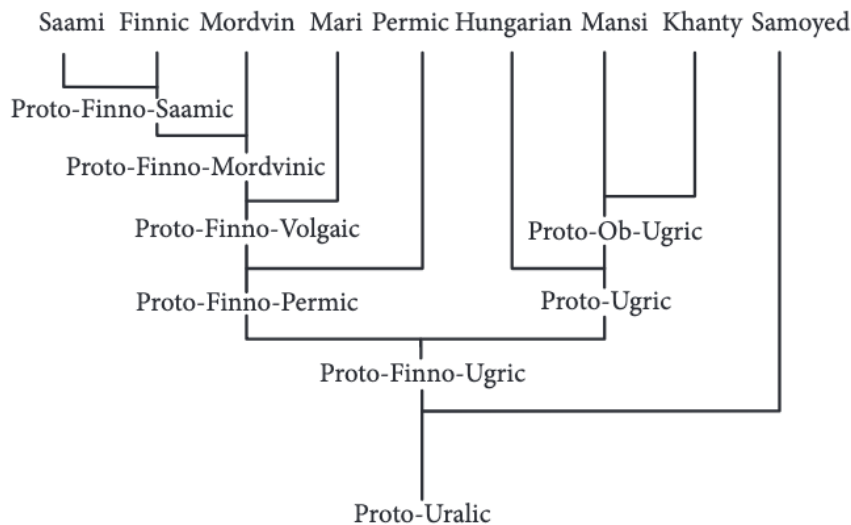
Figure 1: A traditional Uralic phylogenetic tree (image from Ylikoski 2011).

Since in this binary model the individual major branches get more closely related as one travels from east to west, it is natural to interpret this as the result of a migration of Uralic speaking peoples in the same direction. Whether the first split also involved movement in that direction, or whether Samoyedic moved eastward before Finno-Ugric started to disperse and break up on a westward trajectory, is uncertain (Janhunen 2009: 71-72). According to Kallio, the age of Proto-Uralic would be restricted on palaeolinguistic grounds by the shared terms for 'pot' PU *pata* and probably also *wäśkä* '(some type of) metal' to around 5000 BC at the earliest (2006: 5-9). The date that has been popular in the literature is around 4000 BC, although much earlier dates of 7000-5000 BC have also been proposed (cf. the overview in Kallio 2006: 2). Janhunen now prefers a date closer to 3000 BC (Janhunen 2009: 68).

As mentioned above, the family tree as presented in Figure 1 has come under scrutiny in the past few decades. In addition to Kaisa Häkkinen's scepticism regarding the adequacy of that model, Salminen (1999) has suggested that all nine branches be regarded as immediate descendants from Proto-Uralic, without intermediary lower level proto-languages. Similarities between branches would then be the result of language contact (cf. also Salminen 2007: 216-217). This is represented in Figure 2.
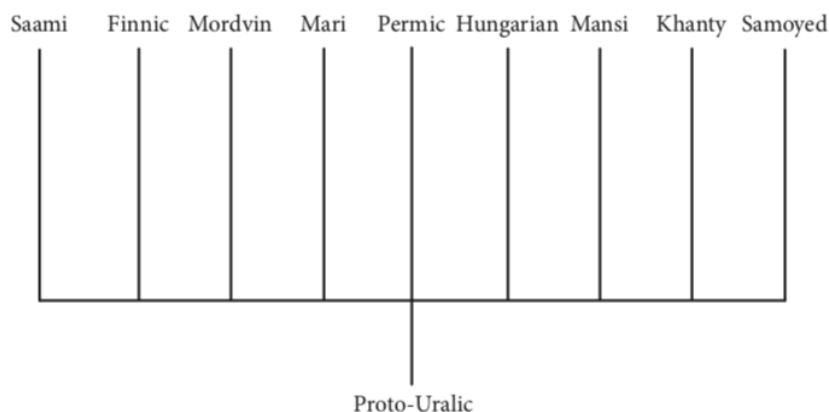

Figure 2: The Uralic phylogenetic tree as per Salminen's model (image from Ylikoski 2011: 238).

Jaakko Häkkinen (2007, 2009) has proposed an alternative subgrouping of the Uralic languages, based on phonological developments that appear to be shared between the Samoyedic and Ugric branches. Together these would form a "Ugro-Samoyedic" or Eastern branch, next to the familiar Finno-Permic or Western branch (cf. Figure 3). The most important developments that appear to be shared between the Samoyedic and Ugric branches are those of the sibilants: PU *s*, *š* > *$ł$*[6] > Samoyedic, Mansi *t*, Khanty *$ł$*, Hungarian Ø, and PU *ś* > Samoyedic, Mansi, Khanty, Hungarian [(*)]*s* (J. Häkkinen 2007: 71-78). Early loanwords from Indo-European also undergo these shifts (e.g. IIr. *ćata* → PU *śęta* > Hungarian *száz* '100' and IIr. *asura* → PU *asira* > Mansi *uuter*, *aater* 'lord'), which indicates that they only occurred after these words had been borrowed (so J. Häkkinen 2007; 2009). The presence of loanwords from early Indo-Iranian in Proto-Uralic already, rather than just in Proto-Finno-Ugric has important implications. If Proto-Uralic is indeed roughly contemporaneous with Proto-Indo-Iranian, that would change the date of the break-up of Uralic to ca. 2000 BC.
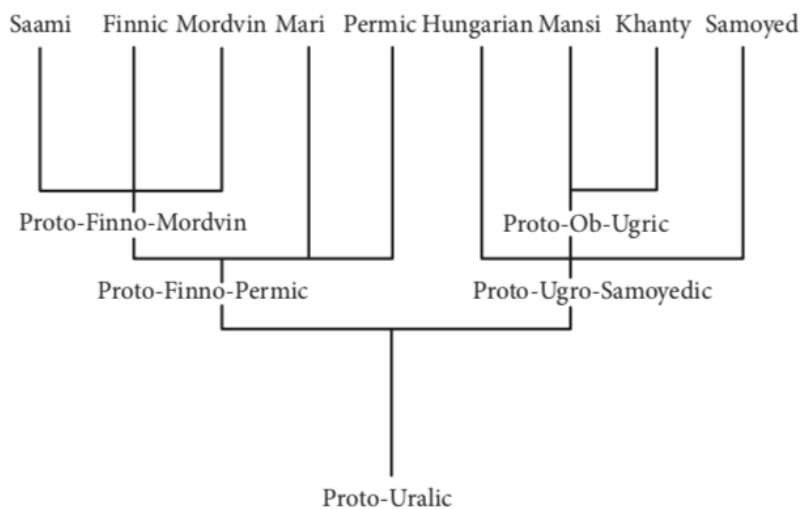
Figure 3: The Uralic phylogenetic tree according to J. Häkkinen 2007 (image from Ylikoski 2011).

Connected to the ongoing debate regarding the Uralic phylogenetic tree, there is no consensus regarding the Uralic homeland either. A homeland to the east of the Ural Mountains is supported by the direction of branching on the traditional family tree, with its primary split between Samoyedic and Finno-Ugric and overall westward branching structure, as well as by typological similarities between Uralic and Altaic (e.g. Janhunen 2001, 2009). On the other hand, A homeland to the west of the Ural Mountains fits better with the phylogeny proposed by Jaakko Häkkinen (2007, 2009), who supports a spread of Uralic from the Volga-Kama form (ibid.; cf. also Parpola 2013 for an archaeological scenario). Salminen (1999: 20-21) is also in favour of a homeland around the Volga, as his model entails a relatively rapid spread of Uralic both to the east and to the west. However, an earlier position of (pre-?)Proto-Uralic by the Yenisei and Lena rivers east of the Ural Mountains appears to be supported by early loanwords into Yukaghir (J. Häkkinen 2012). According to Häkkinen, the combination of loanwords in Yukaghir and indications for a later dispersal from the Volga region indicates that pre-Proto-Uralic migrated to the west of the Ural mountains around 3000 BC before splitting up in a western and an eastern branch, the latter of which moved to the east again (ibid.).

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[6] This sign represents a voiceless lateral approximate, like IPA [$ł$].

2.4.2 The Samoyedic languages

Samoyedic is thought to be a relatively shallow subbranch of Uralic, with Proto-Samoyedic being dated to the final centuries BC. There are six Samoyedic languages: Nganasan, Enets, Nenets, Selkup, Kamas, and Mator. The latter two languages are now extinct, and the rest are either critically endangered (e.g. Nganasan) or in a precarious position (e.g. Nenets). Nenets and Enets are both subdivided in Tundra and Forest varieties, and Selkup consists of a complex dialect continuum, often divided into Northern, Central and Southern Selkup (cf. Janhunen 1998: 457-458).

The relationship of the Samoyedic languages is usually described in terms of a main split between a Northern and a Southern Samoyedic branch, with a further Sayan Samoyedic group in the Southern branch (Figure 4). An alternative phylogeny in which Nganasan is the first out-group has been proposed as well (Figure 5), but no definitive consensus has yet been reached (Janhunen 1998: 458-459; cf. Wagner-Nagy 2019: 14-15). It remains useful to refer to the Samoyedic languages based on geographical location (northern vs. southern), and I will do this throughout this thesis, without taking a definite stance on the classification.
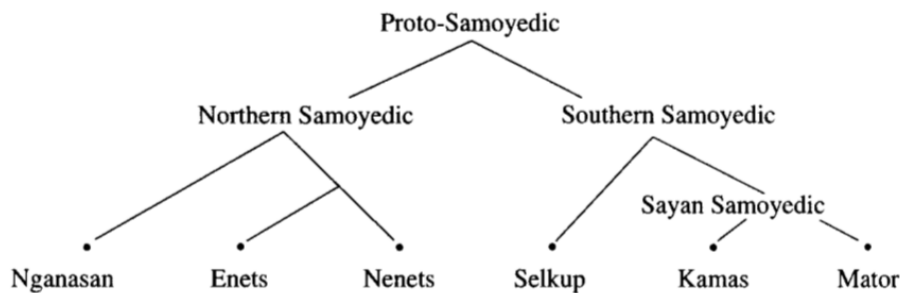
Figure 4: the traditional phylogeny of the Samoyedic languages (image from Janhunen 1998: 459).
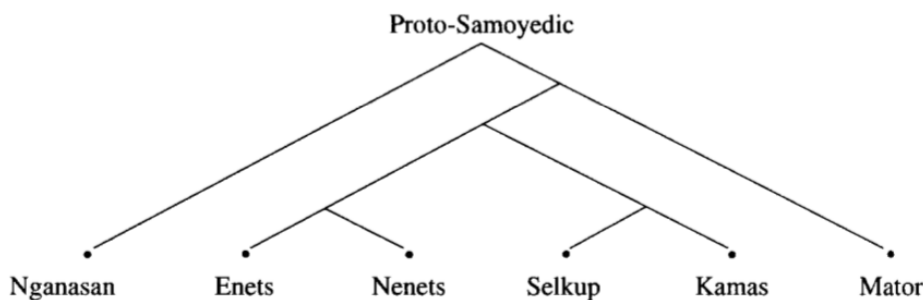
Figure 5: an alternative phylogeny of the Samoyedic languages (image from Janhunen 1998: 459).

According to Janhunen, pre-Samoyedic is likely to be located in the Minusinsk basin on the Upper Yenisei (Janhunen 2009: 72). From that area, Samoyedic groups later expanded both northwards along the Ob and Yenisei, and southwards to the Altai and Sayan Mountains (Janhunen 1998: 457). On the connection between languages and archaeological cultures of the Minusinsk Basin, Janhunen says that "[t]he historical distribution of the local ethnolinguistic groups strongly suggests that the dominant language in the Minusinsk basin before Turkic, that is, the language of the Tashtyk Culture [ca. 100 BC–400 AD], was Yeniseic (Proto-Yeniseic), while the dominant language before Yeniseic, that is, the language of the Tagar Culture [ca. 800-100 BC], must have been Samoyedic (Proto-Samoyedic)" (2009: 72). Janhunen (ibid.), as well as Parpola (2013: 166), point out that the remains of the

Afanasievo culture thought to be connected with the speakers of pre-Tocharian is likewise found in the Minusinsk basin, which could thus have been the site where interactions between pre-Tocharian and pre-Samoyedic took place.

2.4.3 Implications for possible Uralic-Tocharian contacts

It should be clear from 2.4.1 that the prehistory of Uralic remains uncertain. There is as yet no consensus on which model best describes the linguistic facts, or if there might even be other options that turn out fare better as insights advance. The uncertainty regarding Uralic phylogeny causes difficulties for the historical scenario according to which Tocharian could have been in contact with Uralic. If more support is found for Jaakko Häkkinen's model of Uralic phylogeny and migration hypothesis, for instance, that would mean that Proto-Uralic is moved away from the proposed contact area with Tocharian (Afanasievo Culture; Minusinsk Basin). Pre-Samoyedic would then only reach that region again at a time that Tocharian proper might already have moved south to the Tarim Basin (the Xiaohe horizon?). We would also have to allow some time for Samoyedic to undergo shared innovations with the Ugric languages, before being established as a separate branch. Even if this "Ugro-Samoyedic" protolanguage were to be spoken in an area close to pre-Proto-Tocharian, acceptance of Häkkinen's model would change what kind of Uralic language pre-Proto-Tocharian was in contact with, and accordingly, which languages should be used to gain access to the relevant linguistic pre-stage for the purposes of linguistic comparison.

At present, there is no reconstructed "Ugro-Samoyedic" proto-language to work with, however, so the next stage before Proto-Samoyedic remains Proto-Uralic by default. In this thesis, I therefore disregard such a subnode when discussing the reconstruction of the Proto-Samoyedic case system, and use a safer sequence from Proto-Uralic through pre-Proto-Samoyedic to Proto-Samoyedic down to the individual Samoyedic languages. The Samoyedic proto-language itself, dated to the final centuries BC, might well be too young to have been in contact with Tocharian, so a reconstruction of the pre-Proto-Samoyedic case system will be important for the comparison with Tocharian.

It might be important to stress that despite ongoing debate, a scenario in which Tocharian and Uralic or early Samoyedic where spoken in the same area remains a definite possibility. Solving the questions surrounding the dating, prehistory and phylogeny of the Uralic languages is well beyond the scope of this thesis, but if it turns out that the case system of Tocharian is another feature that points to contact with Samoyedic, that will be something to take into account in future research into the prehistory of both groups.

