

## Vocabulary related to iron manufacture and iron-working in Saami languages: An etymological study

In this article, etymologies of the lexical set related to iron manufacture and iron-working in the Saami languages are examined. The aim is to examine, from a linguistic perspective, when Saami speakers started to manufacture and work iron and from which direction they learned these activities.

The data consists of 32 words relating to iron. Only the most central terms of the lexical set have been included, namely terms for ‘iron’; ‘steel’; ‘ore’; ‘iron slag’; ‘forge (v.)’; ‘forge (n.), smithy’; ‘furnace’; ‘smith’; ‘coal; ember’; ‘bellows’; ‘pliers’; ‘hammer’; ‘anvil’. The data was collected from dictionaries of the Saami languages.

According to the data analysis, it seems that Saami speakers received their iron-related vocabulary mainly from two directions: Proto-Scandinavian and Finnic/Finnish. The southwestern Saami languages which are today spoken in central Scandinavia and Lule Saami received the vocabulary mainly from Proto-Scandinavian. The more northern and northeastern languages have borrowed words from Finnic/Finnish.

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## I. Introduction<sup>1</sup>

The etymology of the Saami words meaning ‘iron’ – for example, *ruevtie* in South Saami and *ruovdi* in North Saami – is well-established: it is a late Proto-Germanic or early North-West Germanic loanword in the Saami languages (e.g. Korhonen 1981: 35; Sammallahti 1998: 128; Aikio 2006: 12, 39). Also other words related to iron manufacture and iron-working have been etymologized (see below), but no such study has been published which would bring together the vocabulary related to iron manufacture and iron-working. What is more, many words related to iron vocabulary remain understudied.

In this language-historical study, my aim is to present the etymologies for the vocabulary of one specific lexical set (see Section 2.3): iron manufacture and iron-working. My research question is as follows: What are the ages and origins of words referring to iron manufacture and iron-working in the Saami languages?

Some of the etymologies are well-known, some debated only sporadically and now commented on further. Some etymologies are new proposals from my part. By presenting the origins and age of the words, I try to clarify from a linguistic perspective when Saami speakers started to manufacture and work iron and from which direction they learned these skills and how these activities developed later.

This article is part of the ongoing multidisciplinary project “The Iron Saami: On the connection between iron production, asbestos pottery, and Saami language 900 calBCE–600 calCE Finland” (Pesonen et al. 2022). Within this project, the aim is to study whether it is possible to connect the spread of the Saami language(s) in Fennoscandia, especially in Finland, with the early iron production sites and asbestos pottery of the Luukonsaari and Sirnihta types, which were produced in the area of modern inland Finland and Karelia during that time (Map 1). The distribution area of these asbestos pottery types covers a big part – but not necessarily the

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1. I am very grateful to all who have helped me with this research and discussed the words in my data with me. My thanks go to Hanna Danbolt Ajer, Jaakko Häkkinen, Petri Kallio, Mikko Moilanen, Siri Ellen Nystø Råhka, Maida Persson Steinfjell, Petro Pesonen, Sierge Rasmus, and Johan Schalin. I especially want to thank Markus Juutinen and the two anonymous reviewers who had excellent observations and suggestions on earlier versions of this paper.

whole – of the Proto-Saami speaking area, and the dating of the ceramic types correlates quite well with the period in which Proto-Saami was spoken, and in the later phase, also the spread and disintegration of the language. (See further Section 2.2.)

In addition to the article at hand, the project will include, for instance, archaeological research on dating several of the sites, and toponymic research that will map out possible toponyms of Proto-Saami origin in the surroundings of the archaeological sites. An article is also planned in which the results of archaeology, toponymy, and language history will be combined and it will be examined whether there are possible correlations between the archaeological data and the linguistic data.

The present article is not multidisciplinary; rather, it focuses only on the etymologies of the words in the data and what can be determined about the origin and age of the words. Often – but not always – the origins of the words are also the origins of the concepts to which the words refer. However, some tentative correlations with archaeological material are made with earlier research results. The new archaeological results about asbestos pottery and iron-production sites that we will obtain within the “Iron Saami” project are still in progress and will be published later (Pesonen et al. forthcoming).

The structure of the article is as follows: in Section 2, I will give a brief overview of the etymological research on the Saami languages (2.1) and what is known of Saami prehistoric iron manufacture and iron-working (2.2). I will also define what I mean by calling the words in my data the lexical set of iron manufacture and iron-working (2.3). Then, I will describe the data and its collection (2.4). I will then move on to present the etymologies for vocabulary related to iron in Section 3. First, I will handle the already established and widely accepted etymologies (3.1). Then, I will discuss etymologies which I now revisit, and I will also suggest some entirely new etymologies (3.2) and give a summary of the data analysis (3.3). In Section 4, I will discuss the age of iron manufacture and iron-working among the Saami speakers based on the origin and age of the words of the data. As my analysis will show, the vocabulary related to iron has origins in many directions. Not all the words have been present in Saami since prehistoric times; some are much younger. However, two main directions can be seen in the data: southwestern Saami and Lule Saami have borrowed vocabulary from Proto-Scandinavian, while northern and eastern languages have borrowed vocabulary from Finnic/Finnish.

## 2. Background, the concept of lexical set, and data

### 2.1. An overview of Saami etymological research

Saami etymological research has long-reaching roots as plausible etymologies were suggested already in the 1800s (e.g. Wiklund 1894). Nevertheless, research became more accurate during the twentieth century, during which time, for example, Sköld (e.g. 1961; 1980), Koivulehto (e.g. 1976; 1988), Korhonen (1981), Bergsland (e.g. 1992; 1995), and Sammallahti (e.g. 1998, 1999) specialized in Saami historical linguistics.

