

STRATIGRAPHY OF INDO-EUROPEAN LOANWORDS IN SAAMI

Abstract

Over the past few decades, our knowledge of Indo-European loanwords in Saami has been increased dramatically, thanks to Jorma Koivulehto, Pekka Sammallahti and Ante Aikio. The objective of my paper is to present a state-of-the-art survey of the field that introduces non-specialists to this recent progress. I shall also discuss what a stratigraphy of these loanwords can tell us about Saami prehistory.

Keywords:

Indo-European, Saami, loanword strata, chronology, prehistory

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Over the past few decades, our knowledge of Indo-European loanwords in Saami has been increased dramatically, thanks to Jorma Koivulehto, Pekka Sammallahti and Ante Aikio (see Sammallahti 1998: 117–131, supplemented by Koivulehto 1999–2007; Sammallahti 1999, 2001; Aikio 2006). The objective of my paper is to present a state-of-the-art survey of the field that introduces non-specialists to this recent progress.

Fortunately, we need not deal with all the reconstructed Proto-Indo-European phonemes in order to distinguish between different loanword strata. There are some phonemes (e.g. **m*, **n* and **r*) that have hardly changed phonologically between the Indo-European proto-language and its present-day daughter languages. However, there are some other phonemes that have not remained unchanged anywhere. It goes without saying that only the latter phonemes are important when we try to determine the exact source of Indo-European loanwords in Saami.

In this respect, one of the most crucial phonemes is the Proto-Indo-European voiceless palatal stop **k'*, whose word-initial outcomes in Indo-Iranian, Balto-Slavic as well as Germanic are given in the table below. (For the sake of clarity, I have omitted all the Indo-European branches that have never been in contact with Saami or its earlier stages.)

Proto-Indo-European				
<i>*k'</i>				
<i>*č</i>				<i>*k</i>
<i>*č</i>		<i>*š</i>		<i>*x</i>
<i>*ś</i>	<i>*c</i>	<i>*š</i>	<i>*s</i>	<i>*h</i>
Indic	Iranian	Baltic	Slavic	Germanic

Because both Uralic in general and Saami in particular have a considerable series of affricates and sibilants, especially the Indo-Iranian and Balto-Slavic representatives of Proto-Indo-European **k'* are so well-reflected in borrowings that we can easily determine their source language. Before doing so, however, it is necessary to remind readers of the development of word-initial affricates and sibilants from Proto-Uralic to North Saami (see, e.g. Korhonen 1981: 128–130).

Proto-Uralic				
<i>*ś</i>	<i>*š</i>	<i>*č</i>	<i>*š</i>	<i>*č</i>
<i>*ś</i>		<i>*c</i>	<i>*č</i>	
<i>s</i>		<i>c</i>	<i>č</i>	
				<i>*š</i>
				<i>š</i>

North Saami

Remarkably, Proto-Saamic **š* (> North Saami *š*), in the right-hand column of the table above, does not occur pre-vocally in any word inherited from Proto-Uralic or even from Proto-Finno-Saamic. Therefore, pre-vocalic **ś* must be considered as a

newcomer in the Proto-Saamic consonant system, filling the gap that arose from the earlier pre-vocalic shift $*ʃ > *č$ (cf. Sammallahti 1998: 190).

In the following, I shall list some representative (rather than exhaustive) examples of each Proto-Saamic reflex of Proto-Indo-European $*k$. In order to avoid excessive diacritics, my Proto-Saamic reconstructions rely on Juhani Lehtiranta's consonantism (1989) and Pekka Sammallahti's vocalism (1998).

PROTO-INDO-EUROPEAN $*k̑$ ~ PROTO-SAAMIC $*č$

Ever since the 19th century, it has generally been acknowledged that in the earliest Indo-European loanword stratum, Proto-Indo-European $*k̑$ corresponds with Proto-Saamic $*č$. Earlier, however, such words were usually considered borrowings from Indo-Iranian (cf. Joki 1973: 311; Rédei 1986: 47).

- Proto-Indo-European $*k̑m̑-to-$ > Proto-Indo-Iranian $*čata-$ '100' → Proto-Finno-Ugric $*šalēta$ > Proto-Saamic $*čuotē$ > North Saami $čuoh̄ti$ '100'.
- Proto-Indo-European $*k̑ȓ-uh_2$ > Proto-Indo-Iranian $*črvā$ 'horn' → Proto-Finno-Ugric $*šorwa$ > Proto-Saamic $*čoarvē$ > North Saami $čoarvi$ 'horn'.