2.5 Methodology: contact-induced change and historical linguistics

A burning question still remains before we can start looking at the specifics of the Tocharian and Samoyedic case systems: how does one establish prehistoric language contact? Or rather, how can one argue that it occurred? Prehistoric language contact is only detectable when certain features of one language have changed due to the influence of another language. Thomason (2001: 91-95) has outlined how it is possible to tell whether contact-induced change has occurred, and what requirements should be met to make contact origin of a feature convincing. She writes that a claim for language contact is weak if it is based on a single linguistic feature: only if the supposed receiving language contains multiple instances of structural interference from the suspected source language can contact be a strong explanation for the linguistic facts. It is crucial to consider the language as a whole, because it is never only one subsystem that is affected, without any comparable interference

from the same source language in other subsystems (cf. also Thomason & Kaufman 1988: 60). Another consideration is that the interference feature does not always end up being incorporated in the receiving language in exactly the same way as it was present in the source language. Any account for the feature based on contact should incorporate a reasonable explanation for any reinterpretation or generalisation that has occurred, causing the feature to be different after transfer than before it (ibid.: 61-64).

To make a promising case for contact-induced change, then, one needs to additionally establish (i) what the source language was, and whether contact was intimate enough to allow for the source language to have had an influence on the receiving language, and (ii) that any structural features are in fact shared between the source language and the receiving language. Furthermore, it is important (iii) that the shared features were not present in the receiving language before contact, but (iv) that they were already present in the source language (Thomason 2001: 93-94).

Thomason (2001: 75) also stresses that the lexicon of the target language is not the domain that is first affected in the case of shift-induced interference. Instead, the structure of the phonology and the syntax are expected to be influenced by the original native language of a shifting population. "[I]n the majority of shift situations the most common interference features are phonological and syntactic, with vocabulary lagging behind" (ibid.: 80).

Turning to language contact and nominal case in particular, Kulikov[7] (2012: 298-300) has argued that the stability of the case system in a given language is to a large extent determined by the case systems of other languages in the same area. The mechanism by which new cases are formed and the structure of the case system can be borrowed from one language to the next as well.

The methodology of this thesis is informed by the considerations summarised above. An important point is that the absence of (a considerable number of) substrate words from Samoyedic in Tocharian does not exclude the possibility that the two groups were in (intensive) contact. If a significant group of Samoyedic speakers shifted to Tocharian, the expected traces of that shift would be structural, rather than lexical. Contact between Samoyedic and Tocharian would have taken place in prehistoric times, so how intimate this contact was cannot be established in a straightforward manner. This means this criterion cannot be tested for directly, and so we must settle for the fact that contact is historically possible based on likely migrations of the pre-Tocharian and the pre-Samoyeds (cf. 2.1, 2.4). Whether there was indeed contact between these groups is rather something that could be argued for more convincingly with further support of the linguistic evidence, and the more support is found, the more intimate the contact is likely to have been.

In order to determine whether the case system of Tocharian was indeed influenced by a Samoyedic substrate, I will investigate whether the uses of the individual cases match beyond just the label used for the case in grammatical descriptions, and whether the structures of the case systems are really parallel. In order to carry out this comparison, I will consider the reconstructions of the case systems for pre-Proto-Samoyedic and pre-Proto-Tocharian, so as to avoid making anachronistic claims regarding the direction of influence. Following Kulikov's analysis of the evolution of Indo-European case systems as seen from language contact, I will also compare the mechanism by which the Tocharian and Samoyedic case systems were formed. An account of the development of both case systems is therefore also necessary.

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[7] This article was brought to my attention by Andrew Wigman.

3 The Tocharian case system

As I explained in section 2.2, the Tocharian case system is divided into two types of cases: primary cases and secondary cases. The primary cases (nominative, oblique (accusative), genitive and (TB) vocative) are the grammatical cases, and they exhibit the fusional marking of number and case typical of Indo-European languages. Most of the secondary cases have local semantics, and they all are formed by agglutination of the relevant invariant suffixes to the oblique singular or plural (e.g. Krause & Thomas 1960: 78ff.; Van Windekens 1979: 165-168; Carling 2000: 1-2). This system is illustrated for both Tocharian A and B in Table 2.

Table 2. The paradigms of TA *yuk* and TB *yakwe* 'horse' (based on Gippert 1987: 23); the dotted line separates the primary cases from the secondary cases.

	Tocharian A		Tocharian B	
	singular	plural	singular	plural
nominative	*yuk*	*yukañ*	*yakwe*	*yakwi*
oblique	*yuk*	*yukas*	*yakwe*	*yakweṃ*
genitive	*yukes*	*yukaśśi*	*yäkwentse*	*yäkweṃts*
allative	*yuk-ac*	*yukas-ac*	*yakwe-ś(c)*	*yakweṃ-ś(c)*
locative	*yuk-aṃ*	*yukas-aṃ*	*yakwe-ne*	*yakweṃ-ne*
ablative	*yuk-äṣ*	*yukas-äṣ*	*yakwe-meṃ*	*yakweṃ-meṃ*
perlative	*yuk-ā*	*yukas-ā*	*yakwe-sa*	*yakweṃ-(t)sa**
comitative	*yuk-aśśäl*	*yukas-aśśäl*	*yakwe-mpa*	*yakweṃ-mpa*
instrumental	*yuk-yo*	*yukas-yo*	= perlative	

*The /t/ is epenthetic between the final /-n/ of the oblique and the initial /s-/ of the perlative ending.

In this chapter the functions of the secondary cases will be addressed (3.1), followed by a discussion of their origins (3.2).

3.1 The functions of the Tocharian cases

First I will treat the local cases present in both Tocharian languages (3.1.1-3.1.4), followed by the comitative (3.1.5) and the (TA) instrumental (3.1.6).[8] Tocharian A and B largely agree on the use of their cases, but some discrepancies may be of interest for our reconstruction of the Proto-Tocharian functions. The TB causal case (*-ñ*) is rather marginal, and derived from a genitive form (Krause & Thomas 1960: 90; Van Windekens 1979: 258-259), so it will not be considered here.

3.1.1 Allative

In earlier publications the allative (TA *-ac* ~ TB *-śc*) was called the dative, as it is often used to translate a Sanskrit dative in bilingual texts. In monolingual Tocharian texts the genitive is used for this function instead, and the dative use of the allative is therefore not proper to native Tocharian. The

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[8] For example sentences in both Tocharian A and B, I refer to Kölver 1965 and Carling 2000.

allative case is used with movement towards a goal, especially when the goal is a living being, or when the goal is not necessarily reached or entered (Carling 2000: 53-54; Kölver 1965: 78). Tocharian A and B agree in their use of the allative, and the same function of the allative can thus be reconstructed for Proto-Tocharian (Carling 2000: 384).

3.1.2 Locative

The locative (TA -*aṃ* ~ TB -*ne*) is used primarily to denote location inside or movement into some object (Carling 2000: 51-52). The latter use is atypical for locatives in other Indo-European languages. Kölver remarks that "der der Indogermania so geläufige Unterschied zwischen Lokalis und Direktivus, dem Ruhen in einem Punkt oder Bereich und der Bewegung in ihn hinein, im Toch. auch beim Lok. nicht zum Ausdruck kommt" (Kölver 1965: 97). A noun marked in the locative is typically a bounded space like 'house', according to Carling, as opposed to the perlative (see 3.1.4), which is used primarily with unbounded spaces like 'field'.[9] Melchert suggests that the locative is rather used for spatial objects without significant surface extension, as this better explains the use of the locative with abstracts (which have no literal spatial delimitations) and words meaning 'place' (Carling 2000: 186, 264; Melchert 2002: 107). The object of emotions like 'love, desire, hate, compassion, etc.' is also mostly rendered in the locative case in both Tocharian languages (Kölver 1965: 123), but seeing as Sanskrit uses the locative in the same way (cf. Macdonell 1927: 198), this could be due to secondary influence from that language. Since the uses of the locative in Tocharian A and B are very similar, the Proto-Tocharian function would have been largely the same, primarily denoting (internal) location and arrival inside somewhere (Carling 2000: 384-387).

3.1.3 Ablative

The ablative case (TA -*äṣ* ~ TB -*meṃ*) is primarily used to indicate the starting point of some movement or an action, without differentiating between a point of origin 'in' or 'by' the object in the ablative case (Carling 2000: 23). In Tocharian A, the ablative is also used to mark the standard of comparison. Here the two languages are in disagreement, as Tocharian B normally uses the perlative (see 3.1.4) for this purpose. Only in combination with *allek* 'other (than)', *oṃṣap* (*auṣap*) 'more (than)', and *olyapo* 'id.' is the ablative attested in Tocharian B as well, in the case of the latter two next to the more usual perlative (Kölver 1965: 145-146).

Since the endings of the ablative in Tocharian A and B cannot easily be reconciled, Carling does not reconstruct this case for Proto-Tocharian (Carling 2000: 379). She does note that it is unexpected for the ablative to be missing from the local case system, and wonders if the genitive might have been used for this purpose, despite the genitive not having any discernible local use in either Tocharian A or B (ibid.: 280). In my view, however, the fact that Tocharian A and B have different suffixes for the ablative does not necessarily mean that both are post-Proto-Tocharian innovations, as it is always possible that one of the two replaced the original ending. It could even be that an original Proto-Tocharian ablative was replaced in both Tocharian languages. Given the atypical local system that is obtained with the removal of the ablative either of these options is quite likely. It will appear from subsection 3.2.2, that the TA ablative can be derived from a Proto-Indo-European element, which indicates that it goes back to Proto-Tocharian as well.

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[9] Tocharian A and B mostly agree on which nouns in combination with which verbs are expressed with either the locative or the perlative. An exception is the words for 'mountain' TA *ṣul* ~ TB *ṣale*, as position on a mountain is expressed with the locative in TA, while TB uses the perlative (Carling 2000: 258-259).

Even if that is the case, reconstructing the meaning is still tricky. Should we give precedence to the use of the ablative in Tocharian A and say that it had the usual ablative semantics, as well as functioning as the standard of comparison? The few examples of ablative use in Tocharian B with *allek* 'other (than)', *oṃṣap/auṣap* and *olyapo* 'more (than)' might then be suggested to constitute archaisms, even though the ending is different. On the other hand, the use of the perlative to denote the object of comparison in Tocharian B (see 3.1.4) could conceivably have been caused by the replacement of the original ablative ending—but why then would 'other than' and 'more than' still be (optionally) construed using the ablative? The ablative is used to mark the standard of comparison in Sanskrit as well (see Macdonell 1927: 191-192), so perhaps Tocharian B was marginally influenced in this regard. All in all, it seems reasonable to say that the Proto-Tocharian ablative was used to denote a starting point, and, less certainly, to mark the standard of comparison.

3.1.4 Perlative

The meaning of the perlative case (TA -$\bar{a}$[10] ~ TB -*sa*) is complex, and in some uses it is rather close to that of the locative. The canonical function of the perlative can be translated with 'along, by, across, through, etc.' (Carling 2000: 45-46, 49-50). Like the locative, the perlative can be used to indicate either movement or static location. As mentioned in subsection 3.1.2, Carling characterises the difference between the two cases as a matter of unbounded space (perlative) vs. bounded space (locative) (Carling 2000: 258-259), whereas Melchert considers the notion of significant surface extension to be the primary factor (Melchert 2002: 107).

Another function of the perlative is to mark the agent in a passive sentence (Kölver 1965: 52), although the genitive is used for this more frequently (ibid.: 19), and the perlative can also express a cause or a reason in both Tocharian A and B (ibid.: 53-58). The perlative is used in two additional ways in Tocharian B only, namely as an instrumental, and to mark the standard of comparison (ibid.: 43-53, 64-66). (For these functions Tocharian A uses a separate instrumental (3.1.6) and the ablative (3.1.3) respectively; Kölver does mention that even in A the perlative may approach instrumental use (ibid.: 29)).

The function of the perlative in Proto-Tocharian probably includes its typical usage as a locational perlative, combining movement 'along' with surface extension (Carling 2000: 384-385). What additional functions it might have had are difficult to determine due to the disagreement between Tocharian A and B. The expression of a cause or reason might have been in use early on, and given the likely innovative nature of the TA instrumental, it is not unthinkable that earlier instrumental use of the perlative was displaced by this new case in Tocharian A. The use of the perlative to indicate the standard of comparison in Tocharian B is striking, but it could be this usage was promoted by the loss or replacement of the original ablative case form (cf. above). This is of course far from certain. The Proto-Tocharian perlative must have had similar local meaning as attested in both Tocharian A and B. Its use to denote a cause or reason is also shared between both languages, and perhaps an instrumental meaning could be derived from this at an early stage already, as it is found in TB.

3.1.5 Comitative

The comitative (TA -*aśśäl* ~ TB -*mpa*) marks a person or thing that accompanies something else. It is strictly kept separate from the instrumental (for which see 3.1.6). Although the forms of the suffixes

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[10] The preservation of the TA perlative ending -$\bar{a}$ is puzzling in light of the apocope of final vowels in the prehistory of this language.

are different in Tocharian A and B, their functions correspond closely (Kölver 1965: 69-74). If either suffix goes back to a Proto-Tocharian case suffix (see also 3.2.2), its function is likely to have been the same as attested.

3.1.6 Instrumental

Only Tocharian A has a separate instrumental case (-*yo*). The instrumental is used to mark an instrument or also a cause, the latter function being shared with the perlative (Kölver 1965: 11-27). The instrumental does not have the comitative meaning that is commonly associated with this case in other languages, as the separate comitative case is used for this instead (cf. 3.1.5). The instrumental in -*yo* is commonly agreed to be a specific Tocharian A derivation from the conjunction *yo* 'and' (see Kim 2012: 131 for references), and thus cannot be reconstructed for Proto-Tocharian as part of the case system.

3.2 The forms of the Tocharian cases

At first sight the correspondences between the secondary cases in Tocharian A and B seem to be limited to the locative TA -*aṃ* ~ TB -*ne* < PT *-*në*. However, with reinterpretation of original final *-*s* of the obl.pl. *-*ns* in Tocharian B, the perlative TA -*a* ~ TB -*sa* can be derived from PT *-*a*. With the same development the allative TB -*śc* can be linked to TA -*ac* with a generalised -*a*- in the latter, and reconstructed as PT *-*cə* (Gippert 1987: 25-28). I will first discuss the etymology of these cases in 3.2.1. The Proto-Tocharian reconstructions for the ablative TA -*äṣ* ~ TB -*meṃ* and the comitative TA -*aśśäl* ~ TB -*mpa* more problematic, and I will discuss these separately in 3.2.2. It has been proposed that early Tocharian preserved a dative-locative, and I will briefly summarise the arguments in 3.2.3. I will then discuss the status of the secondary cases in 3.2.4, and in 3.2.5, I will give an overview of the Proto-Tocharian secondary cases and their Proto-Indo-European origins.