In the last twenty years, Saami etymology has been researched from many perspectives: contacts between Saami and other languages in the Baltic Sea area have been studied, for instance, contacts with Germanic (e.g. Aikio 2006; 2012; 2020; Piha & J. Häkkinen 2020; Juutinen & Valtonen 2023), Finnish and Karelian (Aikio 2009) and the already vanished Paleo-European languages (Aikio 2004; 2012; Rahkonen 2013). Also, the historical toponymy of Saami origin in Finland and northern Russia (Saarikivi 2004; Aikio 2007b; 2007c) has been a research interest in the 2000s.

During the last fifteen years, detailed attention has been paid to the fact that Saami languages may have separate language histories from each other. Aikio notes some parallel loanwords in his dissertation (e.g. SaaS *raavre* versus SaaN *rávdu* ‘arctic char’, Aikio 2009: 272–273) and he later observes, for example, that in Proto-Scandinavian loanwords, initial Proto-Scandinavian consonant combinations of the shape stop+liquid (e.g. *kl-*, *pr-*) have been substituted differently in the southernmost Saami languages compared to more northern languages (Aikio 2012: 76–78), e.g. South Saami *praadtie* versus North Saami *ráddi* ‘ember’ in this article (etymology 25).

Lately, also the study of etymology by semantic categories has been done. This means that the researcher has chosen one semantic (or lexical) category and collected vocabulary belonging to the category in question. For example, Piha (2020a) has collected vocabulary that refers to the indigenous South Saami religion and has studied the origins of it, while Juutinen & Valtonen (2023) have studied the etymologies of words referring to domestic animal husbandry. Such perspectives regarding words are significant as they might shed light on the genesis and development of the studied phenomena.

In this article, the perspective is a common Saami one, meaning that I have collected my data from all the Saami languages that are alive today. I consider words not only from the perspective of one Saami language but look at each Saami language separately. At the same time, this article continues the trend of etymological studies by semantic categories as I have chosen to consider the words that belong to the lexical set of iron manufacture and iron-working.

## 2.2. Saami prehistory and iron

The Saami languages descend from a common Proto-Saami language, one of the six intermediate protolanguages of Proto-Uralic (e.g. Saarikivi 2022: 31). It is difficult to give an exact dating for when Proto-Saami or its preform, Pre-Saami, became a separate language. Carpelan & Parpola (2001: 91–92) have suggested that it was sometime in the Bronze Age (1700–500 BCE) as there is an archaeologically visible Nordic Bronze Age culture in coastal Finland which is the best option for the spread of Proto-Germanic loanwords into Saami independently of Finnic. Aikio (2012: 103) has tentatively accepted this dating and archaeological connection, although earlier he had noted that the *terminus ante quem* for Proto-Germanic loanwords in Saami would be 100 CE<sup>2</sup> and most likely the borrowing happened in the early Iron Age (Aikio 2006: 39). The early Iron Age is suitable for the early Proto-Germanic loanwords because the word for iron, SaaN *ruovdi* and SaaS *ruevtie*, is a Proto-Germanic loanword (e.g. Korhonen 1981: 35; Sammallahti 1998: 128; Aikio 2006: 12, 39). The word would not have come into the language much earlier than the shift from the Bronze Age to the Iron Age. Thus, Proto-Germanic loanwords in Saami are not necessarily connected to the Germanic spoken in the Bronze Age. However, the Saami word ‘iron’ has taken part in the sound change Pre-Saami \*a > Proto-Saami \*uo (Aikio 2012: 93), which indicates that it is a relatively old loan. Even so, SaaN *ruovdi*, SaaS *ruevtie*, and their cognates were more likely borrowed closer to the North-West Germanic phase, i.e. closer to the beginning of the Common Era, than in the Bronze Age.

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2. I interpret that Aikio includes the North-West Germanic period within the Proto-Germanic period (see Aikio 2006: 39). North-West Germanic is a language stratum that is reconstructed between Proto-Germanic and Proto-Scandinavian (e.g. Haugen 1982: 8).

According to researchers, Pre-Saami developed into Early Proto-Saami in an area that covers the southeastern parts of inland Finland and the area of Lake Ladoga and perhaps Lake Onega in Karelia (e.g. Aikio 2006: 40–42, 45; Kallio 2009: 38). Aikio (2012: 103) suggests that western Finland all the way to Tavastia might have been a part of the area in which Pre-Saami was spoken (Aikio uses the term “Pre-Proto-Saami”). However, he is skeptical about a wide speaking area that would have covered an area from Tavastia to Lake Ladoga. Yet, Proto-Saami speakers reached western Finland during the early Iron Age, something which is proven by Finnish toponyms of Proto-Saami origin in the area and loanwords from Proto-Saami into southern Finnish dialects (e.g. Aikio 2007b; 2009). This has been deemed to be a convenient area from the perspective of language contact (see Aikio 2012: 88–92; 103). Thus, it might be reasonable to assume a speaking area, the core of which was somewhere in Lakeland Finland rather than in Karelia.

As for dating the Saami *Urheimat*, this has been done with the help of Germanic and Scandinavian language contacts. The earliest runic inscriptions have been defined to reflect the phonology of Proto-Scandinavian. These runic carvings have been dated by archaeological methods to approximately 1–500 CE. (See e.g. H. F. Nielsen 2000: 32, 288; 2002: 615; Amundsen 2023; Biørnstad 2023; see also Aikio 2004: 26; J. Häkkinen 2010: 55). The earliest dating for runic inscriptions has just been backdated to 1–250 CE after the discovery of the Svingerudsteinen near Tyrifjorden, Norway (Amundsen 2023; Biørnstad 2023). However, the datings of older runic sources involve many uncertainties, such as the fact that the oldest inscriptions are found in Southern Scandinavia (H. F. Nielsen 2000: 32) and they do not show areal variation. Therefore, the datings should be applied with care to the datings of early Saami language forms. Nonetheless, an approximate dating to the first two centuries of the Common Era can be made.