Note that the oppositions $*č \sim *ʃ$ and $*č̑ \sim *ʃ̑$ had been neutralized relatively early in word-initial position (see Kallio 2007: 231), where the Indo-European affricates were therefore replaced by the corresponding Uralic sibilants. On the other hand, as there was no Uralic palatal stop, the Uralic palatal affricates and sibilants were substituted for the Proto-Indo-European palatal stops (Koivulehto 1983: 111–120, 1999b: 231–238). Hence, the word for 'horn' could in fact be considered a Proto-Indo-European loanword as well (whereas the word for '100' could not because it reflects the Indo-Iranian development $*m̑ > *a$).

In fact, the same word for 'horn' could even be regarded as a borrowing from Early Proto-Balto-Slavic $*šȓvo-$ although this alternative is far less probable because the meaning 'horn' is not attested in Balto-Slavic, but only 'horny' (> 'roebeek' in Old Prussian *sirwis*) is. In any case, there are examples that could be considered as borrowings from Proto-Indo-European as well as from Proto-Balto-Slavic:

- Proto-Indo-European $*k̑or-mo-s$ > Proto-Balto-Slavic $*šarmas$ 'frost' → Pre-Saamic $*šalormēš$ > Proto-Saamic $*čuormēs$ > North Saami $čuorpmas$ 'hail' (Koivulehto 1983: 116–117, 2006a: 188–189).
- Proto-Indo-European $*k̑uk-ah_2$ > Proto-Balto-Slavic $*šukā$ 'comb' → Proto-Finno-Saamic $*šuka$ > Proto-Saamic $*čokō-$ > North Saami $čohkut$ 'to comb' (N.B. this etymology is my corrected version of several earlier proposals going back as far as Ahlqvist 1871: 72).

Note that the Proto-Finno-Saamic word for 'comb' has nothing to do with the similar Volgaic and Permic words for 'chaff' and 'awn', which are separate borrowings from Proto-Indo-Iranian $*čūka-$ 'awn, sting, needle' (cf. Joki 1973: 315–316; Rédei 1986: 59–60).

In conclusion, the earliest Indo-European loanword strata in Saami, namely Proto-Indo-European, Proto-Indo-Iranian and Proto-Balto-Slavic, are also the most difficult to distinguish. This fact makes sense, of course, since the further back we go in time, the closer the Indo-European languages are to each other. Unfortunately, the Indo-European phonemes whose Saami substitutes best reveal the source language of the loanword in question occur only in a relatively few words (cf. Proto-Indo-European $*m̑, *n̑ > Proto-Indo-Iranian *a$; Proto-Balto-Slavic $*im, *in$; Proto-Germanic $*um, *un$).

PROTO-INDO-EUROPEAN $*k̑$ ~ PROTO-SAAMIC $*č$

While the correspondence between Proto-Indo-European $*k̑$ and Proto-Saamic $*č$ has been acknowledged for a long time, the connection between Proto-Indo-European $*k̑$ and Proto-Saamic $*č$ was not discovered until recently. As Jorma Koivulehto first demonstrated in the 1997 Lammi symposium (Koivulehto 1999a: 219–227), Proto-Iranian $*č$ was often replaced with western Uralic $*č̑$:

- Proto-Indo-European $*mok̑-o-$ > Proto-Indo-Iranian $*mača-$ > Proto-Iranian $*maca-$ 'gnat, mosquito, fly' → Proto-Finno-Saamic $*mačo$ > Proto-Saamic $*muocō$ > North Saami $muohcu$ 'moth' (Koivulehto 1999b: 11–12).
- Proto-Indo-European $*pek̑-u$ > Proto-Indo-Iranian $*paču$ > Proto-Iranian $*pacu$ 'cattle' → Proto-Finno-Permic $*počav$ > Proto-Saamic $*poacō-j$ > North Saami $boazu$ 'reindeer' (Koivulehto 2007: 251–255).

It was also possible to replace Proto-Iranian $*č$ with word-initial $*š̑$ and word-medial $*ks$ (see Koivulehto 1999a: 219–227), but there is not much left of this cluster in the only example in Saami that has been suggested so far:

- Proto-Indo-European $*dek̑m̑$ > Early Proto-Iranian $*deca$ '10' → Proto-Finno-Volgaic $*teksä$, prefixed with $*kāk(tä)/*ük(ti)$ '2/1' > Proto-Saamic $*kākčēl'ēkčē$ > North Saami $gávccilovcci$ '8/9' (Koivulehto 1999a: 224–225; Parpola 1999: 198–199).