3.2.1 Where Tocharian A and B agree

The locative suffix is the only secondary case suffix with a somewhat agreed upon etymology. It can be connected to Lith. *nuõ* 'from' ~ OLith. illative -*n(a)*, OCS *na* 'on, at; (on)to' < PBSl. *$n\bar{o}$ (Kim 2012: 132 with references). This is further reconstructed as a Proto-Indo-European instrumental of "spatial extension" *h_2no-h_1 (Rasmussen 1989: 188 fn. 19).[11] For this reconstruction to work, the laryngeal would have to be lost in final position, however, unless Kim's proposed rule of shortening PIE *-oh_1 > *$\breve{o}$ > PT *$\ddot{e}$ in polysyllables is correct (Kim 2018b: 101-104). Kim bases this rule on the dual forms TB *eṅwene* 'two men', *ñäktene* 'two gods' and *pacere* '(two) parents' < PT *$\ddot{e}nkw\ddot{e}(n\ddot{e})$, *ńəktë(në), pacerë*, in which -*ë* and -*në* can be derived from *-*o*-h_1 and *-*no*-h_1 respectively (ibid.). The locative would be another possible example of the same development. The PT locative *-*në* could alternatively be derived from the accusative *h_2no-*m* of the same base as *h_2no-h_1 (Kim 2012: 133). Van Windekens connects the final *-*o* > TB -*e* to the one that is found in other adpositions such as

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[11] The other examples that Rasmussen gives as instrumentals of spatial extension are Gr. ἄνω 'upwards' and κάτω 'downwards', which are later considered as remnants of allative formations by Kim (2018a: 161). Note that the reconstruction of the allative on the basis of Hittite unaccented -*a* / accented -*ā* is disputed, and e.g. Kloekhorst reconstructs *-*o* on the basis of the correspondence Hitt. *parā* /prá/ 'forward' : Gr. πρό, Skt. *prá*-, Lat. *prŏ*, Goth. *fra*- < PIE *pro*, instead (Kloekhorst 2008: 161).

Greek ἀπό, Sanskrit *ápa* < PIE *h_2epo 'from' (Van Windekens 1979: 257), which does not have a final laryngeal to begin with.

Greek -δε as in οἶκόν-δε 'home(wards)' has been adduced as a cognate of the Proto-Tocharian allative *$c\partial$ (Van Windekens 1979: 254), and this works well semantically. However, PIE *de should have given *$\acute{s}\partial$ instead of *$c\partial$, as in TA *śäk* ~ TB *śak* 'ten' < PIE *$de\acute{k}m$. Gippert has proposed that progressive devoicing in the acc.pl. *-ns-de > *-ns-te > *$nsc\partial$, from which *-$c\partial$ was analysed and spread as the new allative ending (Gippert 1987: 31). Klingenschmitt (1994: 345-346) thinks that *te is a variant of *to > PCelt. *to- 'to', Hitt. *ta* (clause conjunctive particle). Kim proposes instead that the allative *-$c\partial$ is from PIE *-d^he as found in Lat. *un-de* 'whence' and (with an additional -*n*) Greek ablatival forms in -θεν. The shift from ablative to directional semantics has a parallel in e.g. Lat. *intus* 'from inside; inside; (to) inside' (Kim 2012: 134).

The PT perlative *-*a* has been connected with Lat. *ad* 'to, at', OEng. *æt* 'at, to' < PIE *h_2ed (Pedersen 1941: 92; Van Windekens 1979: 251-252). A generalised instrumental singular of thematic stems has also been proposed (Klingenschmitt 1994: 342-4), but PIE *-oh_1 does not normally yield Tocharian -*a*. Van Windekens also rejects an instrumental origin for the perlative, because this would be unexpectedly in opposition to the other cases, which were formed from postpositions. Kim (2012: 135) also considered the allative, reconstructed by him as *-eh_2, an option, but this reconstruction is not agreed upon (cf. fn. 11). The most straightforward reconstruction is the adposition *h_2ed, as it does not involve extra difficulties like the other two.

3.2.2 Where Tocharian A and B differ

The endings of the ablative (TA -*äṣ* ~ TB -*meṃ*) and the comitative (TA -*aśśäl* ~ TB -*mpa*) do not match, which makes it difficult to reliably reconstruct these cases for Proto-Tocharian. Several suggestions have been made to "solve" these cases, but not all aspects have received an adequate explanation yet.

Starting with the ablative of TA -*äṣ*, Jasanoff has proposed that an original *t or *d^h between any vowel and *i underwent early assibilation to *s. This *s was later palatalised by the *i to *$ṣ$, giving a different result from the expected palatalised reflexes of *t and *d^h > *c. This development would account straightforwardly for the 3sg. verbal ending in TA -*(ä)ṣ* in e.g. *lkāṣ* 'sees' < *$läkāti$, and in the 2sg. imperative of *y*- 'to go', TA *p-iṣ* ~ TB *p-aṣ* /pə́ṣ/ < PT *$y\partial ṣ$ < PIE *$i-d^hi$ as in Skt. *ihi*, Gr. ἴθι, Hitt. *īt*. The third argument for this development is the TA ablative -*äṣ*, which could accordingly be derived from PIE *-(*e*)*ti*, the same ablative ending as found in Hittite *antuḫšaz* 'from a man' and in Armenian *i getoy* (*-*o-ti*) 'from a river', *i banē* (*-*e-ti*) 'from speech' (Jasanoff 1987: 108-112).

Pinault rejects Jasanoff's proposed assibilation of *t/d^h before *i and lists some counterexamples. In particular, TA *kāc* 'skin' < PT *$kwac(\partial)$ < PIE *$kuh_{2/3}-ti$ and *märkwac* (obl.sg.) 'thigh' < PT *$m\partial rkw\partial c(\partial)$ < PIE *$mr\acute{g}^hu-ti$ show that *-*ti* underwent the expected development to *-$c\partial$ (Pinault 2006: 269).[12] The palatalization of *s in *si is furthermore disputed, so the outcome of *ti > *si might even be expected as *$s\partial$ instead of *$ṣ\partial$ (cf. Pinault 2008: 423, 620).

According to Pinault himself (2006), the ablative suffixes in the two Tocharian languages are to be related to the PIE thematic ablative *-oh_1-ed. The TA ablative -*äṣ*, with alternative, arguably more archaic realisations -*aṣ* and -*āṣ*, could to go back to an earlier sequence *$a.äṣ$ with hiatus. Pinault

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[12] Three additional counterexamples involve postnasal *ti: A *āñc* 'downwards' < *$añc\partial$ < *h_2n-d^hi, A *lāñci* 'royal' < *$lañciyë$ ← *$lant$- 'king' + -*iyo*-, and 3pl.prs. A -*(ä)ñc* < *-nti, *-$\partial ñc$ < *-*enti*, -*eñc* < *-*ëñc* < *-*o-nti* (Pinault 2006: 269), which is not an environment where assibilation is reconstructed (Kim 2014: 131 fn. 11).

argues that this sequence is the regular outcome of *-oH-ed* via progressive palatalization of the *d* after *'ə < *e*. The cognate in Tocharian B, *e.äṣ* was consequently extended with a preposition *-mën*, related to the adverb TB *mante* 'up'. The original final *d* of the ablative (whatever its phonetic realisation at the time) was then assimilated by the *m* of this postposition, disappearing without a trace (Pinault 2006: 277). This scenario would explain why the ablative is the only secondary case in Tocharian B in which the accent can shift to the right when extra syllables are added in inflection. Such a shift happens in the genitive and nominative-accusative plural, but not in any of the other local cases except the ablative; e.g. TB nom.sg. *lákle* underlyingly /ləklé/; abl.sg. *läklémeṃ* as in gen.sg. *läkléntse* and nom.-acc.pl. *läklénta*, as opposed to the other secondary cases perl.sg. *láklesa*, com.sg. *láklempa*, loc.sg. *láklene*. With a derivation of abl.sg. *läklemeṃ* from an earlier stage with an extra /ə/ as in */ləkleə-/, the accent would regularly shift to the right in the ablative (Pinault 2006: 248-257).

Kim (2014: 131) is not convinced by Pinault's alternative reconstruction, and rather agrees with Jasanoff's derivation of the TA ablative *-äṣ < *h₁eti*. The unexpected behaviour of the Tocharian B ablative as regards stress can, according to him, be explained by assuming that the ablatives were synchronically compounds in this language. After all, in compounds the stress usually falls on the second underlying syllable of the first element. The direct cognate of the TA ablative *-äṣ* would further have been lost in TB due to a variable apocope of *-ti > *-ti ~ *-t*, which yielded *-ṣə ~ *-Ø*. According to Kim, "TA generalized the longer variant, as it did in the pres. 3sg. *-äṣ* and 3pl. *-iñc, -eñc* (beside much rarer *-i, -e*); but pre-TB generalized the shorter variant, as it did in pres. 3pl. *-eṃ*, *[ləklé̃]ṣə ~ *[ləklé̃]Ø, *[ostə́]ṣə ~ *[ostə́]Ø → pre-TB *[ləklé]Ø, *[ostə́]Ø" (ibid.: 132). The resulting forms in TB were insufficiently marked, which understandably generated the need to create a new ablative with postposed *monti-ti* (ablative) → *monti* (haplology) > *monti ~ *mont* (variable apocope) > (*mëñcə ~) *mën* (ibid.: 132-133).

I do not find the notion of variable apocope attractive as an explanation to begin with, and its end result of apocopated forms being allegedly generalised in TB in this case, as well as in the 3sg. and 3pl. present tense endings, while TA generalised the unapocopated forms in all three instances, strikes me as highly dubious—especially considering that the TB pres. 3pl. *-n* can be derived from the PIE secondary ending *-nt*. Furthermore, it seems unmotivated that what is essentially an unmarked ablative form would be generalised in Tocharian B at the expense of a clearly marked form with the same meaning in the first place. Wholesale apocope of *-i* here cannot be reconstructed within the paradigm used by Kim, because the derivation of the imperative in the likes of TA *p-iṣ*, and TB *p-äṣ* < PT *yəṣ* < PIE *i-dʰi* shows assibilation and retention of the *-ṣ* in both Tocharian A and B. In my view the precise origins of the TB ablative *-meṃ* remain uncertain, but I tentatively accept the derivation of the TA ablative *-äṣ* as from PT *-əṣ* < PIE *h₁eti*, and assign this ending the Proto-Tocharian ablative.

The TA comitative ending *-aśśäl* has a clear connection with the preposition and compositional element TB *śale, śle-* ~ TA *śla-* '(along) with; likewise' (the initial *-a-* of *-aśśäl* is a generalised vowel as found in the all. *-ac* and loc. *-aṃ*). This entire group of words is etymologically rather obscure, however. Van Windekens connected it with the verb TAB *käl-* 'to lead, bring to', Skt. *kaláyati* 'incite', Gr. (ὀ)κέλλω 'bring a boat to shore', Alb. *qel/qil* 'to bring, carry'. PIE *kelo-* would give TB *śale* regularly; the geminate *-śś-* of the comitative ending *-aśśäl* is to be considered a secondary feature, according to Van Windekens (Van Windekens 1979: 252). Adams does not find this derivation semantically convincing and rather supports Pedersen's suggestion of a link with OIr. *céile* 'companion, spouse', W *cilydd* 'companion', but remains cautious (Adams 2013: 680).

Kim has recently (2014: 134-136) proposed a derivation via PT *-śǝ-yǝlë, which he etymologises as a combination of the coordinative clitic *-kʷe > *śǝ and the gerundive of *yǝ- 'go' → TB *yalle*, A *yäl*. The part *yǝlë lacking a geminate *ll* as found in TB *yalle* could represent the more archaic form, to be derived directly from PIE *h₁i-ló-, according to Kim. The development of this form would be *NP₁ NP₂-kʷe* 'NP₁ and NP₂' → 'NP₁ with NP₂' > *NP₁ NP₂-śǝ*, with the addition of *yǝlë yielding *NP₁ NP₂-śǝ yǝlë* 'NP₁ to go (together) with NP₂'. The status of TB *śale*, *śle-* and TA *śla-* as prepositions would be secondary, but the presence of this word in both languages indicates that *-śǝ-yǝlë goes back to Proto-Tocharian. Kim therefore concludes that *-śǝ-yǝlë represents the original comitative ending, with TB *-mpa* being a later innovation. An important part of this etymology is that it explains the geminate *-śś-*, which had not been adequately explained before—one of the sources of this geminate in Tocharian A is from a syncopated sequence *-śǝy-. The derivation of a preposition from an original suffix or clitic element remains difficult, however. Kim supports the development by pointing to Ossetic *æd* 'with' and *ænæ* 'without', which are the only prepositions in a language otherwise dominated by postpositions, and thus parallel to the status of TB *śale* 'with' and *snai* 'without' (ibid.: 136). This does not amount to an explanation as to how *śale* would have become a preposition, however (was Ossetic *æd*, too, originally a suffix?). The parallel only implies that there could be some structural pressure for elements meaning 'with' or 'without' to precede the noun phrase they modify, but additional evidence would be needed to support this notion. As such, Kim's etymology for the TA comitative *-aśśäl* and the preposition TB *śale*, *sle-* ~ TA *śla-* remains uncertain.

The TB comitative *-mpa* is quite as mysterious as the ablative *-meṃ*. It has been connected with a form *meu̯ā 'connection, alliance, association' from a root *meu- 'to join' by Van Windekens, but it remains unclear how the *-u̯- would yield *-p-. Van Windekens has also proposed a Uralic origin, from the suffix *-mpa with original contrastive semantics, but he has since abandoned this etymology (Van Windekens 1979: 253).

Kim proposes to connect TB *-mpa* with the words for 'both' TB *antapi* ~ TA *āmpi* < PT *antǝpǝy, a dual form based on PIE *h₂nt-bʰí → *h₂ntbʰ-ih₁. The problem is that the final *-a of a hypothetical *antǝpa does not correspond to either TB *antapi* or TA *āmpi*. Kim explains this as a reduction of earlier *-ai in an unstressed syllable, as in duals in *-eh₂-ih₁ > *-ai > *-a; e.g. TB *oksáine* 'two oxen', *pokáine* '(two) arms' vs. *ckā́ckane* '(two) shanks'. He thus reconstructs a form *h₂nt-bʰ-éh₂-ih₁ instead of *h₂ntbʰ-ih₁ to yield PT *antǝpa. The initial *a- could be contracted with a final *-a or *-o (and perhaps *-e) of the preceding noun, and from there a reanalysed form *-ntǝpa spread to nouns ending in pre-TB *-e and *-ǝ. The development of TB *-mpa* would thus be from *h₂nt-bʰ-éh₂-ih₁ > *ẋ-(a)ntǝpai > *ẋ-(a)ntǝpa > *ẋ-(a)ntpa > (assimilation) *-mpa* (Kim 2014: 133-134). Neither the existence of a form *h₂nt-bʰ-éh₂-ih₁ nor the development *-ai to *-a as described by Kim is certain, however. Especially in final position, the obliques TB *oksai*, *pokai* and *ckāckai* rather suggests that there was no simplification of an unaccented diphthong *-ai > *-a.