The loanwords that have been borrowed from Proto-Scandinavian into Saami show that at the time of the borrowing, Saami had already gone through the so-called “great Saami vowel shift”, and thus Proto-Scandinavian words have not taken part in this shift (Aikio 2012: 71; see Aikio 2012: 70–72 about this vowel shift). Loanwords from the earlier Germanic language phases, Proto-Germanic and partly North-West Germanic,<sup>3</sup> and

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3. However, North-West Germanic words seem to have been borrowed into

older strata must have already been present in Saami before the vowel shift as they have taken part in the shift (Aikio 2006: 10; 2012: 71). The Saami language form prior to the great Saami vowel shift is termed Pre-(Proto-)Saami, and the language form after the shift is called Proto-Saami (Aikio 2012: 70). This shift, then, takes place around 200 CE, and therefore Saami was spoken in the Urheimat before 200 CE and centuries after that, even when it had started to spread to a wide area in Fennoscandia.

The language of the last phase of Proto-Saami, Late Proto-Saami, began to disintegrate into different proto-dialects sometime after the shift to the Common Era. The modern Saami languages developed from these proto-dialects (as well as some other Saami languages that have become extinct). There were three proto-dialects: the *southwest dialect* (> South, Ume, and perhaps Pite Saami), the *northwest dialect* (> Lule and North Saami, possibly also Pite Saami), and the *east dialect* (> Inari, Skolt, Kil-din, and Ter Saami as well as the extinct Kemi and Akkala Saami) (Aikio 2012: 77).

The expansion of Late Proto-Saami might have happened in western Finland, from where the speakers spread to western, northern, and even eastern parts of Fennoscandia (Aikio 2012: 103). In western Finland, the first dialect boundary was also formed when Late Proto-Saami spread towards central Scandinavia over the Gulf of Bothnia around 200 CE. There, the language developed via a southwestern proto-dialect into Southern Proto-Saami. The remaining Late Proto-Saami disintegrated into north-western and eastern Proto-Saami slightly later. (See Piha & J. Häkkinen 2020: 117–118.)

In the “Iron Saami” project, we suggest that the Proto-Saami language – or rather, speakers of Proto-Saami – relate to the Luukonsaari

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Saami while the Saami vowel shift was ongoing, because some of the loanwords show that they have gone through the vowel shift and some have not, and thus the latter loanwords were borrowed after the shift was completed. This is visible in North-West Germanic \*h- that has sometimes been substituted with zero in Saami, but the loanword has not taken part in the vowel shift. In some North-West Germanic words \*h- was substituted with \*h- but the words did not take part in the vowel shift. (See e.g. Kallio 2009: 37). At the time of the Proto-Scandinavian loans, the \*h- was already regularly substituted with \*h- in Saami. Some North-West Germanic loanwords have participated in the vowel shift as seen in the SaaN word *vuohčču* ‘narrow, wet bog’ ← NWG \*wätjō- (Aikio 2006: 12).

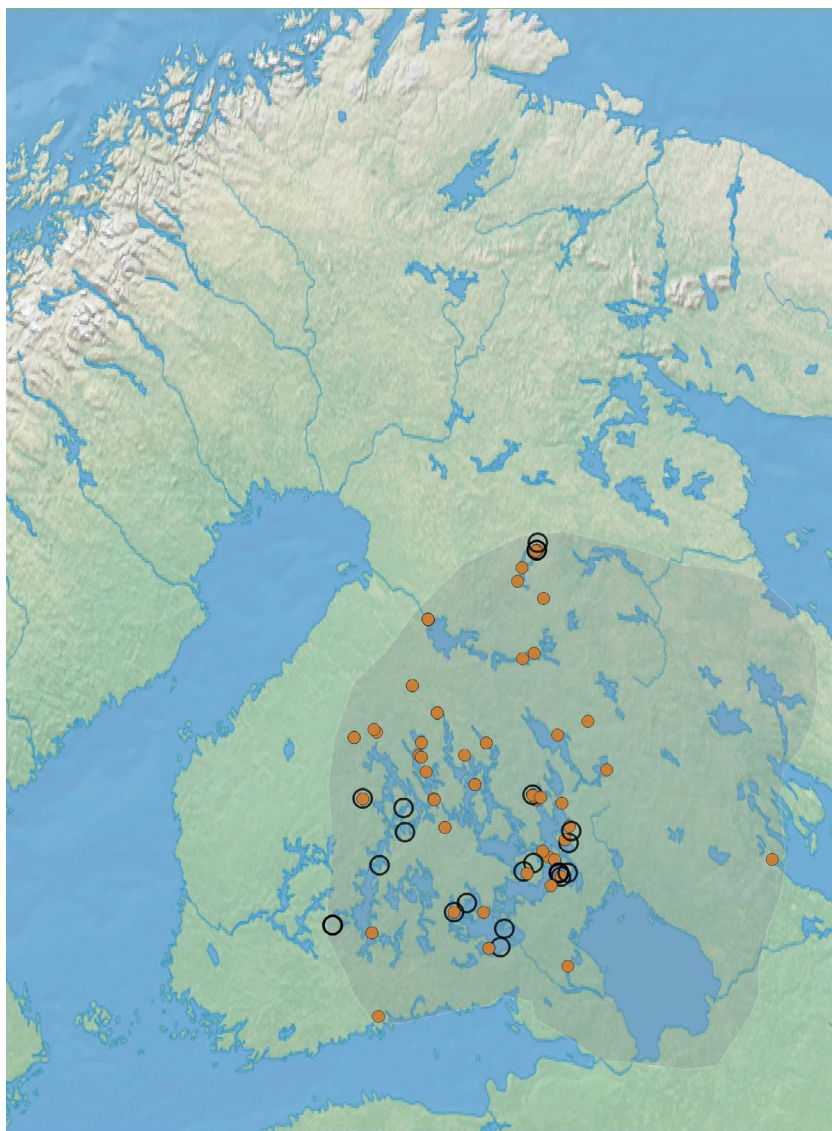
and Sirnihta asbestos pottery sites and indications of iron manufacture. The Luukonsaari and Sirnihta sites are located in southeastern and eastern inland Finland, and sites are known also in the area of Lakes Ladoga and Onega (Map 1). The origin of Luukonsaari ceramics is in the Late Bronze Age (beginning around 1000 BCE and lasting until 300 CE) and Sirnihta ceramics in the Early Iron Age (starting around 400 BCE and lasting until 300 CE) (Lavento 2015: 197). Both types show some connection with iron manufacture from ca. 400 BCE onwards (Pesonen & Ahola 2022: 198, 200, 203; on early iron production in Finland, see e.g. Kotivuori 2013; Lavento 2013). When these datings for early iron manufacture are correlated with what is known about the dating of Proto-Saami, it seems strikingly simultaneous with the presence of Pre- and Proto-Saami in the area. However, no multidisciplinary proof of the connection between early iron manufacture and the Saami languages has been presented thus far, and this article along with the other forthcoming publications of the project aims to seek the missing proof. It is also of interest that after 300 CE, iron manufacture and the use of ceramics ceases in northern Finland (Hamari & Halinen 2000: 156). This is claimed to coincide with the timing of the arrival of the predecessors of the northern Saami languages in the northernmost Fennoscandia (e.g. Heikkilä 2011: 76).