In general, the number of Iranian loanwords is more limited in Saami than in any other Finno-Ugric branch, for obvious geographical reasons.

PROTO-INDO-EUROPEAN * \acute{K} ~ PROTO-SAAMIC * \acute{s}

As I mentioned above, Proto-Indo-European * k can in theory correspond with Proto-Saamic * \acute{s} in Iranian loanwords, but such examples are yet to be discovered. There are, however, numerous well-known examples of this correspondence in Baltic loanwords (for early discussions, see Thomsen 1890: 220–226; Kalima 1936: 93–104):

- Proto-Indo-European * $koi-no-$ > Proto-Balto-Slavic * $\acute{saina-}$ > Proto-Baltic * $\acute{saina-}$ ‘hay’ → Proto-Finno-Saamic * \acute{sajna} > Proto-Saamic * $\acute{suojn\bar{e}}$ > North Saami *suoidni* ‘hay’.
- Proto-Indo-European * $k\acute{r}\text{-}uo\text{-}s$ > Proto-Balto-Slavic * \acute{sirvas} > Proto-Baltic * \acute{sirvas} ‘roebuck’ → Proto-Finno-Saamic * \acute{sirvas} > Proto-Saamic * $\acute{s}\acute{e}rv\acute{e}s$ > North Saami *sarvv\acute{i}s* ‘reindeer buck’.

Almost all of about 40 Baltic loanwords in Saami seem to go back to the Proto-Finno-Saamic stage, and about 30 of them also have cognates in Finnic (Sammallahti 1998: 127). Yet there are at least five times as many Baltic loanwords in Finnic that seem to go back to the same stage. Because of etymological nativization (see Aikio 2007a), it is not at all impossible that most Baltic loanwords were borrowed into Proto-Saamic through Early or even Middle Proto-Finnic, irrespective of whether there were direct Balto-Saamic contacts as well. Moreover, even though the Proto-Saamic vowel system eventually became very different from the Proto-Finnic one (see, e.g. Korhonen 1981: 77–125; Sammallahti 1998: 181–189), the two vowel systems remained rather close to each other until the last centuries B.C. (see Aikio 2006: 39–40; Kallio 2006: 14–15), by which time most Baltic loanwords should already have reached Saami.

As for consonantism, Saami long remained even more conservative, and its few early changes, such as * \acute{s} > * \acute{s} (cf. Sammallahti 1998: 190–191), did not matter since the only remaining sibilant, * \acute{s} , can still have been substituted for Middle Proto-Finnic * \acute{s} , which only relatively recently yielded Late Proto-Finnic * \acute{h} (Kallio 2007: 237). Hence, the above-mentioned Saami words for ‘hay’ and ‘reindeer buck’ could indeed be considered Baltic borrowings through Middle Proto-Finnic.

- Proto-Indo-European * k > Proto-Balto-Slavic * \acute{s} > Proto-Baltic * \acute{s} → Middle Proto-Finnic * \acute{s} → Proto-Saamic * \acute{s} > North Saami *s*.

On the other hand, these two words could even be considered Balto-Slavic borrowings through Middle Proto-Finnic, which no longer had * \acute{s} due to the earlier development * \acute{s} > * \acute{s} (Kallio 2007: 233). Thus, Proto-Balto-Slavic * \acute{s} , too, could have been replaced with Middle Proto-Finnic * \acute{s} (if they coexisted):

- Proto-Indo-European * k > Proto-Balto-Slavic * \acute{s} → Middle Proto-Finnic * \acute{s} → Proto-Saamic * \acute{s} > North Saami *s*.

Indeed, we do not really know whether Proto-Balto-Slavic * \acute{s} > Proto-Baltic * \acute{s} was anterior or posterior to Early Proto-Finnic * \acute{s} > Middle Proto-Finnic * \acute{s} . Our only piece of evidence comes from loanwords which, in this case, are too open to interpretation because of several phonologically plausible loan substitutions. In general, there are many more possibilities than were recognized by traditional (pre-Koivulehto) scholars, who often considered letters rather than phonemes.