The choice of TA *-aśśäl* or TB *-mpa* being the more original, Proto-Tocharian comitative is not clear cut, since no compelling etymology is available for either. An important consideration is that there is no obvious reason as to why a clearly differentiated case form like *-śǝ(yǝ)lë would be replaced in TB. The TA reflex of PT *-mpa, on the other hand, would have been **-Vmp or **-Vm (with the vowel taken from the stem, as in the other cases), which is phonologically less salient. If the connection with TB *antapi* ~ TA *āmpi* as suggested by Kim is to be rejected based on the mismatch between the *-a in *-mpa* vs. the *-i in 'both', there is furthermore no source for an ending *-mpa present in either Tocharian language. That could indicate that the origins of the comitative in *-mpa* lie so far back in time that the element it originated from completely disappeared as a separate entity; this as opposed to TA *-aśśäl*, with its cognates TB *śale*, *śle-* ~ TA *śla-*.

3.2.3 A Proto-Tocharian dative-locative?

Based on a correspondence between TB *ā*-stem oblique singular forms in *-ai* and TA *ā*-stem genitive singulars in *-e*, Peyrot (2012) has suggested that an old dative-locative *$*-ai$ < *$*-eh_2-i$ or *$*-eh_2-ei$ was still present at a Proto-Tocharian stage. The semantics of this suffix could not have been either genitive or oblique already, since Tocharian A and B disagree on this point. Deriving the genitive function in Tocharian A is no problem, since the genitive functions as a dative synchronically, and the Tocharian B oblique semantics of the ending are more likely to be derived from a dative, which was lost as a separate case, than from a genitive. An element *$*-ai$ was also used to form adverbs such as TA *spānte* 'confidently' ~ TB *spantai* 'trustingly'. In Tocharian B such adverbs with locative meanings generally have a locative prefix (e.g. *enestai* 'in secret'), so that the locative meaning need not be derived from the ending itself. The same is not the case for Tocharian A, however, which means that original locative value can be attributed to the ending after all. This means that there may well have been a case with combined dative and locative functions in Proto-Tocharian, at least for *ā*-stems (ibid.: 204-207).

3.2.4 The status of the secondary cases in Proto-Tocharian

Up to this point, the identity of the secondary cases as proper case forms has been taken for granted. However, the relationship between the secondary case endings and the oblique used as base are different in Tocharian A and B in some interesting ways, which could indicate that their status in Proto-Tocharian was different from what we find in the later languages.

In Tocharian A, the accentual unity of the oblique + affix is indicated by the apocope of final vowels in e.g. com. *-aśśäl* vs. TB *śale, śle-* and loc. *-ṃ* vs. TB *-ne*, where these otherwise monosyllabic elements should have kept the vowel if they were independent (Carling 1999: 99). Kölver points to syncope in both the primary genitive, e.g. *pācri*, and the secondary cases, e.g. perl. *pācrā*, all. *pācrac*, abl. *pācräṣ*, loc. *pācraṃ*, as an indication that the oblique *pācar* was univerbated with the secondary case endings in Tocharian A. Furthermore, an epenthetic *-y-* was added between those secondary cases starting with a vowel and an oblique stem ending in *-i*, *-e*, or *-o*. This is not a normal sandhi development between two words, and thus points to the status of the secondary case forms of nouns as single units (Kölver 1965: 4-5).

In Tocharian B, on the other hand, an original lack of unity is indicated by the accent not moving to the right in the secondary cases except the ablative; recall e.g. TB nom.sg. *lákle* underlyingly /ləklé/; abl.sg. *läklémeṃ* as in gen.sg. *läkléntse* and nom.-acc.pl. *läklénta*, as opposed to the other secondary cases perl.sg. *láklesa*, com.sg. *láklempa*, loc.sg. *láklene* (cf. also 3.2.2). Rarely a secondary case endings also occurs separated from the oblique stem, as in *ṣkas meñantse ne* 'on the sixth of the month', where the locative morpheme *-ne* is separated from the word it belongs to, *ṣkas*, by the intervening genitive *meñantse* (e.g. Carling 1999: 99-100), which reflects the original independence of the ending. However, the development of *$*ns$ to *nts* in e.g. perl.pl. *yakweṃtsa = yakweṃ + sa*, is a word-internal development, indicating that there was no word boundary between the oblique and the secondary case suffix (ibid.).

The oblique is not the only case used with adpositions in Tocharian, but it does seem to be the one reserved for those combinations that go back to Proto-Indo-European directly. In this light, TB *spe* 'near' (< PIE *$*supo$ ~ Lat. *sub* 'under', Gr. ὕπο 'id.'), which is attested only as a postposition with the oblique, may be of interest. It has lost the vowel *$*ə$ (cf. the adverb *ysape* 'near by', where <a> is /ə́/), which means that it was unaccented. According to Penney, this constitutes a close parallel to the

secondary cases, which also became phonologically dependent on their head word at some point. The difference appears to be simply that *spe* failed to be properly incorporated into the case system (Penney 1989: 64).

All of this leaves us with a rather confused picture of the early history of the secondary cases. On the one hand there are still traces of the independence of the suffixes in TB especially, but on the other hand, it seems that there was a close phonological relationship between nouns and certain postpositions in Proto-Tocharian already. If the rise of the TB accent rules could be dated more exactly there would be a way to establish at what point in time the univerbation of the secondary case morphemes with the oblique occurred, but until then the age of the secondary cases cannot be determined. How long the original postpositional phrases were used before they gave rise to proper case forms is also unknown.

3.2.5 Overview of the origins of the Tocharian secondary cases

In Table 3 below, the secondary case suffixes of Tocharian A and B are presented with their Proto-Tocharian counterpart. In the case of the ablative, the suffix of TA is given precedence and reconstructed for Proto-Tocharian, because of its likely Proto-Indo-European origin. The comitative is tentatively reconstructed in accordance with Tocharian B, because this is the more obscure of the two comitative suffixes. Where a somewhat convincing etymology is available, the Proto-Indo-European adposition or adverbial element is given as well. These elements were not part of the Proto-Indo-European paradigm, and only became case markings in the prehistory of Tocharian, after much of the original PIE case system had been lost.

Table 3. The reconstructed Proto-Tocharian secondary case suffixes together with their most likely Proto-Indo-European origins and the Tocharian A and B forms.

	TA	TB	PT	PIE
allative	*-ac*	*-śc*	*$*-c\partial$*	*$*-d^he$*
locative	*-aṃ*	*-ne*	*$*-n\ddot{e}$*	*$*h_2noh_1$ / $*h_2nom$*
ablative	*-äṣ (-aṣ/-āṣ)*	*-meṃ*	*$*-\partial\varsigma$*	*$*h_1eti$*
perlative	*-ā*	*-sa*	*$*-a$*	*$*h_2ed$*
comitative	*-aśśäl*	*-mpa*	*$*-mpa$* ?*	??

4 Case in Samoyedic

The Uralic languages are famous for their extensive local case systems, as encountered in for example Hungarian, with around twenty cases. Many of these cases denote location 'at' and movement 'to' or 'from', as well as a distinction between 'in', 'on' or 'near'. However, such extraordinary inventories are not inherited from the Uralic proto-language. Instead, various Uralic languages grew their local case systems from an original set of three: a primary directional or "lative" (*-ŋ?), a locative (*-na) and an ablative (*-ta) (cf. Ylikoski 2011: 235).[13]

Most Samoyedic languages do not have very elaborate case systems either. In addition to the grammatical cases nominative (*-Ø), accusative (*-m) and genitive (*-n) inherited from Proto-Uralic, the lative, locative and ablative each have their Samoyedic counterpart, although the original or "primary" suffixes (viz. *-ŋ, *-na, *-ta > PSmy. *-tə) are only preserved in the inflection of relational nouns used as postpositions and in adverbs. The case suffixes of regular nouns, by contrast, are extended with so-called "coaffixes" *-ntə and *-kə. The Samoyedic languages also have a prolative, that typically Central Siberian case (cf. Anderson 2006). In Selkup, some additional local cases based on the PSmy. postposition *nä- 'by' were added to the case system (Janhunen 1977 s.v.). The same postposition is used in the northern Samoyedic languages to periphrastically express the local cases of the dual (e.g. Wagner-Nagy 2019: 191; Nikolaeva 2014: 57).

In this chapter, I will first consider the cases attested in the Samoyedic languages and their functions, including a search for a counterpart to the Tocharian comitative (4.1). It appears that the Uralic languages in general, including Samoyedic, have no Gruppenflexion similar to what is found in Tocharian, but I will briefly address adjective agreement in Nganasan, which shows some parallels. After that, I will discuss the formal reconstruction of the case systems for Proto-Samoyedic (4.2) and pre-Proto-Samoyedic and Uralic (4.3). The development of the case system from Proto-Uralic to Proto-Samoyedic needs to be understood to get a clearer picture of the relevant chronological stages, and to make a comparison with the pre-Proto-Tocharian case system possible.

4.1 The Samoyedic cases and their functions

In this section, I will take a look at the functions of the local cases are (4.1.1-4.1.4), as well as a number of Samoyedic comitative expressions (4.1.5) and some more restricted cases or case-like elements found in only northern Samoyedic (4.1.6) or southern Samoyedic (4.1.7). To round off this section, I will offer brief account of agreement in Samoyedic (4.1.8).

4.1.1 Lative
The forms are: Ngan. -*NTə^C*; EnF -*t* ~ -*d*; NenT -*nəʔ* ~ -*təʔ*; NenF -*n* ~ -*t*; SlkN -*tị* ~ -*ntị*; SlkC -*ntị* ~ -*tị* ~ -*nt* ~ -*nd* ~ -*ndə*; SlkS -*ntị* ~ -*tị* ~ -*ndə*; Kam. -*nə*; Mat. -*ndə*.

The lative typically marks a direction of movement or a goal (ex. 1). This is also the case that is generally used for a recipient or a beneficiary (indirect object) of a ditransitive verb (ex. 2).[14] In the

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[13] The identity of the lative suffix (or suffixes?) is much debated, and the vowel of the ablative is also uncertain (the other alternatives being *-tə* and *-ti*). For now, I will follow Ylikoski (2011) in using just *-ŋ* (ibid.: 256-257 for an argumentation and references) and *-ta*, without getting into a detailed discussion. I further disregard vowel harmony in Uralic reconstructions, so e.g. *-na* can be read as *-na ~ *-nä*.

[14] Accordingly, it is often called a "lative/dative" or "dative" in grammatical descriptions. I will only use the term "lative" to avoid confusion.

Selkup varieties the latter use is expressed with a distinct case, and the cognate to the lative case in other Samoyedic languages is not used for animate referents. This does not seem to be a general feature of the southern Samoyedic group as a whole, as the use of the lative as a dative is also mentioned for Kamas (Donner 1944: 133-134), and the case used as a dative in Selkup (-*ni*) results from the suffixation of the Proto-Samoyedic postposition **nä-* (Janhunen 1977 s.v.). There is no example of the lative in Mator used to mark a recipient (Helimski 1997: 139), but due to the poor attestation of this language no conclusions can be drawn from this.[15]

In Nganasan and Enets, the lative is used to mark the agent in a passive construction (Wagner-Nagy 2019: 196-197; Siegl 2013: 159-160). This would not have been one of its functions in Proto-Samoyedic, since the passive usage of the Proto-Samoyedic causative suffix **-rå* is apparently an innovation in the northern Samoyedic languages in itself (Zhornik 2018: 87, with reference to Helimski 1982: 108-109).[16]

1. *lam⁰pa-**n⁰h**[17] xəras´in⁰-m   xəmta-q*

    lamp-**LAT**   kerosene-ACC   pour-IPV.2SG

    'Pour some kerosene into the lamp.' (Tundra Nenets; from Nikolaeva 2014: 62)

2. *säsur-ʔ   säsur-ʔ   kari-ʔ   terik   enči-**t**   mi-ku-ina-t´*

    fox-ACC.PL   fox-ACC.PL   fish-ACC.PL   rich   man-**LAT**   give-DUR-1PL-PST

    'Foxes, foxes, fish, we gave the rich man.' (Forest Enets; from Siegl 2013: 160)

It appears that all Samoyedic languages agree on the function of the lative as a directional case with illative and allative functions, corresponding to '(in)to'. Since its use as a dative is also widely attested, this may have already been an additional function of the lative in Proto-Samoyedic. However, the restriction of the lative to inanimate nouns in Selkup is unexpected if the Proto-Samoyedic lative could already be used as a dative (typically applied to animates). The Selkup situation could thus be taken as a sign that the dative function arose only after Proto-Samoyedic times independently in the northern Samoyedic languages and Kamas. It seems possible that the strategy of marking the indirect object with the postposition **nä-* was the original Proto-Samoyedic strategy that got replaced by expanding grammatical functions of the lative case in most Samoyedic languages. Selkup would then be the only variety where the Proto-Samoyedic postpositional dative construction itself was grammaticalized as a new case form.[18]

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[15] Details on the lative in individual Samoyedic languages can be found in the following sources: Nganasan: Wagner-Nagy 2019: 196-197; Tundra Nenets: Nikolaeva 2014: 62; Forest Nenets: Sammallahti 1974: 36; Forest Enets: Siegl 2013: 159-160; Northern Selkup: Kuznecova 2002: 97-98; Kamas: Künnap 1971: 72-77; 1999: 16.

[16] There is little information available on passives in the Selkup varieties, but apparently Taz Selkup and Ket Selkup each have a different suffix to form a passive: Taz Selkup -*(m)py* as opposed to Ket Selkup -*ku* or -*V-* . In Ket Selkup, the agent of the passive is in the instrumental case, whereas Taz Selkup does not seem to mark agents of passives at all (Zhornik 2018: 31-32 with references).

[17] The sign <°> represents the so-called "reduced vowel" in Nenets. Generally, this phoneme is either pronounced as a very short [ə], or it lengthens a preceding consonant or vowel (see Nikolaeva 2014 for details).