In this study, my hypothesis is that some – possibly many – of the words in the data are contemporaneous with the asbestos pottery types of Luukonsaari and Sirnihta and the early iron production sites. That is why the pottery types are of interest in this article. It is my aim to clarify the dating of the words in the data, and then in future studies we will be able to define possible correlations with the archaeological data and the iron vocabulary. However, I do not expect every single word of the data to correlate with Luukonsaari and Sirnihta ceramics; some words might be considerably younger, and they might tell about the developments within the field of Saami iron manufacture and iron-working in the later centuries.

### 2.3. Lexical sets

When categorizing words by their meanings, they are often categorized in so-called lexical sets. A lexical set is formed by words that belong semantically together (Kay & Allan 2015: 35). For example, in this paper, I study the words for iron manufacture and iron-working, such as ‘iron’, ‘smith’, and ‘forge’. This could be understood as a lexical set. Lexical sets





Map 1: The distribution of Luukonsaari pottery (filled symbols) and Sirnihta pottery (open symbols) in Finland according to the AADA database (Pesonen et al. 2024) and the main distribution area of Luukonsaari pottery (gray shading) in Finland and Russia (according to Pesonen et al. forthcoming; Kosmenko 2009). Map: Petro Pesonen, background map: naturalearthdata.com.

are rather limited in size, but together, loosely related lexical sets form larger units called *lexical* or *semantic fields* (ibid. 35; see also Murphy & Koskela 2010: 148). The lexical set of iron manufacture and iron-working could, for instance, be a part of the wider lexical field for terms for metal-working. Deeply connected with lexical sets and fields are so-called conceptual fields. A conceptual field refers to the domain of activity in the language-external world (ibid. 35). Thus, the conceptual field for the lexical set of iron manufacture and iron-working is the activities, objects, and other things that relate to iron manufacture in the external world.

Categorization in general – be it objects and activities or words that refer to these – is a universal phenomenon, but how categorization is done and what is included in a category is culture- and time-bound as well as affected by the purpose for which the categorization is done (see e.g. K. Häkkinen 1999: 163). In this study, I have decided to categorize words that refer to iron manufacture and iron-working into one lexical set. This lexical set is made from an etic perspective on the part of the researcher (see Piha 2018: 124–125). The starting point of this lexical set is in the present: I have collected the words within the lexical set from rather modern dictionaries that document the Saami languages (the oldest dictionary used in this research is Nielsen 1932–1938). However, the nature of this research is etymological. This means that we go back into the (pre)historical depths while searching for the origin and age of the words within the lexical set.

It has to be taken into account that we cannot know for sure how people in past times categorized words and their language-external referents – does their categorization overlap with ours? In this research about the lexical set of iron manufacture and iron-working, I use my knowledge and educated guesses regarding prehistorical and historical eras and iron manufacture and iron-working: as long as iron has been worked by human beings there must have been tools, circumstances, and activities that relate to iron manufacture and iron-working and therefore, they have had conceptual fields and lexical sets for objects, circumstances, and activities related to iron manufacture and iron-working. In this study, I presume that terms for such central materials, tools, circumstances, and activities for iron-related work should have been part of the lexical set of iron manufacture and iron-working already in prehistoric and historical times. This in mind, I now turn to explain the data of the research.

## 2.4. The data of the research

The data of this research consists of Saami words that refer to iron manufacture or iron-working. The iron-related vocabulary is vast, but to keep this paper as concise and readable as possible, I have decided to limit my data to the following concepts and the words referring to them in the Saami languages: ‘iron’; ‘steel’; ‘ore’; ‘iron slag’; ‘forge (v.)’; ‘forge (n.), smithy’; ‘furnace’; ‘smith’; ‘coal; ember’; ‘bellows’; ‘pliers’; ‘hammer’; and ‘anvil’. I have assessed these concepts as the most central in the lexical set of iron manufacture and iron-working, and they have most likely been part of iron-related activities already in past eras as discussed in Section 2.3. In addition to these, there are many other important concepts that are iron-related, examples of which are ‘concentrate’, ‘weld’, and ‘punch’,<sup>4</sup> but I will address these elsewhere in the future.

I have collected the data from Saami dictionaries which are listed in the References under the subheading “Sources of the data”. I have used the modern Saami languages as the starting point and looked for the iron-related words in several digital and modern dictionaries, and then I looked for the words in scientific dictionaries. I have also used the etymological database of the Saami languages *Álgu* to search through the etymological works concerning the words in the data.

The data is analyzed by the methods of etymology: historical-comparative linguistics and contact linguistics. It is then organized by the respective origins of the words. Finally, where the iron vocabulary of Saami languages originates shall be studied.