PROTO-INDO-EUROPEAN * \acute{K} ~ PROTO-SAAMIC * \acute{S}

As I noted earlier, Pre-Saamic * \acute{s} and * \acute{c} remained distinct only in pre-consonantal position, whereas in pre-vocalic position they merged into Proto-Saamic * \acute{c} . For this reason, Proto-Saamic pre-vocalic * \acute{s} is always proof of post-Proto-Finno-Saamic origin and, indeed, it occurs in numerous Finnic loanwords where it was substituted for Middle Proto-Finnic * \acute{s} and Late Proto-Finnic * \acute{s} in palatal environments (cf. Korhonen 1981: 130, 134–135, 161–163; Aikio 2006: 41). As recently discovered by Pekka Sammallahti (1999: 79, 2001: 400–401), Proto-Saamic * \acute{s} also occurs in some Indo-European loanwords, which he interprets to be Proto-Balto-Slavic:

- Proto-Indo-European * $ku\acute{o}n$ > Proto-Balto-Slavic * $\acute{s}(u/v)\acute{o}n$ ‘dog’ → Early Proto-Saamic * $\acute{s}al\acute{o}vonji$ > Proto-Saamic * $\acute{suovunj\bar{e}}$ > North Saami *\acute{s}\acute{u}von* ‘well-trained dog’.

While there is nothing etymologically wrong with Sammallahti’s example above, it is rather peculiar that none of the suggested Balto-Slavic loanwords with Proto-Saamic * \acute{s} are shared with any other Uralic language even though three quarters of the previously mentioned Baltic loanwords are shared with Finnic (cf. Sammallahti 1998: 127). On distributional grounds, therefore, the former would after all seem to date later than the latter. As Proto-Saamic * \acute{s} was frequently substituted for Middle Proto-Finnic * \acute{s} , it can very well have been substituted for Proto-Baltic * \acute{s} , too:

- Proto-Indo-European * k > Proto-Balto-Slavic * \acute{s} > Proto-Baltic * \acute{s} → Proto-Saamic * \acute{s} > North Saami *\acute{s}*.

The idea that the word for ‘well-trained dog’ above belongs to the very latest Baltic loanword stratum in Saami makes sense in many ways. First, its distribution is small, only covering North, Lule, Ume and South Saami. Second, it includes the secondary sibilant * \acute{s} of recent origin. Third, the Baltic source does not seem to be the old inherited root noun * $\acute{s}\acute{o}(n)$ (> Lithuanian *\acute{s}u\acute{o}* ‘dog’; Fraenkel 1965: 1033–1035), either, but one of its more recent Baltic derivatives, such as * $\acute{s}\acute{a}v\acute{a}$ (> Lithuanian *\acute{s}ov\acute{a}* ‘dog’; Fraenkel 1965: 1023), which could have been borrowed as Early Proto-Saamic * $\acute{s}avo$ or * $\acute{s}\acute{o}vo$ (see Koivulehto 2000 on the initial-syllable vowel substitution) and suffixed with * $-nji$ (Korhonen 1981: 318–319), despite similar suffixes in Baltic (cf. Lithuanian *\acute{s}vinis* ‘dog’; Fraenkel 1965: 1045).

PROTO-INDO-EUROPEAN **ǵ* ~ PROTO-SAAMIC **k*

Contrary to the Satem-branch Indo-Iranian and Balto-Slavic, the Centum-branch Germanic underwent the depalatalization **k̑* > **k*. Thus, Proto-Indo-European **k̑* corresponds to Proto-Saamic **k* in the earliest Germanic loanwords, whose detailed stratification has already been given by Jorma Koivulehto (2002: 583–590) and Ante Aikio (2006: 9–15). Therefore, suffice it to say that Proto-Saamic **k* can reflect any reconstructed stage from “Proto-Centum” **k̑* to Proto-Germanic **x* (irrespective of whether “Proto-Centum” **k̑* here goes back to Proto-Indo-European **k̑* or **k*).

- Proto-Indo-European **k̑ons-ab*₂ > Proto-Germanic **xansō* ‘crowd, host’ → Proto-Finno-Saamic **kansa* > Proto-Saamic **kuossē* > North Saami *guos’si* ‘guest’.
- Proto-Indo-European **kor-t* > Proto-Germanic **xard-jan* ‘to harden, to endure’ → Proto-Finno-Volgaic **kär̥ti-* > Proto-Saamic **kiertē-* > North Saami *gierdat* ‘to endure’.

The earliest Germanic loanwords in Saami are similar to its earliest Baltic loanwords in the sense that they seem to go back to the Proto-Finno-Saamic stage and that they are often shared with Finnic (but see Aikio 2006: 23–27 for some exceptions). As their number is once again higher in Finnic than in Saami, they, too, may largely have been borrowed into Proto-Saamic through Early or Middle Proto-Finnic:

- Proto-Indo-European **k̑/*k* > Proto-Germanic **x* → Middle Proto-Finnic **k* → Proto-Saamic **k* > North Saami *g*.