[18] I do not recall having seen this possibility stated explicitly elsewhere.

4.1.2 Locative

The forms are: Ngan. *-NT∂nU*; EnF *-kun ~ -gun ~ -χan*; NenT *-kəna ~ -χəna*; NenF *-kVna ~ -hVna*; SlkN *-qi̯n ~ -qi̯t*; SlkC *-qi̯n ~ -qi̯t ~ -ɣi̯n ~ -ɣi̯t ~ -ɣon ~ -ɣot*; SlkS *-qi̯n ~ -qi̯t ~ -ɣon*; Kam. *-ɣə̂n*; Mat. *-kən*A *~ -gən*A.

The locative case is primarily used to mark a location inside something (ex. 3). In the northern Samoyedic languages, which do not have a dedicated instrumental case, the locative is used as the in that function as well (ex. 4). The Kamas example *iné̆-gen* 'mit dem Pferd' (Künnap 1971: 80) suggests that there the instrumental function of the locative might exist as well, although this could easily be a locational description of 'being on a horse' → 'going by horse' instead, also keeping in mind the existence of a separate Kamas instrumental, shared with Selkup (see 4.1.7). As with the lative, Selkup does not use the original Samoyedic locative for animate nouns. Instead, a new locative based on the preposition **nä-* is used (Ket Selkup *-nan*), or a postpositional phrase (Kuznecova 2002: 101). For human referents, the locative can be used to express a comitative (ex. 5) in at least Tundra Nenets (Nikolaeva 2014: 64), and Forest Enets (Siegl 2013: 161).[19]

3. *orō-ɣə̂n*   *ćüpi* *būzüj*   *i?bə*
    hole-**LOC** wet   calf   lie.PRS.3SG
    'A wet calf is lying in the hole.' (Kamas; from Künnap 1999: 17)

4. *tahari͡aa*   *ńaagəi-?*   *kümaa-**ntənu*** *ti̇msʲič-ali̇-ti̇*   *čüüń-ə-mtu*
    now   good-ADV   knife-**LOC**   chop-DISTR-AOR.3SG blanket-EP-ACC.SG.3SG
    'He chops the blanket with the knife.' (Nganasan; from Wagner-Nagy 2019: 198)

5. *Wera-**xəna*** / *Wera-**xənanta***   *to^o*
    Wera-**LOC** / Wera-**LOC.**3SG   come
    'He came with (his) Wera.' (Tundra Nenets; from Nikolaeva 2014: 64)

The Proto-Samoyedic locative can be reconstructed as expressing location 'in', as well as (secondarily?) location 'at, by'. It is possible that some instrumental semantics were already available, but this would be a secondary development from earlier exclusively locational semantics; in any case, it is easy to imagine a reanalysis of instances like 'catch in a net' → 'catch with a net', 'travel in a boat' → 'travel by boat' and 'hold in hands' → 'hold with hands' as an original locus from which instrumental use of a locative might have spread. The existence of a new, separate instrumental case in both Selkup and Kamas indicates that this was not generally the function of the locative yet before the break-up of Proto-Samoyedic, however.

4.1.3 Ablative

The forms are: Ngan. *-Kə^Ctə*; EnF *-kuð ~ -guð ~ -χað*; NenT *-kəd ~ -χəd*; NenF *-kVt ~ -hVt*; SlkN *-qi̯ni̯*; SlkC — ; SlkS *-qi̯nto*; Kam. *ɣə̂?*; Mat. *-du ~ -adu* (only in adverbs; without a coaffix).

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[19] Details on the locative in individual Samoyedic languages can be found in the following sources: Nganasan: Wagner-Nagy 2019: 197-199; Tundra Nenets: Nikolaeva 2014: 63-64; Forest Nenets: Sammallahti 1974: 38; Forest Enets: Siegl 2013: 161; Northern Selkup: Kuznecova 2002: 100-101; Kamas: Künnap 1999: 16-17.

The ablative case is used to denote the direction away from somewhere/something, the source of some movement (ex. 6). The standard of comparison is also marked in the ablative in all of the northern Samoyedic languages, in Selkup, and in Kamas (ex. 7). The formation and syntax of comparatives in Mator is unknown (Helimski 1994: 139, 144), so it cannot be determined if the ablative was used to mark the standard in this language as well. The Selkup varieties again have a separate ablative for animate nouns (-*nanni*), which, as with the other specifically animate cases in Selkup, originates from the postposition **nä-* (Janhunen 1977 s.v.).[20]

6. *oo*   *kudaxai*   *d′a-**xađ***   *mud′* *to-điʔ*

    EXCL   distant   place-**ABL**   1SG   come-1SG

    'Oh, I come from a distant place.' (Forest Enets; from Siegl 2013: 162)

7. *mǝnǝ* *ńemi-mǝ*   *ńiǝŋiaŋku*   *ńemi-**gǝtǝ**-tǝ*

    1SG   mother-POSS.1SG beautiful.3SG mother-**ABL**-OBL.POSS.2SG

    'My mother is more beautiful than your mother.' (Nganasan; from Wagner-Nagy 2019: 200)

For the ablative it can be concluded that the quite standard elative 'out of' and ablative 'away from' semantics are to be reconstructed for Proto-Samoyedic. Based on the widespread use of the ablative to mark the standard of comparison all over Samoyedic, this was also likely already one of the functions of this case in the proto-language.

4.1.4 Prolative

The forms are: Ngan. -*mǝnU*, EnF -*Vn* (obsolete), NenT -*m(ǝ)n(′)a ~ w(ǝ)n(′)a*, NenF -*m(a)na*, SlkN -*min ~ mit*, SlkC -*min ~ mit ~ -βen ~ -βet*, SlkS -*min ~ -mit*, Kam. -*mna* (only in adverbs).

The prolative refers to movement across or along something, or movement to the end of something (ex. 8).[21] This function of the prolative can be found in all Samoyedic languages, and it can thus be reconstructed for Proto-Samoyedic.

8. *n′o-h*   *s′ī-**wᵒna***   *puxac′a*   *weqlǝmyᵒ-q*

    door-GEN   hole-**PROL**   old.woman   look.out-REFL.3SG

    'The old woman looked out of the door.' (Tundra Nenets; from Nikolaeva 2014: 66)

The prolative stands apart from the other local cases in that there is no significantly separate "primary" prolative suffix used to form postpositions from spatial nouns. The only difference between the prolative suffix of regular nouns and the prolative suffix of spatial nouns is the presence of a **ǝ*: regular **-mǝna* vs. **-mna* on postpositions. According to Janhunen the **ǝ* was added by analogy with the one found in the coaffixes **-ntǝ* and **-kǝ* (Janhunen 1998: 469). Another way in which the prolative stands apart from the other local cases will be addressed in 4.2.4.

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[20] Details on the ablative in individual Samoyedic languages can be found in the following sources: Nganasan: Wagner-Nagy 2019: 199-200; Tundra Nenets: Nikolaeva 2014: 64-65; Forest Enets: Siegl 2013: 162-163; Northern Selkup: Kuznecova 2002: 102; Kamas: Künnap 1999: 16-18.

[21] Details on the prolative in individual Samoyedic languages can be found in the following sources: Nganasan: Wagner-Nagy 2019: 200-201; Tundra Nenets: Nikolaeva 2014: 65-66; Forest Nenets: Sammallahti 1974: 40; Forest Enets: Siegl 2013: 165; Northern Selkup: Kuznecova 2002: 104-105.

4.1.5 Comitatives

There is no one way to form a comitative in Samoyedic, and the individual languages use various strategies. In Nganasan, a comitative can be expressed using the postposition *na* 'to, near', but Wagner-Nagy describes this as only a very recent and emergent case (Wagner-Nagy 2019: 188-189). The sociative derivational suffix *-səbtə* can also be used to express a comitative (ibid.: 329). As mentioned in 4.1.2, the locative in Tundra Nenets and Forest Enets may function as a comitative with human referents. In Forest Enets, a separate comitative derivation also exists, ending in *-sai/-ďai/-čai*. Siegl says that this formation "stands on the borderline of case, but resists classification as such" (Siegl 2013: 170-171).

In Kamas and in many Selkup varieties, the comitative is expressed using the instrumental (Künnap 1971: 132; Kuznecova 2002: 88). Some varieties of Selkup use a separate comitative form ending in *-opti*, which is probably cognate with the Nenets postposition/adverb *ŋōbt* 'together' (Anderson 2004: 47 with references).

Due to the variety and often lack of dedicated comitative formations in the Samoyedic languages, this case cannot be reconstructed for Proto-Samoyedic.

4.1.6 Northern Samoyedic predestinative
The forms are: Ngan. *-Tə*; EnF *-đu ~ -du ~ -tu*; NenT *-tə*; NenF *-tə*.[22]

The predestinative or benefactive constitutes a somewhat problematic category found specifically in the northern Samoyedic languages. It has been variously interpreted as nominal tense marking (e.g. Nikolaeva 2009) or as a declension type (e.g. Siegl 2013). Siegl describes its function as marking "a two-place relation, *X for the benefit of Y*" (ibid.: 381). It's use is illustrated in (9-10):

9. *mod´   kasa-ń   kńiga-đ   moo-đ-ut´*

   1SG   man-POSS.GEN.1SG   book-**PRD**   take-1SG-PST

   'I bought a book for my brother.' (Forest Enets; Siegl 2013: 382)

10. *ma-tə-mə   mej-s^jiðə-m*

    tent-**PRD**-ACC.1SG   make-FUT-1SG

    'I will make a tent for myself.' (Nganasan; Wagner-Nagy 2019: 212)

Siegl covers the predestinative in Forest Enets in detail (Siegl 2013: 378-403), and concludes that it is best analysed as a declension type (next to an unmarked declension and a possessed declension). The two main arguments against an interpretation of the predestinative as a case in Forest Enets are that it does not have its own plural form, and that there are no predestinative forms for the local cases. On the other hand, Siegl also lists some aspects of the predestinative suffix that recall the behaviour of the regular cases: (i) the predestinative appears after derivational morphology, in the same position as case suffixes, and the two exclude one another; and (ii) both the predestinative and case suffixes are found in combination with possessive suffixes.

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[22] For a description of the predestinative in Nganasan, see Wagner-Nagy 2019: 210-212; for Forest Enets, Siegl 2013: 176, 378-403; for Tundra Nenets, Nikolaeva 2014: 72-77; for Forest Nenets, Sammallahti 1974: 57-58.

There is still no consensus on the status of the predestinative, and a comprehensive analysis of its behaviour in all three languages that have this suffix has not yet been undertaken. If it is an original case form that later got restricted, its function in Proto-Samoyedic can be reconstructed to include its current range of use, with only the possibility of further uncertain translative semantics (see 4.2.5).

4.1.7 Southern Samoyedic additional cases

Some additional cases are found only in the southern Samoyedic languages. Kamas and Selkup have an instrumental in *-ziʔ* and *-se* respectively (each with various allomorphs and dialectal variants), which is derived from a participial form of the auxiliary verb 'to be', according to Künnap (1971: 142). The other additional case forms are found in the Selkup varieties; in the following, the Northern (Taz) Selkup form is given, unless otherwise specified. First there is the caritive 'without' in *-kɔɔli (~ kɔɔliŋ ~ kɔɔlik)*, which is derived from a Turkic negative participial *-qalak*, according to Bekker et al. (1995: 290). Then there are the translative or "essive-translative" *-n-qo ~ -t-qo*, the coordinative *-š-šaŋ ~ -š-šak* and the dative-allative 2 *-t-kinɨ*, which are based on the genitive with some additional postpositional element (Wagner-Nagy 2017: 481-482). The dative-allative 1 *-nɨ (~ -nɨŋ ~ -nɨk)*, the locative 2 *-nan* (Southern Selkup; this is the locative-ablative in Central Selkup), and the elative 2 *-nanni* (Southern Selkup) are based on the Proto-Samoyedic postposition **nä-* (Janhunen 1977 s.v.). As mentioned before, the use of this postposition to mark case is not restricted to Selkup, as it is also used in the northern Samoyedic languages to periphrastically mark the local cases of the dual. There is no apparent reason to reconstruct the additional cases treated in this subsection for Proto-Samoyedic as proper cases.

4.1.8 Agreement

Agreement between an attributive adjective and a head noun is not common in the Samoyedic languages. Only Nganasan has adjective agreement by default. In this language, attributive adjectives are inflected to agree with nouns for number (singular, dual[23], plural) and the core cases (nominative, accusative, genitive). A noun in one of the local cases (lative, locative, ablative, prolative) agrees with an adjective in the genitive case (Rießler 2016: 127-128; Wagner-Nagy 2019: 308-309).[24]

In Tundra Nenets, attributive adjectives agree optionally. Number agreement is most common, but case agreement is found too, as well as concord with possessive suffixes on both the adjective and the head noun. Unlike in Nganasan, the case inflection of attributive adjectives in Tundra Nenets is apparently not restricted to the core grammatical cases, as Nikolaeva lists an example where an ablative plural is marked on both the adjective and the noun (Nikolaeva 2014: 151-153). There is no concord between attributive adjectives and their head nouns in Enets; adjectives remain uninflected and are simply juxtaposed to the head noun. The same holds true for Selkup as well (Rießler 2016: 128).

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[23] It appears that the agreement in the dual as described by Wagner-Nagy (2019: 309) is a more recent phenomenon, since Castrén (1854: 187) explicitly states that there is no agreement in the dual number.
[24] In the modern language this is most apparent in the plural, since the accusative and genitive singular have lost their old endings (Ngan. -Ø < *-m* and *-ŋ* < PSmy. **-m* and **-n* respectively), thus becoming identical. In the plural, the two cases remain separate, revealing the agreement pattern; e.g. *aniʔka-iʔ mað-uʔ ŋua-ʔ* [big-GEN.PL tent-GEN.PL door-NOM.PL] 'the doors of the big tents' (from Wagner-Nagy 2019: 309; the gloss "NOM.PL." is missing in the original, but both the nominative plural morpheme *-ʔ* and the translation 'doors' show that it is required).

Juxtaposition is the most widespread strategy throughout Samoyedic, with adjective agreement only being attested in Nganasan and in Nenets. It is most pronounced in Nganasan, but if it is an innovation particular to this branch, there is no obvious motivation why only the core cases attained full agreement, while the local cases agree with the genitive.