## 3. The etymologies for words related to iron manufacture and iron-working

In this section, I will present the etymologies of the words in my data. First, I will present the well-established etymologies that do not, according to my examination, need revision (3.1). After these words, I will discuss words that need revision or lack an etymology altogether (3.2). At the end of the section, I will give a summary of the etymological findings (3.3).

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4. I am very grateful to Mikko Moilanen PhD who is a specialist in Iron Age iron-working and who helped me to map the concepts related to iron manufacture and iron-working.

The works in which the etymologies of the words are discussed are given after the Saami words. If I have seen the need to revise an etymology, the new proposal for the etymology is given after the analysis of the etymology, at the end of the entry.

I have used the modern orthography of the Saami languages whenever possible. There is not always an orthographically modernized word form for all Saami languages; in particular this concerns Ume, Pite, Kildin, and Ter Saami. In such cases, I use the transcription or orthography that has been used in Lehtiranta (2001) or other sources of the data. I give the source in parentheses.

### 3.1. Well-established etymologies

Many words that are connected to iron manufacture or iron-working have been etymologized. These include the following words (1–15):

- (1) SaaS *ruevtie* ‘iron; iron tool; iron trap’; SaaU *ruövddie*; SaaP *ruov’tie*; SaaL *ruovdde* ‘iron; metal; iron slag; iron trap’; SaaN *ruovdi* ‘iron; implement made of iron; iron trap’; SaaI *ryevdi* ‘iron; trap’; SaaSk *ru’vdd* ‘iron’; SaaK *rúŷu<sup>dt</sup>* ‘iron; iron trap; scissors’ (T. I. Itkonen 1958: 444; Sammallahti & Hvorostuhina 1991 s.v. *ruovdi*); SaaT *riŷu<sup>te</sup>* ‘iron’ (T. I. Itkonen 1958: 444) < PS \*ruovtē < Pre-PS \*rōvtē < \*ravta ← \*PG/NWG \*raudan- > ON *rauði* ‘bog iron ore’ (Korhonen 1981: 35; Sammallahti 1998: 128; Lehtiranta 2001 s.v. \*rōvtē; Aikio 2006: 12, 39; 2012: 93).
- (2) SaaS *aassjoe* ‘furnace; hearth in a smithy’; SaaL *ássjo* ‘furnace; hearth in a smithy’ < PS \*āšō  
← PSc \*ašjōn- > Sw *ässja* ‘hearth in a smithy’ (Korhonen 1981: 163; Sammallahti 1998: 128; Aikio 2006: 20; Piha 2018: 139, 192).

A cognate is found also in North Saami, but there the word *áššu* does not have a meaning ‘furnace; hearth in a smithy’ but rather ‘glowing wood embers on a hearth’. Aikio (2012: 79) has, however, included the word as an iron-related word, because he regards the modern meaning as having developed from the meaning seen in the South Saami and Lule Saami word. Nevertheless, the North Saami language has another word for ‘furnace’ (*álvi*, see etymology 16 in this article).

Earlier, the Proto-Saami form was reconstructed with a short \*š (Aikio 2006: 20; see also Piha 2018: 192), but as there is a long sibilant after a long vowel in all the Saami languages, the reconstructed form might be \*āššō (cf. e.g. SaaS *bāassjoe*, SaaN *boaššu*, SaaSk *puäšš* ‘rear part in a Saami dwelling’ < PS \*poaššu, Aikio 2009: 270).

- (3) SaaN *dearpat* ‘forge (v.); hammer (v.); beat (v.); knock; hit (v.); make (of iron or steel); go at a gentle jogtrot (of horses)’; SaaI *terppâđ* ‘forge (v.); hammer (v.); hit (v.)’  
 ← Fi dialectal *tärppiä* ‘bang (v.); make notches in wood with an axe; jerk’ (Aikio 2007a: 40; SES s.v. *tärppiä*).

In addition, a cognate to North Saami and Inari Saami words is found in Skolt Saami and Kildin Saami, but the meaning ‘forge (v.)’ is not found in these two languages; in Skolt Saami the meaning is ‘cut (wood)’ and in Kildin Saami ‘cut; chop down’.

- (4) SaaI *áhju*  
 ← Fi *ahjo* ‘forge (n.); furnace’ (E. Itkonen 1986: 35).
- (5) SaaN *dáhkut* ‘forge (v.); repeat the same word or sentence’; SaaSk *tääkkad* ‘forge (v.); hit (v.); nail (v.)’ SaaK *tāgke<sup>δ</sup>* ‘forge (v.); hit (v.); nail (v.); crush (v.)’; SaaT *tāgka<sup>d</sup>* (SaaK, SaaT T. I. Itkonen 1958: 569).  
 ← Fi *takoa* ‘forge (v.)’ (SES s.v. *takoa*).
- (6) SaaSk *miōhh* ‘furnace’  
 ← Russian *mexú* ‘bellows’ (Juutinen 2022, online appendix p. 22).

This word belongs to an older stratum of Russian loans, because in old loans the short vowel in Russian words has been substituted with a diphthong in Skolt Saami (Juutinen 2022: 94).

- (7) SaaS *baste* ‘pliers; clamp’; SaaU *bassta*; SaaP *pastastit* ‘take with pliers; pinch’; SaaL *bassta* ‘pliers; screw clamp; clamp (for handicrafts, hobby work, for holding electricity etc.)’; SaaN *basttat* ‘pliers; clamp’; SaaI *poostah* ‘pliers; cutting pliers’; SaaSk *pōōst* ‘pliers; cutting pliers’ < PS \*pešte < Finno-Permic \*pišti or \*pište (Sammallahti 1988: 553; 1998: 121).<sup>5</sup>

5. Today many researchers of the Uralic languages, myself included, doubt the

Pliers are not a tool used only to work with iron. However, in iron production pliers are a central tool, and therefore I have included the word in my data.

The Saami words are old words that are also found in the Finnic, Mordvinic, and Permic languages (SES s.v. *pihti*), but the origin of the words is not known. The old age of the word suggests that it was not acquired into the language in the context of iron production.