In any case, the earliest Germanic and Baltic loanwords in Saami (and in Finnic, for that matter) evidently date to the same period.

PROTO-INDO-EUROPEAN **ǵ* ~ PROTO-SAAMIC Ø

Still relying on the stratification by Jorma Koivulehto (2002: 583–590) and Ante Aikio (2006: 9–15), the next Germanic loanword stratum in Saami may be called Northwest Germanic whose **h* is no longer reflected at all (see Koivulehto 1999b: 364–367, 2002: 588–589; Aikio 2006: 10, 37–38 for further examples):

- Proto-Indo-European **kom-en* > Proto-Germanic **xamen-* > Northwest Germanic **hamen-* ‘hunting net’ → Early Proto-Saamic **amin* > Proto-Saamic **vuomēn* > North Saami *vuopman* ‘hunting fence’.
- Proto-Indo-European **keh₂p-o-s* > Proto-Germanic **xēbaz* > Northwest Germanic **hābaz* ‘fishing net’ → Early Proto-Saamic **ap(al)si* > Proto-Saamic **vuopsē* > North Saami *vuoksa* ‘depth of a fishing net’.

Contrary to the earlier Germanic strata, these words are never shared with Finnic, in which no foreign **h* can in fact be left unsubstituted. In spite of their exclusively Saami distribution, however, they were borrowed before the major Proto-Saamic vowel shifts although the Saami word for ‘depth of a fishing net’ was also borrowed after the Northwest Germanic lowering **ē* > **ā*, dated to the mid-first millennium B.C. (see Koivulehto 1999b: 14–15, 223, 271, 372).

Remarkably, **h* was still left unsubstituted in the following North Germanic loanword stratum that was borrowed after the major Proto-Saamic vowel shifts:

- Proto-Indo-European **kok-* > Proto-Germanic **xag-ja-* > North Germanic **hagja-* ‘bird cherry’ → Proto-Saamic **āvčē* > North Saami *ávža* ‘bird cherry’.
- Proto-Indo-European **kah₂u-* > Proto-Germanic **xau-ja-* > North Germanic **hauja-* ‘hay’ → Proto-Saamic **āvjē* > North Saami *ávji* ‘hay’.

Even so, both of the Saami words given above were borrowed before the *i*-umlaut began to affect the already distinct Northwest Germanic dialects from the middle of the first millennium A.D. onwards (based on runic evidence, for instance). Hence, the major Proto-Saamic vowel shifts must have taken place relatively rapidly during the last centuries B.C. and the first centuries A.D. (cf. Aikio 2006: 39–40).

On the other hand, there are apparently also borrowings from the same pre-umlaut stage in which the North Germanic **h* was preserved in Northwest Saami although left unreflected in East Saami:

- Proto-Indo-European **kor-t* > Proto-Germanic **xard-jō* > North Germanic **hardiō* ‘shoulder’ → Northwest Saamic **hārtijā* (~ East Saamic **ārtijā*) > North Saami *hárdu* ‘shoulder’.

As a matter of fact, many North Germanic loanwords whose vocalism suggests the same age are limited to Northwest Saami alone:

- Proto-Indo-European **koHi-* > Proto-Germanic **xai-ta-z* > North Germanic **haitaz* ‘hot’ → Northwest Saamic **hājttēs* > North Saami *hāittis* ‘burning hot’.

Hence, there is every reason to suppose that by the middle of the first millennium A.D., the Saamic proto-language had already begun to disintegrate into a dialect continuum, eventually developing into the modern Saami languages. As there is not much new to say about post-Proto-Saamic contacts, it is time to move on to some conclusions.

FROM LINGUISTIC STRATIGRAPHY TO SAAMI PREHISTORY

As we saw above, Indo-European loanwords in Saami can in theory be stratified on the basis of a single Proto-Indo-European phoneme, **k*, although in practice, of course, all of the phonemes must be taken into account. Obviously, the next question is what the stratigraphy of these loanwords can tell us about Saami prehistory (on which, cf. Sammallahti 2002; Carpelan 2005; Aikio 2006: 39–47).