4.2 The case system in Proto-Samoyedic and pre-Proto-Samoyedic

From the cases treated in the previous section, the lative, locative, ablative and prolative (4.1.1-4.1.4) are reconstructed for Proto-Samoyedic. The predestinative (4.1.6) may also be of Proto-Uralic origin, and could therefore be included in the case paradigm. The next objective is to go more in-depth into the reconstruction of the Proto-Samoyedic local case system, addressing the formation of the singular and plural paradigms (4.2.1 and 4.2.2 respectively). The nature of the coaffixes be the main topic of 4.2.3, with the prolative being addressed in 4.2.4. In 4.2.5, I will discuss the etymology of the predestinative case, and finally in 4.2.6, I will give a concrete interpretation of the developments of the Proto-Samoyedic system from Proto-Uralic.

4.2.1 Formal reconstruction of the local cases

The Samoyedic languages overwhelmingly show a four-way division in local case suffixes, with a separate lative, locative, ablative and prolative case. An overview of the attested case suffixes, as well as the Proto-Samoyedic reconstructions are given in Table 4.

Table 4. The local case suffixes of the Samoyedic languages. For reasons of space not all allomorphs are given here. Note the formation of the locative in Nganasan with the coaffix *-ntə-, as opposed to *-kə- found in all other Samoyedic languages (based on the tables in Däbritz 2017: 66-68, Janhunen 1998: 469).

	Ngan	EnF	NenT	NenF	SlkN	SlkC	SlkS	Kam	Mat	PSmy
lat.	*-NTəᶜ*	*-t/-d*	*-nəʔ/-təʔ*	*-n/t*	*-(n)ti̯*	*-(n)ti̯*	*-(n)ti̯*	*-nə*	*-ndə*	*-ntə(ŋ)*
loc.	*-NTənU*	*-kVn*	*-kəna*	*-kVna*	*-qi̯n*	*-qi̯n*	*-qi̯n*	*-ɣɘ̂n*	*-kənА*	*-kə/ntə-na*
abl.	*-Kəᶜtə*	*-kVd̦*	*-kəd*	*-kVt*	*-qi̯ni̯*	—	*-qi̯nto*	*-ɣɘ̂ʔ*	*(-(a)du)*	*-kə-tə*
prol.	*-mənU*	*(-Vn)*	*-m(ə)na*	*-m(a)na*	*-mi̯n*	*-mi̯n*	*-mi̯n*	—	*(-mna)*	*-məna*

As noted in 4.1, the coaffixes *-kə and *-ntə are an integral part of the formation of the local cases of regular nouns in Samoyedic. Crucially, however, the extant Samoyedic languages do not agree on which coaffix is used in the locative. Nganasan is the only one with *-ntə- in this case (Ngan. -NTənU < PSmy. *-ntə-na), while the rest of the Samoyedic languages use the coaffix *-kə- (cf. Table 4). According to Janhunen, this means that the local case system was not yet fully formed in Proto-Samoyedic times, before Nganasan split off from the others (Janhunen 1998: 469). He does not explain the kind of scenario one should envision in detail: were the speakers of Proto-Samoyedic inserting two different extra elements (viz. *kə and *ntə) in between stems and local case suffixes, apparently out of nowhere? In my opinion, that is not the only theoretical possibility.

The attested situation could instead imply that either (i) the Proto-Samoyedic local case system had not yet fully collapsed from an earlier, more elaborate stage, or that (ii) either coaffix spread from its original locus for some reason. Analogical spread of either *-ntə or *-kə is not immediately understandable, because either direction of spread assumes that a coaffix that was originally present in only one case (the lative for *-ntə and the ablative for *-kə) could oust its (apparently) semantically

indistinguishable but necessarily more well-represented counterpart. In the second scenario it is assumed that there were such other factors at play, motivating the spread of one of the coaffixes at the expense of the other. One possible reason for the decline of *-ntə is that the coaffix *-ntə had an allomorph *-tə after consonant stems in all of Samoyedic except in Nganasan.[25] This would have resulted in an alternating coaffix *-tə ~ *ntə, of which the first variant is homophonous with the (primary) ablative suffix *-tə and with the predestinative suffix *-tə. As a consequence of this, the coaffix *-kə might have been regarded as a more salient, and therefore preferable morpheme. Evidently, there was not enough reason to replace the lative singular *-ntə as well outside of Nganasan, so perhaps there was something else going on as well. I can think of no motivation for analogical spread in the opposite direction (i.e. spread of *-ntə at the expense of *-kə) in Nganasan only.

I think the development of the Samoyedic cases could thus be described in various ways, and these distinctions are important for our current purposes. If the pre-Proto-Samoyedic case system can be reasonably assumed to have deviated from what we can reconstruct for Proto-Samoyedic, then a comparison between the Proto-Samoyedic itself and pre-Proto-Tocharian case systems will inevitably lead us astray. In order to compare the processes by which the local cases were formed it is furthermore crucial to understand how the Samoyedic coaffixes came to be.

4.2.2 The formation of the plural local cases

Compared to the singular local cases, the plural local cases show even more remarkable differences in the individual languages, which makes it impossible to derive them a single proto-paradigm. The northern Samoyedic languages show a range of solutions in the local cases in particular, which implies that plural forms may not have been available for these cases in Proto-Samoyedic[26] (Däbritz 2017: 88). Since the southern Samoyedic languages show a generalised plural morpheme *-t throughout the paradigm (in so far as this is attested in Kamas and Mator), they will not be considered here.

According to Däbritz, the Nenets lat.pl. *-kəʔ is built from the local coaffix *-kə and the plural suffix *-t. The Enets lat.pl. *-kið cannot be from the same source *-kə-t, however, since the fricative -ð must go back to an intervocalic *-t. This can be attained using the combination local coaffix *-kə- + oblique plural *-j- + "lative suffix" *-tə (as *-ntə- < *-n + *-tə according to Mikola 2004: 100; but cf. section 4.2.3). Däbritz notes that the use of this suffix here would be rather anachronistic, but that there does not seem to be a better solution (Däbritz 2017: 74).[27] The Nganasan lat.pl. *-NTiʔ takes the form of the local coaffix *-ntə- and the plural suffixes *-j- and *-t (ibid.). The Nenets loc.pl. *-kəʔna is built from the coaffix *-kə-, the plural *-t, and the locative suffix *-na. In Enets *-kin, the oblique plural morpheme *-j is used instead, while Nganasan -NTiᶜnU is based on the coaffix *-ntə- + *-j- + *-na (ibid.; Mikola 2004: 103). The Nenets and Nganasan abl.pl. are formed in a parallel fashion, with

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[25] In Nganasan, the allomorphs without a nasal are the result of different morphophonological processes (cf. Helimski 1998: 490-491).

[26] The absence of a plural paradigm in Proto-Samoyedic can be understood in light of Castrén's remark that the singular forms are much more prominent than plural forms: "Von diesen [= dual and plural] ist in der That nur der Nominativ öfter in Gebrauch. In den übrigen Casus wird der Dual und der Plural meist durch den Singular mit Hinzufügung eines Bestimmungsworts: *zwei*, *viele*, *alle* ersetzt. In den nördlichen Dialekten kann ausserdem der Objectscasus des Plurals immer durch den Singular ausgedrückt werden, da sich die Zahl des Objects schon durch das verbum bestimmen lässt." (Castrén 1854: 107-108).

[27] I wonder if the suffix *-j* might have triggered the post-consonantal allomorph *-tə of *-ntə (analysed by the speakers of Enets as the lative suffix instead of as a coaffix?), which would obviate the need to posit a separate lative *-tə for the sake of explaining this form. A separation of *n and *tə from *ntə seems anachronistic, even if the *n is originally the genitive suffix *-n (see 4.2.3).

*-kə- + *-j- + *-tə > NenT -kət(ə) and *-kə- + *-t- + *-tə > Ngan. -Ki^Ctə respectively. Enets *-kit seems to go back to *kəjttə, possibly from earlier *kəjtətə, but the details are unclear (Däbritz 2017: 75).

This way of forming the plural by inserting the plural suffix in between the coaffix and the original case ending is puzzling. From an outsider perspective it might have been more logical if the plural suffix were suffixed directly to the word stem (cf. Däbritz 2017: 73), and followed by the complex local case ending consisting of coaffix + local suffix. Perhaps the absence of the coaffixes in the local cases of spatial nouns allowed for a morphological analysis whereby the coaffix was separated from the case ending, so that the plural could be attached to it—although we might expect to find a more orderly system in that case.

Finally, Däbritz derives the prolative plural is based on the genitive plural (apparently *-j-t) in both Nenets and Nganasan, as can be seen in e.g. Ngan. kümaa 'knife', with nom.pl. kümaa-ʔ : gen.pl. kümau-ʔ : prol.pl. kümau-ʔmənu (Wagner-Nagy 2019: 193). This implies that the suffix *-məna is a grammaticalized postposition, according to both Däbritz (2017: 75) and Wagner-Nagy, the latter stating that "[t]he plural prolative suffix is a relatively recent development and has been grammaticalized from a postposition" (2019: 192). If this is true, it is still difficult to say how young the prolative is exactly, and I have not found a compelling solution regarding its etymology (cf. 4.2.4).

An potential problem with the idea that the prolative is of recent postpositional origin is that the prolative singular is not based on the genitive, at least not synchronically in Nganasan[28] (e.g. kintə 'smoke' with gen.sg. kində : prol.sg. kintə-məni). Salminen further describes that the prolative plural of monosyllabic stems in Tundra Nenets is not derived from the genitive plural; cf. p´a 'tree' : p´aʔm°na, not **p´īʔm°na as it would be based on the genitive plural p´īʔ (Salminen 1997: 123).

Table 5 provides an overview of the plural formations of the local cases in the northern Samoyedic languages, as per Däbritz (2017).

Table 5. Plural case forms of the local cases in the northern Samoyedic languages (Däbritz 2017: 66-67).

	Ngan	EnF	NenT & NenF
lative	-NTiʔ < *-ntə-j-t	-kið < *-kə-j-tə?	-kəʔ & -kʔ/-hVʔ < *-kə-t
locative	-NTi^CnU < *-ntə-j-na	-kin < *-kə-j-na	-kəʔna & -kaʔna < *-kə-t-na
ablative	-Ki^Ctə < *-kə-j-tə	-kit < *-kə-j-tə-tə?	-kət(ə) & -kā^ht < *-kə-t-tə
prolative	-ʔmənU < *-j-t-məna	–	-ʔm(ə)na & -ʔm(ə)na < *-j-t-məna

Nganasan sets itself apart from the others by its use of the coaffix *-ntə in the plural as well, whereas Enets and Nenets both use only *-kə, even in the lative. Seeing as the rest of the formations also differ (e.g. EnF -kin < *kə-j-na vs. NenT -kəʔna < *-kə-t-na), the plural cases can be plausibly considered post-Proto-Samoyedic innovations, and consequently they offer no clear solution to the origins of the coaffixes *-ntə and *-kə. Only the formation of the prolative plural is agreed upon by all three northern Samoyedic languages, and this could at least provide us with some insight as to the nature of that particular case.

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[28] In Tundra Nenets it is impossible to tell whether e.g. the prol.sg. ŋanow°na of ŋano 'boat' is based on the nom.sg. ŋano or the gen.sg. ŋanoʔ, since the final glottal stop of the genitive is a so-called "nasalizing glottal stop", which disappears before sonorants like the initial of the prolative suffix -məna.

4.2.3 Local cases and coaffixes: system birth or system collapse?

Coaffixes form an integral part of the local case systems of many Uralic languages. Two well-known examples outside Samoyedic are the "internal" *s*-cases and the "external" *l*-cases of Finnic, with the *s*- and *l*- coaffixes respectively; e.g. Finnish *s*-cases *tule-(h)en* (with *h* < **s*) '(in)to the fire', *tule-ssa* 'in the fire', *tule-sta* 'out of the fire' and *l*-cases *tule-lle* 'onto the fire', *tule-lla* 'on the fire', *tule-lta* 'off the fire' (from Ylikoski 2016: 19).

The origin of these *s*-cases and *l*-cases, and coaffixal cases like them, has been approached by Uralicists in various ways. There are those who see coaffixes as "lative suffixes", which were at some point enlarged by the addition of the main local case suffixes, while others consider these suffixes to be derivational suffixes with some locational semantics in origin. A third view is that the coaffixes derive from erstwhile relational nouns and postpositions that were reinterpreted as part of new, complex case suffixes. This is transparently the case in, for instance, the Hungarian local cases (cf. Ylikoski 2011).

For the Samoyedic coaffix **-ntə-* Mikola (2004: 99-100) reconstructs a sequence of two lative endings, **-n* and **-tə*. Leaving the question of the origin of **-n* open, Mikola supposes that the second suffix **-tə* might be linked to similar elements with an **s* in the western Uralic *s*-cases, which are found in Saami, Finnic, Mordvin and Mari (traditionally "Finno-Volgaic"); PU **s* is regularly reflected as **t* in Proto-Samoyedic, after all. Künnap (1971: 112-113) had proposed to reconstruct **-ntə-* as a combination of the genitive **-n* and a postposition **-tə*, but Mikola thinks this cannot work for typological reasons. Namely, if any of the three main local cases are missing in Uralic, it is the ablative, not the lative. The lative is the least marked out of the three, and therefore most likely to be the oldest, and the basis for the others to be derived from (Mikola 2004: 100). There is, however, no reason to suppose that a lative first needs to disappear, since an older lative can be replaced by an innovative lative, like any other case.

Like Mikola, Ylikoski (2016) thinks there may well be a connection between the *s*-cases and the Proto-Samoyedic coaffix **-ntə-*. However, in his opinion, vaguely invoking a lative suffix with imprecise semantics and no apparent use other than to add in between the nominal stem and a(nother) case suffix is not compelling. Instead, the **s* in the *s*-cases, as well as the **-tə* of **-ntə*, should be regarded as the remnants of an old set of postpositions, as in the case of the Hungarian cases. These postpositions would have consisted of a relational noun **sV(...)-*, with the three primary local suffixes attached to it depending on the situation: lative **-ŋ*, locative **-na* and ablative **-ta* (Ylikoski 2016: 52). In this way, the illative, locative and ablative in Saami, Finnic, Mordvin and Mari would have resulted from combinations of a head noun (likely originally in the genitive) and an inflected relational noun **sV(...)-* (ibid.: 53).