- (8) SaaN *vuossu* ‘bellows’; SaaI *vuássoo* ‘bellows’ < PS \*vuosejō < Pre-PS \*vōsejō < \*asijo  
 ← PG \*hasja- (> Icelandic *hes* ‘skin pouch’) (Koivulehto 1999: 13–15; Aikio 2006: 10).

This word has traditionally been defined as a Proto-Germanic loan, but it could also be a borrowing from North-West Germanic, because some North-West Germanic loanwords have gone through the vowel shift Pre-Saami \*a > late PS \*uo. Also, NWG \*h- is sometimes substituted by zero. Also implying a somewhat later origin than Proto-Germanic is the note by Koivulehto (1999: 13) that the Saami words were borrowed from “früh-germ. (Norden)”, i.e. from the Nordic branch of early Germanic.

The North Saami and Inari Saami words have cognates in all the Saami languages (Lehtiranta 2001 s.v. \*vōsse), but in these other languages the meaning is not related to iron production; the most common meaning is ‘sack’, which probably is, according to the Icelandic words, the original meaning of the Proto-Saami word. The semantic change towards ‘bellows’ is easy to explain inasmuch as early bellows were leather sacks (Salo 1992: 113).

- (9) SaaN *bádji* ‘forge (n.)’; SaaI *páájá* ‘forge (n.)’  
 ← Finnic or Finnish *paja* (Lagercrantz 1939: 617; E. Itkonen 1987: 314; SES s.v. *paja*).
- (10) SaaSk *rau’ddipõrtt* ‘forge (n.)’.

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existence of a Finno-Permic branch of the language family or the binary taxonomical division of the language family in general (Aikio 2022: 4; Saarikivi 2022: 31–32). Therefore, it is perhaps safer to state that SaaN *basttat* and its cognates originate in a western dialect of Proto-Uralic, in the form \*pišti or \*pište.

This word is a compound with the components *rau'ddi* 'smith's' (see etymology 13) and *põrtt* 'cottage'. The word *põrtt* is a borrowing of Finnic *pirtti* 'id.'. The latter word is found in all the Saami languages with the exception of South Saami, and thus it was most likely borrowed into Proto-Saami. The literal meaning of the Skolt Saami compound would be 'smith's cottage'.

- (11) SaaS *sjijle* 'coal, glowing coal'; SaaU *sjijlla* 'coal, glowing coal'; SaaP *sjilla* 'coal, glowing coal' < \*šile  
 ← Pre-Finnic \*šili (> Finnish *hiili* 'coal') (e.g. Sammallahti 1999: 79; Aikio 2006: 41).
- (12) SaaL *hilla* 'coal, glowing coal'; SaaN *hilla* 'coal, glowing coal'; SaaI *illâ* 'coal, glowing coal'; SaaSk *ill* 'coal'; SaaK *ᵛᵛᵛᵛ<sup>(a)</sup>/ᵇᵛᵛᵛᵛ* 'coal' (Sammallahti & Hvorostuhina 1991 s.v. *hilla*); SaaT *ᵛᵛᵛᵛ<sup>(a)</sup>* (T. I. Itkonen 1958: 44) 'coal' < PS \*hille < Pre-Saami \*hile.  
 ← Finnic or Finnish *hiili* 'coal' (Lagercrantz 1939: 872; Korhonen 1981: 38, 92, 104, 134; SES s.v. *hiili*.)

The word is a loan from a Finnic language stratum in which the change \*š > \*h had already taken place. However, it cannot be a very recent loan as the easternmost Saami languages show zero as a substitution for Finnic \*h. In newer loanwords, for example in Skolt Saami, Finnish *h* is substituted with *h* (Markus Juutinen 2023 pers. comm.).

The short *i* in the first syllable seems to support the old age of the word, that is, the word must already have been present in the language before the long vowel in the first syllable changed into a short one. According to e.g. Sammallahti (1998: 184) and Aikio (2007b: 167), that change happened between Pre-Saami and Proto-Saami. Also, the lengthening of the word-internal consonant after a stressed syllable seems to be a Common Saami phenomenon, inasmuch as it is seen in all the Saami languages in this and other words (see Korhonen 1981: 164–165).

- (13) SaaN *rävdi*; SaaI *rävdee*; SaaSk *rau'ddi* 'smith'  
 ← Fi *rautio* 'smith' (< *rauta* 'iron') (Koivulehto 1976: 34; SES s.v. *rautio*).

These words most likely originally referred to a smith who works iron, because the words represent borrowings of Finnish *rautio* which, in turn, is a derivation from *rauta* 'iron'.

- (14) SaaSk *ku'znej̃* 'blacksmith'  
 ← Russian *кузнéц* 'blacksmith' (Juutinen 2022, online appendix p. 18 and references there).
- (15) SaaS *vietjere* 'hammer (n.)'; SaaU *viehtjere* 'hammer (n.)'; SaaP *vähtjer* 'hammer (n.)'; SaaL *viehtjer* 'hammer (n.)'; SaaN (*bádje*)*veahčir* 'hammer (used for forging)'; SaaI *veeččir* 'hammer (n.)'; SaaSk *vie'ččer* 'hammer (n.)'; SaaK *vieđťšer* 'hammer (n.)'; SaaT *vieččer* 'hammer (n.)' (SaaK and SaaT T. I. Itkonen 1958: 737) < PS \*veacērē < Proto-West Uralic \*wačara  
 ← Proto-Indo-Iranian \*wáźra- > Avestan *vazra-* 'club', Old Indic *vájra-* 'thunderbolt; Indra's weapon' (Lehtiranta 2001 s.v. \*vēcērē; Holopainen 2019: 292–293 and the references there).

The word for hammer is an old one and refers not only to hammers used in iron-working. Holopainen (2019: 293) suggests that it has been borrowed in a context relating to mythology.