First of all, we now know that Proto-Saamic had already disintegrated into an areally widespread dialect continuum by the middle of the first millennium A.D. (cf. Aikio 2004: 25–29). Less than a millennium earlier, however, Proto-Saamic itself was still a dialect of Proto-Finno-Saamic, rather than a separate language, because its major vowel shifts in particular were yet to take place. Remarkably, the same vowel shifts were shared by the extinct Saami substrate(s) that used to be spoken in Finland, Karelia and perhaps even further in the east (see Saarikivi 2004a; Aikio 2007b). As the largest documented Saami speech area therefore covered more than one million square kilometres, it can hardly be imagined that such complex, yet convergent, vowel shifts could have taken place in this whole area. This being the case, the Proto-Saamic speech area must have been considerably smaller in the last centuries B.C.

This early Iron-Age Proto-Saamic speech area can best be located by taking a look at the early Iron-Age loanword strata in Proto-Saamic. As North Germanic and Late Proto-Finnic date much later to the first millennium A.D., we must concentrate on their early Iron-Age predecessors, Northwest Germanic and Middle Proto-Finnic, respectively. It is also probable that the latest Baltic loanwords (e.g. those with Proto-Saamic **š*) similarly date to the last centuries B.C., but their number is so limited that they do not force us to relocate the early Iron-Age Proto-Saamic speech area too far to the south. Furthermore, Proto-Saamic has so many Northwest Germanic loanwords that its early Iron-Age speech area must have included Finland, east of which there seems to have been no Germanic presence until the Viking Age. Even in Finland, however, the Northwest Germanic presence was only limited to the coastal areas, so Proto-Saamic cannot have been spoken in Finnish Lapland alone, either.

In brief, the loanword evidence confirms the early Iron-Age Saami presence in southern Finland, where the so-called Lapps still lived in the Middle Ages, as proved by onomastic, folkloristic, historical and archaeological evidence (see, e.g. Salo 2000: 27–64; Aikio & Aikio 2004: 116–124). Thus, the only question is how far to the north and east the Proto-Saamic speech area stretched during the last centuries B.C. From a linguistic point of view, I may only repeat what I stated above that the early Iron-Age Proto-Saamic vowel shifts are too complex to have occurred in a very large area, such as the whole eastern half of Fennoscandia. However, they can have taken place in an area stretching from the Finnish Lake District to the Lake Ladoga and Lake Onega region, where numerous water routes may have provided a larger than average communication network.

Indeed, this area may be called the Proto-Saamic homeland, which, however,

does not mean that Proto-Saamic speakers were any more aboriginal in southern Finland than in Lapland but only that the Proto-Saamic language originated there from a dialect of Proto-Uralic. Now the loanword evidence suggests that Proto-Saamic was still just a dialect of Proto-Uralic as late as early in the first millennium B.C. because its Baltic and Germanic loanwords dating to this period were borrowed into the Proto-Finno-Saamic stage that differed only a little from the earlier Proto-Uralic stage. As I have discussed in further detail elsewhere (Kallio 2006), this fact strongly suggests a much shallower time depth for Proto-Uralic than has generally been supported so far.

Interestingly, the Proto-Saamic homeland shows archaeological discontinuity between the Stone and Bronze Ages, that is, early in the second millennium B.C. (see especially Lavento 2001). At that time, a massive cultural wave (e.g. Textile Ceramics and Seima-Turbino bronze artifacts) arrived there from the later Volgaic speech area, because of which this cultural wave has recently by and large been considered linguistically Volgaic (cf. Hertzén 1973: 88–92). Such a linguistic identification has several problems, however. First, the very concept of Volgaic is most anachronistic early in the second millennium B.C., when the loanword evidence points to the Proto-Uralic dialect continuum. Second, there is nothing in Saami (or Finnic, for that matter) that should be regarded as derived from a Volgaic superstrate. Third, there was not necessarily any aboriginal Stone-Age population left, or at least their number was so limited that they were most likely outnumbered by the newcomers (see Lavento 2001).

Under these circumstances, there is no reason to advocate linguistic continuity between the Stone and Bronze Ages; it seems more likely that the direct ancestor of Proto-Saamic did not arrive in Fennoscandia until early in the second millennium B.C., before which it was probably spoken in the Volga-Oka region. The same should apply to the direct ancestor of Proto-Finnic because the linguistic separation of Saami and Finnic must largely be dated to the first millennium B.C. (cf. Kallio 2007: 245–246). In other words, I have indeed reached an unorthodox conclusion that the Uralianization of the eastern Baltic Sea region cannot be connected with any Stone-Age waves from the Volga-Oka region (e.g. Sperrings Ware, ca. 5100 B.C. and/or Combed Ware Style 2, ca. 3900 B.C.). Instead, these cultural waves may very well be considered linguistically Pre-Uralic. Thus, when the actual Proto-Uralic speakers later arrived in the eastern Baltic Sea region (e.g. Textile Ware, ca. 1900 B.C.), they met people speaking closely related sister languages of Proto-Uralic, which could explain why it is not so easy to identify non-Uralic substrate items in Finnic (cf. Saarikivi 2004b).