Lative: PU **tuli(-n) sV(...)-ŋ* 'into the fire'
>   > South Saami *dålle-se*, Finnish *tule-(h)en*, Erzya Mordvin *tol-s*, East Mari *tulᵊ̂-š(ko)*

Locative: PU **tuli(-n) sV(...)-na* 'in the fire'
>   > South Saami *dålle-sne*, Finnish *tule-ssa*, Erzya Mordvin *tol-so*, East Mari *tulᵊ̂-što*

Ablative: PU **tuli(-n) sV(...)-ta* 'from the fire'
>   > South Saami *dålle-ste*, Finish *tule-sta*, Erzya Mordvin *tol-sto*, East Mari —

According to Ylikoski, it is expected that the original relational noun that gave rise to the *s*-cases is preserved in those branches where it did not develop into part of a case suffix, so in Permic and Ugric. A possible candidate Ylikoski discusses is North Khanty *ʟipi* 'inside, interior; intestines' ~ East Khanty *tiɣpi* 'id.', since an *ʟ* in Proto-Khanty is the reflex of an original PU **s*. These Khanty words function both as nouns and as the basis for postpositions, e.g. North Khanty *ʟipija* ' inside-LAT = (in)to' and *ʟipijin* 'inside-LOC = in'. The base *ʟipi / tiɣpi* is itself a compound, as seen in Vakh (East) Khanty *ləɣ-peḷək* 'inside, interior', and the first part can be tentatively connected to Finnic *seka-* 'mix, something mixed' < **sekä-* ~ North Saami *seahki* 'confusion, disorder, etc' < Proto-Saami **seahkē*. The Saami word also forms the basis for the Lule Saami postposition *siegen* 'with; among; in the middle of' (Ylikoski 2016: 54-56). If this connection is correct, the Proto-Uralic reconstruction of the postposition that gave rise to the *s*-cases could be **sekä-*, **seki-* or **sexi-* (ibid.: 57).

Ylikoski supports the idea that the Samoyedic coaffix -*ntə* is a direct counterpart of the western coaffix -*s*-. The loss of the genitive **-n* before **-s-* in the Saami, Finnic, Mordvin and Mari branches would be exceptional, but not unthinkable. The cluster **ns* is unattested in Proto-Uralic word roots (although Finno-Saami **ns* apparently > Saami *s(s)* and Finnic *(n)s*), and the large clusters **nsn* and **nst* of the new locative and ablative in particular would understandably be reduced in some way (Ylikoski 2016: 58). In Samoyedic, PU **tuli(-n) seCV-ŋ* 'into the fire' developed via PSmy. **tuj-ntVŋ* into e.g. Ngan. *tu-tˈə̂* and NenT *tu-nə∅*, while PU **tuli(-n) seCV-na* 'in the fire' > Ngan. *tu-tˈə̂nu*, without cognates in any of the other Samoyedic languages. The ablative phrase PU **tuli(-n) seCV-ta* 'from the fire' is not attested in any of the Samoyedic languages. Ylikoski also points out that the difference between the local suffixes of ordinary nouns and spatial nouns in Samoyedic can be understood as a corollary of a postpositional origin of the coaffixes: phrases like **tuli-n üli-ŋ* 'fire-GEN on-LAT = onto the fire', **tuli-n i̯la-ŋ* 'fire-GEN under-LAT = under the fire' and more hypothetical **tuli(-n) seCV-ŋ* 'fire-GEN inside(?)-LAT = into the fire' are natural, whereas the likes of **tuli-n üli-n seCV-ŋ* 'fire-GEN on-GEN inside(?)-LAT' seem both useless and grammatically awkward (Ylikoski 2016: 59).

A possible additional argument in favour of deriving the **n* in **-ntə* from a genitive placed before a postposition is the agreement of local cases with adjectives in the genitive in Nganasan (cf. 4.1.8). On the surface, it would be entirely straightforward to derive the genitival inflection of adjectives in Nganasan from original agreement with the head noun governed by a relational noun turned postposition turned coaffix. The genitive is the case form most likely to be reconstructed in such instances for Proto-Uralic (cf. Ylikoski 2011: 240), and if there were adjective agreement, the accompanying adjective should be in the genitive as well. By assuming an original postpositional phrase for the local cases in the Samoyedic languages, the use of attributive adjectives in the genitive in combination with the local cases in Nganasan is just as expected. A problem with this scenario is that attributive adjectives mostly do not agree with their head nouns in Uralic, and lack of agreement is regarded as the more original situation (cf. Rießler 2016: 125-126). Among the Samoyedic languages, lack of agreement is also more wide-spread, from which it follows that a reconstruction of such agreement to the time that the coaffixes were still postpositions is not quite compelling.

The semantics of the local cases are also worth considering. Since in Finnic the *s*-cases are the internal local, cases the same original meaning could be posited for pre-PSmy. **-ntə*. In fact, there might be some traces of an original preference for the local cases to refer to internal distinction in the extant Samoyedic languages. This is the situation obtained for Forest Enets, where postpositions are used to denote external location, reserving the local cases for internal location (Siegl 2013: 157). In Nganasan, a superessive (external) position is rarely expressed using a locative, as normally the postposition *ńini* is used in such a situation (Wagner-Nagy 2019: 197). Furthermore, the Selkup cases

that correspond to the lative, locative and ablative in other Samoyedic languages are the illative, locative and elative, none of which are used for animate referents (Helimski 1998: 561; Kuznecova 2002: 98). Castrén describes something similar as well, stating: "Zur Angabe von Raumverhältnissen gebraucht, beziehen sich diese Casus [= lative, locative, and ablative] vorzüglich auf den innern [...] Raum" (1854: 108).

The source of the coaffix *-kə has not been discussed as much in the literature, but the analysis of *-ntə as a direct cognate to the western s-cases raises some interesting points. First of all, it means that a Proto-Uralic date for the syntactic construction that gave rise to the *-ntə- coaffix (PU *-n + *seCV-ŋ and *-n + *seCV-na) is virtually assured.[29] The comparison with the s-cases in other Uralic languages implies that there would have been no semantic restriction on the use of the ablative form of the postposition *seCV-ta in Proto-Uralic. This makes it possible that not only the lative and the locative were present at some point in pre-Proto-Samoyedic, but also an earlier ablative *-ntə-tə < *-n + *seCV-tə, which was replaced by *-kə-tə before the Proto-Samoyedic period.

Alternatively, the ablatival phrases like PU *tuli-n sV(...)-ta 'from the fire' may never have grammaticalized in the ancestor to Samoyedic, for some reason, and were lost before they ever could result in a complex ablative case suffix **-ntə-tə. The absence of an ablatival s-case in Mari, which uses the postposition gə̂č́[30] instead provides an interesting parallel to Samoyedic. As long as the origins of the coaffix *-kə remains unclear, it will be difficult to say more on this matter, however.

4.2.4 The problem of the prolative

The prolative case *-m(ə)na looks like it consists of a coaffix *-m(ə)- followed by the locative suffix *-na. Janhunen (1998: 469) suggests that the *-m(ə) might have originated in the accusative *-m. Original local semantics are sometimes assumed for the accusative *-m (cf. e.g. De Smit 2014), but it is not immediately apparent how a combination of an accusative and a locative would yield prolative semantics. A lative function as advocated by Kortlandt (2008) combined with the locative semantics of *-na might give a prolative meaning, but the details remain unclear.

The formation of the prolative plural in the northern Samoyedic languages on the basis of the genitive plural is a more concrete obstacle to this suggestion. As discussed above (4.2.2; as per Däbritz 2017: 75), this indicates that -məna was perceived as a postposition at the time the prolative plural was formed. If this is correct, an important implication would be that the age of the prolative is probably not to be overestimated, and that it should not be put on the same level as the other three cases. Since a convincing etymology for the prolative is lacking, however, it seems prudent not to draw any strong conclusions at this point.

4.2.5 The prehistory of the predestinative

The predestinative of the northern Samoyedic languages and difficulties regarding its analysis were introduced in (4.1.6). Its reconstruction for Proto-Samoyedic would rest solely on the northern Samoyedic languages, were it not that it has received an etymology going back to Proto-Uralic. Janhunen (1989) connected the Samoyedic predestinative suffix *tə with the Proto-Uralic translative

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[29] It would go too far to suggest that Ugric was the first branch to split off based on this single factor, but it might be something to take into account in the discussion on Uralic phylogeny.
[30] Possibly even related to PSmy. *-kə-tə; see Ylikoski 2016: 61 for very tentative speculation of this nature.

suffix *-*ksi*, which has reflexes in Finnic, Mordvin, and possibly also Mari (see Ylikoski 2017). The phonological development is regular; cf. PU *suksi* 'skis' > PSmy. *tutə* : Finnish *suksi*.

As discussed in 4.1.6, Siegl does not regard the predestinative/benefactive as a case, at least in Forest Enets. He also does not think that Janhunen's connection of the northern Samoyedic predestinative with *-*ksi* holds much merit from a syntactic point of view, "as the Finnic translative is preferably found in adjuncts, but not on core arguments as in northern Samoyedic" (Siegl 2013: 402). Siegl does not provide any examples to support this conclusion about the functional gap between the two categories, but Ylikoski has responded to Siegl's claim, giving an example sentence that rather shows the opposite (see ex. 11.a and 11.b). Apparently, the Forest Enets predestinative *bii-đu-ń* 'in.law-PRD-GEN.1SG' can be translated using a Finnish translative *vävy-kse-ni* 'son.in.law-TRA-1SG'. What is more, these forms could be exact cognates, going back to Proto-Uralic *wäŋiwi-ksi-ni*, according to Ylikoski. In the Hill Mari paraphrase (ex. 11.c), a similar construction is used with the Mari lative -*eš*, argued by Ylikoski to be cognate with the Finnic and Mordvin translatives in *-*ksi*, although the form *βiŋ-eš-em* 'son.in.law-LAT-1SG' rather seems to go back to *wäŋiwi-ksi-mi*, with an *m* in the possessive suffix (Ylikoski 2017: 411). Finally (ex. 11.d), the Moksha Mordvin form *ovks* could go back to the same source, but without a possessive suffix (ibid.).

11. (a) Forest Enets

uu   *bii-đu-ń*   *ebut*   *soiđa*

2SG   in.law-**PRD**-GEN.1SG   be.CVB.2SG   good.3SG

'If you were my son-in-law, this would be good.' (Siegl 2013: 386, cited in Ylikoski 2017: 411)

(b) Finnish

Sinä   *olisit*   *hyvä*   *vävy-kse-ni*

2SG   be.COND.2SG   good   son.in.law-**TRA**-1SG

'You would make a good son-in-law to me.' (from Ylikoski 2017: 411)

(c) Hill Mari

Təń   *βiŋ-eš-em*   *lač*   *liät*   *âlfâ*

2SG   son.in.law-**LAT**-1SG just.right   be(come).2SG   be.PST.3SG

'You would make a very good son-in-law to me.' (from Ylikoski 2017: 411)

(d) Moksha Mordvin

molˊan   *ov-ks*   *śä*   *śtˊeŕetˊ*   *laŋks*

go.1SG   son.in.law-TRA   that   girl.DEF.GEN   on

'I will marry that girl and become a son-in-law with his family.' (from Ylikoski 2017: 412)

It thus appears that the western Uralic descendants of the suffix *-*ksi* have some overlap with the Samoyedic predestinatives. It is true that in Samoyedic the predestinative suffix does not have the same meaning of 'becoming' as found in the western Uralic translative, but as Ylikoski points out, the extant "essive-translative" constructions with such semantics in northern Samoyedic are recent grammaticalizations from converbs of copulas, which might indicate that these newer constructions took over some of the earlier functions of the suffix *-*tə* (Ylikoski 2017: 405). Ylikoski lists the

proposed reconstruction of the original function of Proto-Uralic *-ksi* as denoting purpose, or, since a non-purposive future-oriented function is also widespread, it could be that the suffix originally had less specific future meaning (see Ylikoski 2017 for further references).

the use of Samoyedic *-tə* is relatively limited in the extant languages, so much so that its status as a case suffix is disputed. I assumed above that the suffix was already restricted to use with some sort of possessor (either in the form of a possessive suffix or an accompanying genitive) in Proto-Samoyedic, but when this restriction initially occurred cannot be determined. According to Siegl, there might be a connection with similar types of constructions in various other language groups spoken in central Siberia: similarly functioning benefactives are found in both Ket and Yugh of the Yeniseian family, and in various Tungusic languages. Perhaps the Proto-Uralic suffix *-ksi* was co-opted for the predestinative construction specifically as Samoyedic came into contact with languages where these constructions were used (Siegl 2013: 402-403 with references).

4.2.6 The pre-Proto-Samoyedic case system

Presented here are three scenarios for the development of the Proto-Samoyedic local case system from Proto-Uralic, focusing on the singular case forms. The first two I developed myself based on the literature, where I found nothing concrete enough to form the foundation of a comparison with Tocharian. The scenario in Table 7 works with a maximally elaborate case system that collapsed in the period leading up to Proto-Samoyedic, whereas the second scenario (in Table 8) explains the discrepancy in the use of coaffixes between Nganasan and the other Samoyedic languages on the basis of an analogical spread of *-kə*. Lastly, the third scenario (in Table 9) is my interpretation and visualisation of Janhunen's (1998: 469) thoughts on the matter and treats the coaffixes as (as yet unexplained) additions to the primary cases in the final stages of pre-Proto-Samoyedic.

All three scenarios are divided in Proto-Uralic, pre-Proto-Samoyedic I and II, and Proto-Samoyedic stages. The prolative might be a relatively recent addition to the local case system of early Samoyedic (cf. 4.2.4). At which stage it first appeared cannot be determined exactly, but for now I reconstruct it for the period leading up to Proto-Samoyedic, i.e. pre-PSmy. II. Since the Samoyedic predestinative *-tə* is likely cognate to the translatives in *-ksi* in western Uralic (cf. 4.2.5), this case can be added to the paradigm.

Table 7. Scenario 1: The local coaffixes of the lative, locative and ablative originate from two distinct sets of postpositional phrases (in the Proto-Uralic column) that later merged semantically (column pre-PSmy. II) and were in the process of being levelled per case in the Proto-Samoyedic period.

	Proto-Uralic	pre-PSmy. I	pre-PSmy. II	PSmy.
lative 1	"*-n sV(...)-ŋ*"	*-ntə-ŋ*	*-ntə-ŋ ~*	*-ntə(-ŋ)*
lative 2	"**-n ?kV(...)-ŋ*"	***-kə(-ŋ?)*	~ ***-kə(-ŋ?)*	—
locative 1	"*-n sV(...)-na*"	*-ntə-na*	*-ntə-na ~*	*-ntə-na ~*
locative 2	"*-n ?kV(...)-na*"	*-kə-na*	~ *-kə-na*	~ *-kə-na*
ablative 1	"**-n sV(...)-ta*"	***ntə-tə*	***ntə-tə ~*	—
ablative 2	"*-n ?kV(...)-ta*"	*-kə-tə*	~ *-kə-tə*	*-kə-tə*
prolative	??	??	*-m(ə)na*	*-m(ə)na*
tra. > prd.	*-ksi*	*-tə*	*-tə*	*-tə*

Table 8. Scenario 2: The ablative was grammaticalized from a different source than the lative and the locative, but it later influenced the locative singular and the plural in all of Samoyedic except Nganasan—this could be a post-Proto-Samoyedic innovation, if Nganasan is indeed the first to split off. (The upward arrows "↑↑" indicate influence by analogy.)