The Proto-Saami form \*veacērē is reconstructed according to the first-syllable vowels in the North Saami word. For many other Saami words, the reconstruction should rather be \*viecērē. These two forms might represent forms after the Common Saami period when the Saami languages developed separately from one another. The Proto-Saami form is, then, \*vēcērē. A similar development is seen in some other words, e.g. SaaS *gietjje*, SaaL *giehtje*, 'end; top', SaaSk *kie'čč* 'end' (< \*kiečē) ~ SaaN *geahči* 'end; top' (< \*keahči) and SaaS *rietjmie* 'rope on the edge of a net' (< \*riečmē), SaaL *riessjme* 'rope for dragging nets under the ice' (< \*riečmē) ~ SaaN *reašmi* 'rope on the edge of a net' (< \*reačmē; Aikio 2009: 275).<sup>6</sup> Thus, Proto-West Uralic \*a could have developed into (Pre-)Proto-Saami \*ē before \*č.

6. In the eastern inland dialects of North Saami, *geahči* is phonologically /kiehčii/ and *reašmi* : *reašmmi* is /reášmii : riešmii/. Here, there might be some, perhaps later, innovations that should be studied in more detail in the future. The same goes for the Inari Saami forms *keeči* and *rešmi*. I thank an anonymous reviewer for bringing this to my attention.



## 3.2. Revision of old etymologies and some new etymologies

In this section, I will discuss etymologies for 17 words that belong to the lexical set of iron manufacture and iron-working. Only a small part of this vocabulary is common to all modern Saami languages. Over time these languages have developed and received new words for different aspects of iron manufacture and iron-working, and that is why I will list the words according to their meaning. The meaning is the title of the subsection and all different words that denote that meaning are presented therein, e.g. all words meaning ‘forge (n.)’ are listed in the subsection 3.2.1 ‘forge (n.); furnace’. If additional meanings are given in dictionaries, they will be given along with the Saami word.

### 3.2.1. ‘forge (n.); furnace’

- (16) SaaN *álvi*  
 ← ON *afl* ‘furnace; hearth in a smithy’ (Qvigstad 1893: 90).

Although the distribution of this word is limited only to one Saami language, it is possible that this word is older than Old Norse – it could have been borrowed from Proto-Scandinavian word \*afla (Kroonen 2013 s.v. \*afla). A metathesis has affected the internal consonants, but otherwise the sound substitutions are regular. In addition, the vowel in the second syllable of *álvi* speaks for an earlier loan than Old Norse; words borrowed from such Old Norse words that end with a consonant have been substituted with \*e as the second-syllable vowel (Juutinen & Kuokkala 2023). As also other words related to iron manufacture have been borrowed from Proto-Scandinavian, it is possible that this one was as well. Because the word is found only in North Saami, this makes the Proto-Scandinavian etymology slightly uncertain.

The etymology is tentatively as follows:

- SaaN *álvi* < PS \*ālvē  
 ← PSc \*afla- > ON *afl* ‘furnace; hearth in a smithy’.

It might also be as follows:

- SaaN *álvi* < Proto-North Saami \*ālvē  
 ← ON *afl* ‘furnace; hearth in a smithy’

## 3.2.2. ‘smith’

- (17) SaaS *smirre*; SaaU *smidda*; SaaP *smirrjo*; SaaL *smirjjo*, *smirjár*; SaaN *smid̄đa*  
 ← ON *smiðr*, Sw, Nw *smed* ‘smith’ (Qvigstad 1893: 305; Lagercrantz 1939: 814).

In the western and southwestern Saami languages, the word for smith was borrowed from the Scandinavian languages according to Qvigstad (1893: 305) and Lagercrantz (1939: 814). However, I suggest that the word could be older than Old Norse, namely it could be a borrowing from the Proto-Scandinavian word \**smiþaz* ‘smith’ (VAEO s.v. *smed*; Köbler 2014 s.v. \**smiþaz*) at least in South Saami.

The South Saami word has mostly regular sound substitutions with the Proto-Scandinavian word, inasmuch as in South Saami word-internal \**þ* and \**ð* are regularly substituted with the tremulant \**r*, compare *smirre* with e.g. *vaarese* ‘homespun fabric’ (< \**vāðas* ← PSc \**wāðiz*; Aikio 2009: 272–273).

South Saami *smirre* requires the (Southern) Proto-Saami form \**smiðe* while Ume Saami *smidda* requires the form \**smite*. In addition to the word-internal consonant, all the other sounds are regular. It is well established that initial consonant clusters are allowed in the Saami languages as substitutes for e.g. Proto-Scandinavian initial consonant clusters (e.g. Aikio 2012: 77–78). Even the word-final vowel is regular as Proto-Scandinavian word-final \**a* is sometimes substituted with Proto-Saami \**ɛ* > South Saami *-e*, e.g. *svaajnes* ‘farm worker’ < \**svājñes* ← PSc \**swainaz* (Juutinen & Kuokkala 2023) and *raavke* ‘apparition, ghost’ < \**rāvke* ← \**drauga-* (Aikio 2009: 272).<sup>7</sup>

The fact that the Proto-Scandinavian final consonant \**-z* is not reflected as *s* in the South and Ume Saami words may indicate that this word was borrowed when Proto-Scandinavian \**-z* had already developed into \**-r*.

7. However, Juutinen & Kuokkala (2023) have recently discussed the second-syllable vowels in Proto-Scandinavian loanwords in Saami and observed that in the second syllable, the PSc vowel \**a* is most often substituted with PS \**ɛ* > SaaS *ie*. Nonetheless, it is apparent that in South Saami, the PSc second-syllable \**a* is reflected sometimes as *e* as Juutinen and Kuokkala themselves note in connection with the above-mentioned word *svaajnes* ‘farm worker’.