This resurrected idea that the direct ancestor of Saami and Finnic was spoken in the Volga-Oka region as late as four millennia ago would solve the main problem with the continuity theory. Namely, both Saami and Finnic have several Indo-Iranian and even Iranian loanwords that cannot be dated much earlier than around 2000 B.C. (Kallio 2006: 11–13). Phonologically, however, most of them are no less regular

than the words inherited from Proto-Uralic although this should not be the case if Proto-Uralic had already spread to an enormous area between the Baltic Sea and the Urals about two millennia earlier. Moreover, there is no archaeological evidence of Indo-Iranian or Iranian presence in the eastern Baltic Sea region, whereas that is very much the case in the Volga-Oka region (see, e.g. Parpola 1999: 195–196). Obviously, the simplest solution is that these loanwords were borrowed into the direct ancestor of Saami and Finnic when it was still spoken in the Volga-Oka region.

Admittedly, this idea is not unproblematic, either, because both Saami and Finnic also have several Northwest Indo-European loanwords (i.e. loanwords whose sources are still phonologically Proto-Indo-European but yet already distributionally Germanic, Baltic, Slavic, etc.). The first discoverer of this archaic loanword stratum, Jorma Koivulehto (1983), was also the first one to connect it with the spread of the Corded Ware culture to the eastern Baltic Sea region around 3200–3100 B.C. As he later noted himself (Koivulehto 2006b: 158–159), however, the easternmost Corded Ware variant, known as the Fatyanovo culture, spread even further to the Volga-Oka region around 2800–2600 B.C., which is not too late for the phonological Proto-Indo-Europeanness (Kallio 2006: 10–11, 17). On the other hand, although the Northwest Indo-European loanwords are perfectly consistent with what we know about the Corded Ware culture (Koivulehto 2006b: 160–161), they are just as perfectly consistent with what we know about the Fatyanovo culture because these cultures were essentially the same, not to mention that they involved the same Northwest Indo-Europeans (see Mallory 2001: 352–354).

What I would also like to stress is the fact that Northwest Indo-European loan words were indeed borrowed from dialectal Proto-Indo-European because there is nothing in their phonology or word formation that would point to Proto-Germanic, Proto-Balto-Slavic, etc. The distributional criterion should not be overrated because the Germanic distribution in particular may also partly be explained by the statistical fact that Germanic has preserved its inherited Proto-Indo-European vocabulary better than any other Indo-European branch (see, e.g. Bird 1982, 1993). On the other hand, the Baltic and/or Slavic distribution might even suggest that the loanword in question was not borrowed from Northwest Indo-European but from Proto-Balto-Slavic, which are not easy to distinguish, as I already noted above. Contrary to the Northwest Indo-European stratum, however, the Proto-Balto-Slavic stratum does not date until the second millennium B.C., when the ancestor of Saami and Finnic had already reached the eastern Baltic Sea region.

Although even later datings have occasionally been favoured (see, e.g. Napolskikh 1995), the loanword evidence clearly confirms the Proto-Finno-Saamic presence in the eastern Baltic Sea region as early as during the second millennium B.C. At that time, Proto-Finno-Saamic (or perhaps its geographically, although not linguistically, separated Pre-Finnic and Pre-Saamic dialects) borrowed several Pre- and Palaeo-Germanic loanwords, which show phonological Germanicisms and which must therefore be connected with the Nordic Bronze-Age culture, spreading from about 1700 B.C.

onwards along the coasts of the Baltic Sea, from Denmark via Sweden to Finland and, to a lesser extent, Estonia (see Koivulehto 1999b: 8–9, 223–225, 271). The fact that these loanwords are more numerous in Finnic than in Saami is a very strong indicator that Pre- and Palaeo-Germanic were geographically closer to Pre-Finnic than Pre-Saamic. Hence, not only Pre- and Palaeo-Germanic as well as Pre-Saamic but also Pre-Finnic must have been spoken in southern Finland during the second millennium B.C.