	Proto-Uralic	pre-PSmy. I	pre-PSmy. II	PSmy.
lative	"*-n sV(...)-ŋ"	*-ntə-ŋ	*-ntə-ŋ	*-ntə-ŋ
locative	"*-n sV(...)-na"	*-ntə-na	*-ntə-na	*-ntə-na ~ ~ *-kə-na
ablative 1	"**-n sV(...)-ta"	—	—	↑↑
ablative 2	"*-n ?kV(...)-ta"	*-kə-tə	*-kə-tə	*-kə-tə
prolative	??	??	*-m(ə)na	*-m(ə)na
tra. > prd.	*-ksi	*-tə	*-tə	*-tə

Table 9. Scenario 3: The coaffixes were being added in between the stem and the primary case suffixes in the period leading up to Proto-Samoyedic (this indicated by the signs "< >"). The original identity or source of the coaffixes is unknown.

	Proto-Uralic	pre-PSmy. I	pre-PSmy. II	PSmy.
lative	*-ŋ	*-ŋ	*<ntə>-ŋ	*-ntə-ŋ
locative	*-na	*-na	*<ntə>-na ~ ~ *<kə>-na	*-ntə-na ~ ~ *-kə-na
ablative	*-ta	*-tə	*<kə>-tə	*-kə-tə
prolative	—	??	*<m(ə)>-na	*-m(ə)na
tra. > prd.	*-ksi	*-tə	*-tə	*-tə

Of these three scenarios, the first entails the most extra assumptions: there is no actual evidence for the existence of a full set of *kə*-cases, and the grammaticalization of an ablative *ntə*-case is based on the idea that it is cognate to the western Uralic *s*-ablative. The second and third scenarios differ mostly in the details of the development envisioned in them. The analogy assumed in the former is not ideal, but the latter does not describe the developments in a way that I find satisfactory. For my comparison with Tocharian, I will use the system described in scenario 2, since on the one hand it does not entail as many extra assumptions as scenario 1, and on the other hand it provides a concrete scenario for the formation of the new Proto-Samoyedic local cases, as opposed to scenario 3. It thus constitutes a more solid foundation for comparison.

5 The Tocharian and Samoyedic case systems compared

In the previous two chapters I have treated the Tocharian and the Samoyedic case systems (chapters 3 and 4 respectively), from both synchronic and diachronic perspectives. In this chapter I compare these case systems with one another in terms of their structure (5.1), the functions of cases (5.2), and the way in which the cases developed (5.3).

5.1 Comparison of the systems

When looking at the (pre-)Proto-Tocharian and the (pre-)Proto-Samoyedic case systems side by side, there seems to be some good overlap on the one hand, but also some significant discrepancies. If we restrict ourselves to the local cases, the uncertainty regarding the age of the Samoyedic prolative is the only problem (cf. 4.2.4). There seems to be no indication of a dedicated comitative at any time in the history of Proto-Samoyedic (cf. 4.1.5), which means that the Tocharian comitative cannot receive an explanation from contact with this language group. The continuation of a dative-locative in Tocharian cannot be explained from Samoyedic either, but since this would be a Proto-Indo-European archaism that eventually disappeared, it does not seem to me a very great obstacle. It was also already on its way out in Proto-Tocharian, being restricted to a single morphological class of nouns, and some adjectival and adverbial formations (cf. 3.2.3). Tocharian Gruppenflexion has no real correspondence in Samoyedic either, as the only similar behaviour is found in the adjective agreement of Nganasan (cf. 4.1.8). The predestinative, which could still have functioned as a translative at the hypothetical time of contact (cf. 4.2.5), has no Tocharian counterpart. The comparison can be summarised as in Table 10.

Table 10. The Proto-Samoyedic and Proto-Tocharian secondary case systems compared.

(pre-)PT	PSmy.	pre-PSmy.	PU
allative	lative	lative	lative
dative-locative?	—	—	—
locative	locative	locative	locative
ablative	ablative	ablative	ablative
perlative	prolative	prolative (age?)	—
comitative	—	—	—
—	predestinative ←	translative/predestinative ←	translative

5.2 Functional comparison

If we turn to the functions of the individual cases as they can be reconstructed for the respective proto-languages, and assume that the same functions applied to their earlier stages, it appears the correspondence is imperfect. Due to the lack of a Samoyedic comitative and a Tocharian predestinative, only the use of the local cases can be compared. The allative in Tocharian (3.1.1) is not used to indicate movement into an object, whereas this an important (and possibly the most original) function of the Samoyedic lative case (4.1.1, cf. 4.2.5). Tocharian furthermore does not use the allative as a dative in native texts, whereas this is one of the prominent functions of the lative in

Samoyedic languages. Considering the development of another strategy to mark the dative in Selkup, this might be a post-Proto-Samoyedic development, however. The Tocharian locative (3.1.2) incorporates movement in its meaning, as well as location. This makes it the functional equivalent of both the Samoyedic locative (4.1.2) and lative (4.1.1), disregarding the (in Proto-Samoyedic probably limited) instrumental function of the former. The ablative case appears to have the same core meaning in Tocharian (3.1.3) and Samoyedic (4.1.3), and if the Tocharian A use of the ablative for the standard of comparison is taken to be original, the match is quite exact. The Tocharian perlative (3.1.4) has more functions than can be reconstructed for the Proto-Samoyedic prolative (4.1.4), but not all of the functions are certain to be old. It is reasonable to reconstruct the use of the perlative to denote an instrument as in TB, given the innovative nature of the TA instrumental in -*yo* (cf. 4.1.6). Naturally, the perlative cannot have been the standard of comparison, as it is in TB, if the ablative was the original case used for this function, as it is in TA. It remains difficult to say for sure, however.

These differences between the systems need not be entirely detrimental if we can explain why an interference feature was incorporated differently in the receiving language compared to what it was like in the source language (cf. 2.5). It is particularly the Tocharian locative and perlative that are functionally at odds with the corresponding cases in Samoyedic—why should this be? One possibility is that the postpositions that were available in the pre-Tocharian to be transformed into case endings due to pre-Samoyedic interference were not all wholly compatible with the pre-Samoyedic cases. For example, the perlative can be connected with the PIE adposition *h_2ed, which has directional (Lat. *ad* 'to, up to, into) as well as locational semantics (as in English *at*) (cf. 3.2.1). Maybe it is therefore expected that a perlative case created on the basis of this preposition would incorporate the same two meanings. If the postposition that gave rise to the locative had similar ambiguous semantics as to whether it denoted internal location or movement "into", it would quite naturally give rise to a Tocharian locative case that is not a precise match for the more purely locational locative of Samoyedic and Uralic languages in general.

Could the mismatches thus be forgiven? The Proto-Tocharian and the Proto-Samoyedic cases are shown side by side in Table 11.

Table 11. The Proto-Samoyedic and Proto-Tocharian case systems compared; the first function listed is considered to be the more original (local) function(s), with other (grammatical) functions developing later listed second.

Case / functions in:	Proto-Tocharian	Proto-Samoyedic
(al)lative	direction of movement	movement into; direction of movement; dative?
locative	internal location; movement into	(internal) location; instrument?
ablative	source; starting point; standard of comparison?	source; starting point; standard of comparison
perlative	path or direction of movement; external location; cause; instrument? standard of comparison?	path of movement
comitative	accompaniment	—
predestinative	—	X{PRED} for … [Y{GEN/POSS}]; future reference? (translative?)

5.3 Developmental comparison

The precise details of how the case systems of Tocharian and Samoyedic developed are not entirely clear or agreed upon at the present stage of research. However, it seems that both recruited earlier postpositional elements to form new cases (see 3.2.1-3.2.2 and 4.2.3-4.2.6). The first stage of this development is also found in TB *spe* 'near', which points to a general dependency of postpositions on the noun they belong with in early Tocharian. Samoyedic postpositions tend to remain independent inflected entities, but the Selkup local cases for animate nouns based on the postposition **nä-* show that the use of postpositions for the creation of new cases is consistently a possible path for deriving new cases in this language family.

A discrepancy is that the basis for the Tocharian secondary cases was the oblique/accusative, whereas in Samoyedic, and in Uralic more generally, the genitive is used before postpositions. This mismatch can also receive an explanation: primary adpositions in Indo-European languages often select for the accusative, dative or locative, and as a consequence the use of one of these cases in Tocharian is expected. The strategy used to expand the local case systems in Tocharian and Samoyedic is thus largely the same.

6 Conclusions

In this final chapter I will base my conclusions regarding the likelihood of Samoyedic influence on the Tocharian agglutinative case system on an evaluation of the comparison between the (pre-)Proto-Samoyedic and (pre-)Proto-Tocharian case systems (chapter 5) as per Thomason's criteria for how to establish whether a certain linguistic feature is due to interference from another language (see 2.5).

Was there interference on multiple levels?

To make a convincing scenario for contact induced change, the receiving language should be influenced by the same source language in more than one way. The clearest indication for Uralic structural influence in Tocharian is to be found in the phonology of the stops, and the vowel system shows parallels with the Samoyedic branch in particular (cf. 2.3.1). In the domain of morphology and word formation other parallels between the two groups can be found as well, but these are admittedly less exact (cf. 2.3.2). Uralic or Samoyedic influence on Tocharian can thus be found in structural domains other than the case system, which means that this criterion is met.

Was contact between the supposed source language and the receiving language intimate enough?

It cannot be established how intimate the contact situation of Tocharian and Samoyedic was. For now, it will have to be sufficient to note that a historical scenario for contact between the two groups is possible (cf. 2.1, 2.4), and that this possibility is supported by a handful of loanwords that seem to have passed between Tocharian and Samoyedic (cf. 2.3.3).

Are the relevant features shared between the source language and the receiving language?

The case systems of Tocharian and Samoyedic are similar as regards the local case system: both have an (al)lative, locative, ablative and perlative/prolative case. The Tocharian comitative and Gruppenflexion have no Samoyedic correspondence, which means that these two aspects of the Tocharian case system cannot be explained based on Samoyedic influence (cf. 5.1). There is no Tocharian match for the Samoyedic predestinative (if that was still an actual case in Samoyedic at the time of contact), but the lack of transfer of a feature to the receiving language is less detrimental to a contact explanation. The Tocharian ablative semantically conforms closely to the Samoyedic ablative. The (al)lative, locative and the perlative do not quite match when comparing Tocharian to Samoyedic, however. The discrepancies might be explained with recourse to the original semantics of the postpositions that formed the basis of the Tocharian cases, as these were possibly not defined in the same terms as those of the tripartite division of local cases in Samoyedic (cf. 5.2). The way in which the new cases were formed is decidedly similar, as both Tocharian and Samoyedic have made use of erstwhile postpositions to expand their case systems (cf. 5.3).

Were the proposed interference features NOT present in the receiving language before contact?

The elements used to create the Tocharian secondary cases were inherited from Proto-Indo-European, but the way they were incorporated into the Tocharian case system is a later innovation. Thus the relevant features were not present in the receiving language before contact (cf. 2.2, 3.2).

Were the proposed interference features present in the source language before contact?

Samoyedic inherited lative, locative and ablative case endings from Proto-Uralic. These original endings continued to be used on spatial nouns, while regular nouns received case new suffixes for which the foundation was likely already laid in Proto-Uralic in the form of postpositional phrases. The formation of new cases from postpositional elements is a staple of the Uralic languages in general (e.g. Permic, Hungarian), and of later Samoyedic as well (e.g. the Selkup cases based on *$nä$-). The origins and age of the Samoyedic prolative remains uncertain, although there are arguments to suppose that it is a relatively recent addition to the Samoyedic case system. Otherwise the roots of the Samoyedic case system go deep, and it certainly predates contact with Tocharian (cf. 4.2).

Based on these criteria, the main problems with the hypothesis that the Tocharian agglutinative case system is the result of contact with can be summarised in two points, namely (i) there is no known (pre-)Proto-Samoyedic match for the Tocharian comitative, and (ii) the functions of the cases do not all overlap exactly (especially the locative and perlative/prolative). It is theoretically possible that an earlier comitative did exist in the early Samoyedic of those who shifted to Tocharian, but that it got lost later on. The comitative could also be a later addition to the Tocharian case system, perhaps as a result of contact with some other language that the Tocharians encountered on their long trek to the Tarim Basin. For the discrepancies between the semantics of the Tocharian and Samoyedic cases I have offered an explanation involving the original semantics of the Proto-Indo-European elements that were used to form the new Tocharian secondary cases—this to be regarded merely as a tentative solution.

It further has to be admitted that not all aspects of the prehistory of the Tocharian and Samoyedic case systems is clear at the present stage of research. On the Tocharian side, the etymologies of the comitatives TA -*aśśäl* and TB -*mpa*, as well as that of the TB ablative -*meṃ*, are still unclear. The age of the Tocharian secondary cases is also still difficult to determine, which means that they could possibly be too recent to be caused by a Samoyedic substrate. There are especially many remaining questions regarding the Samoyedic case system. In particular, the origins of the coaffix *-$k\partial$ are still largely unexplored, and the age of the prolative is uncertain. The specifics of the development of the case systems are still underresearched, and the scenarios I discussed in 4.2.6 necessarily remain provisional. If the Samoyedic case system turns out to have developed in a different way, the comparison with Tocharian would have to be re-evaluated.

As it stands, I suggest that the Tocharian agglutinative case system can be understood as the result of a shifting population of Samoyedic speakers in the following way. The elements that eventually gave rise to the Tocharian secondary case systems stem from Proto-Indo-European, and these would thus already have been present in Tocharian before contact. When a significant number of Samoyedic speakers shifted to Tocharian, however, they conceptualised certain postpositional elements in Tocharian (viz. the ancestral forms of PT *-$c\partial$, *-$n\ddot{e}$, *-$\partial \mathcal{s}$, *-a) as functionally equivalent to the local cases that existed in their own native language (viz. lative, locative, ablative and prolative). As a result, the use of these postpositional elements increased dramatically, resulting in their eventual reinterpretation as case endings by the following generations of Tocharian speakers. The comitative remains without an explanation, but I think that the remainder of the Tocharian agglutinative cases can be understood as the result of Samoyedic influence.

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