These locations are further supported by the Middle Proto-Finnic loanwords in Proto-Saamic because some of them had ultimately been borrowed from Palaeo- or Proto-Germanic into Early or Middle Proto-Finnic. The recently resurrected idea that Finnic did not arrive in Finland until the Iron Age (cf. Aikio & Aikio 2001, 2004; Janhunen 2005) would therefore create a strange situation where several borrowings between Germanic and Saami, both spoken in Finland, would have been mediated by Finnic, not spoken in Finland. As there is without a doubt a Germanic superstrate in Finnic (see Kallio 2000), Finnic must have been spoken in coastal Finland, where Germanic influence was the strongest from an archaeological point of view (see Carpelan 1999: 271–273; Carpelan & Parpola 2001: 90–92). Again, the only question is how far to the south and east the Proto-Finnic homeland stretched from coastal Finland.

In the south, the Proto-Finnic homeland must have included Estonia because Finnic borrowed numerous Baltic loanwords, many of which Finnic further mediated to Saami. As Finnic is geographically located between Baltic and Saami even today, it is easy to conclude that this was already the case in the early Metal Ages. In the east, the Proto-Finnic homeland most likely included the Karelian isthmus, connecting its northern and southern portions, but there are no reasons to stretch the Proto-Finnic homeland much further to the east, not least because it would then become too large to have maintained linguistic uniformity until the late Iron Age. Some might even say that the Proto-Finnic homeland surrounding the Gulf of Finland is in itself too large. Nevertheless, such an opinion can be considered a healthy, but exaggerated, counter-reaction to recently advocated half-a-continent homelands because empirical evidence shows that while a major Bronze-Age language covered 250,000–500,000 square kilometres, a major Iron-Age language covered 500,000–750,000 square kilometres (see Mallory 1989: 145–146; Anthony 1991: 196–198).

In any case, especially Janne Saarikivi (2007: 96–97) has now defended a more eastern homeland for both Proto-Finnic and Proto-Saamic because of their Iranian loan words, for instance. Apart from a few sporadic *Wanderwörter*, however, all their Iranian loanwords can very well have been borrowed already at the beginning of the second millennium B.C., before their common ancestor had even left the Volga-Oka region for the eastern Baltic Sea region. Saarikivi has also referred to Finnic toponyms in northwestern Russia (Saarikivi 2007; Teush 2007) as well as to Finnic loanwords in Volgaic and Permian (Hofstra 1985: 391–402; Saarikivi 2006: 33–38), both of which, however, are often of Germanic or Baltic origin themselves. This fact, too, confirms

the earlier Finnic presence in the west, rather than in the east. Yet the same lexical evidence suggests that the earliest Finnic eastward expansion began before the Late Proto-Finnic stage (or at least before Common Finnic *ʒ > *h, North Finnic *ai > *ei, etc.), although the most important Finnic eastward expansions were most likely much more recent and can be identified as Veps and Karelian (Saarikivi 2007: 90–93).

I have gone to lengths to handle the Proto-Finnic homeland problem because of its vital importance to the Proto-Saamic homeland problem (as already stressed by Aikio & Aikio 2001, 2004). After discussing when and where the linguistic separation of Saami and Finnic took place, one may still wonder why it took place, if they indeed constantly remained in each other's neighbourhood. As the late Terho Itkonen (1983: 353–354) reminded us, each linguistic separation is a social (rather than geographical) phenomenon, largely depending on community spirit, which can both unite and divide linguistic communities. As new in-group dialects and languages can even arise inside other linguistic communities, it seems unrealistic ever to answer conclusively why the linguistic separation of Saami and Finnic took place. In any case, they did not need to be separated by geographical barriers like the Gulf of Finland—not that the 52-kilometre width at the gulf's narrowest point would have been enough anyway (see also Salo 2004: 47–52; Kallio 2006: 17–19).

In conclusion, my suggestions for the Proto-Saamic and Proto-Finnic homelands are largely the same as those suggested by Terho Itkonen (1983: 378), who argues the Proto-Uralic expansion, however, to have occurred some millennia earlier than I propose (cf. Kallio 2006: 16–17). Admittedly, while my postulation of the Proto-Uralic expansion to the Proto-Saamic homeland is archaeologically well-founded, that to the Proto-Finnic homeland is not, as Jorma Koivulehto (2006b: 158–159) has already pointed out. As I am not an archaeologist, I am obviously not in a position to solve this problem. I may only state from my own linguistic point of view that dating the Proto-Uralic expansion to the Subneolithic period (ca. 5100–3200 B.C.) creates even more problems than it solves.

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