There are rather many such Proto-Scandinavian loans in which the \*z → s substitution is not reflected, for example, in South Saami: *daajje* ‘dough’ and *laampe* ‘lamb’ (see the words in e.g. Piha 2018: 195, 203, 214, 217 and the literature mentioned there; about the Proto-Scandinavian sound change \*z > r and its relation to Saami see Heikkilä 2014: 121–123). These words could, then, be borrowed from forms such as PSc \*daiʀar and \*lambar, respectively. *Smirre* could have been borrowed from \*smiʀar. This would also imply that the \*-r was not substituted in Saami. It would also mean that these words would be slightly younger than those that were borrowed from forms with \*-z: the sound change \*-z > \*-r is dated approximately to 400–700 CE (e.g. Heikkilä 2014: 123). However, this matter should be studied in more detail in the future.

There are no phonological obstacles to seeing the word as a borrowing from Old Norse into South Saami. Nonetheless, other South Saami words referring to iron manufacture and iron-working were also borrowed from Proto-Scandinavian (see etymologies 2, 21, 22, 25, 26, 27, 31). That lets one assume that the word for ‘smith’ would have been needed quite early, during the contacts with Proto-Scandinavian speakers.

The Pite and Lule Saami words *smirrjo* and *smirjjo* may have been borrowed from the Old Norse oblique form *smiðju* of *smiðja* ‘smithy’, although the semantics make it somewhat uncertain. If the word was an older loan, the word-internal sound substitution for Proto-Scandinavian \*þ and \*ð would have been \*ð, cf. SaaP *vādas*, SaaL *vādas*, SaaN *vādas* ‘homespun fabric’ < \*vādas ← PSc \*wāðiz- (Piha 2018: 210; Álgú s.v. *vaarese*; SaaP Halász 1896). (See also etymology 23 about SaaL *stáddá* and SaaN *stáddi*.) Another possibility is that the origin lies in the Proto-Scandinavian word \*smiþjōn- ‘forge (v.)’ > ON *smiðja* ‘smithy’ (see etymology 22), but the word-internal substitution of Proto-Scandinavian \*ð and \*þ with *r* in Lule Saami would still be a problem as it should have been substituted with \*ð > SaaL *d*. It could perhaps be a loan from late Proto-Scandinavian, from a time when \*ð and \*þ were no longer substituted with a stop in Saami but the second-syllable \*ō had not yet developed into Old Norse *a* (on the sound change PSc > ON, see e.g. Haugen 1982: 28–29), which change would have happened sometime between 450 and 900 CE (Haugen 1982: 28).

These etymologies are, however, problematic regarding the semantics: how would the word for a forge or smithy come to mean ‘smith’? These two conceptions do belong together, but the semantics make it uncertain. One explanation could be that the words *smirjjo* and *smirrjo* have been

borrowed from an agent-noun derivation of Proto-Scandinavian \*smiþjōn- ‘forge (v.)’ with an unknown derivational suffix. A similar possibility has been speculated on concerning a few Finnish words with loan etymologies in Scandinavian (see e.g. LÄGLOS I s.v. *haltija*, LÄGLOS II s.v. *kauppias*).

Lule Saami *smirjár* is a derivation from the verb *smirjjit* ‘forge’ (see etymology 21), and North Saami *smiđđá* represents a regular borrowing of Old Norse *smiðr*.

The etymologies would be as follows:

SaaS *smirre* < Proto-South Saami \*smiðe, SaaU *smidda* < Proto-Ume Saami \*smite ← PSc \*smiþaz > ON *smiðr* ‘smith’ or ← Common Scandinavian \*smiþar > ON *smiðr* ‘smith’.

SaaP *smirrjo*; SaaL *smirjjo* ? ← ON *smiðju* or < PS \*smiðjō ← transitional form between PSc nom. sg. f. \*smiþjō and ON *smiðja* ‘forge (n.)’ or ← *smirjjit* ‘forge (v.)’.

SaaN *smiđđá* < \*smiðe ← ON *smiðr* ‘smith’.

(18) SaaSk *ka'll'jeei* ‘iron forger, iron hammerer’

The word is a derivative of the Skolt Saami verb *ka'll'jed*, which, in turn is a borrowing from Finnish or Karelian *kallita* ‘sharpen by forging; harden’ (see etymology 19).

### 3.2.3. ‘forge (v.); work iron’

(19) SaaSk *ka'll'jed*

This word is a borrowing from Finnish or Karelian *kallita* ‘sharpen by forging; harden’. The word is a Russian loan in Finnish and Karelian from the word *калúть* ‘anneal; heat to red’ (SES s.v. *kallita*).

(20) SaaI *rävdiĵâššad* ‘do smith’s chores’; SaaSk *rau'ddjõõššâd* ‘id.’

The Inari Saami *rävdiĵâššad* and Skolt Saami *rau'ddjõõššâd* are derivations of the words *rävdee* and *rau'ddi* ‘smith’ respectively (see etymology 13).

- (21) SaaS *smírredh*; SaaL *smirjjit*  
 ← ON *smíða*, Sw *smida* ‘forge (v.)’ (Qvigstad 1893, 305; Lagercrantz 1939: 814).

The South and Lule Saami words cannot have been borrowed from Old Norse because there is no word for ‘forge (v.)’ in Old Norse with a short vowel in the first syllable; the verb is of the form *smíða*. The Old Norse *smíða* or its cognates cannot be the loan original because the Saami words show a short *i*.

The Saami words may be derivations of the Saami word with the meaning ‘smith’ or ‘forge (n.)’: SaaL *smirjjo* ‘smith; forge (n.)’ and SaaS *smírre* ‘smith’ (etymologies 17 and 22). A similar derivational relationship from ‘smith’ to ‘forge (v.)’ is seen also in e.g. the Finnic languages: Karelian *sepitá* ‘forge (v.), do smith’s chores’ ← *seppä* ‘smith’ and Estonian *sepistada* ‘forge (v.)’ ← *sepp* ‘smith’ (SES s.v. *seppä*).

The South Saami word could be a borrowing of Germanic \*smiþōn- (the Germanic form in Köbler 2014 s.v. \*smiþōn) – the first syllable *-i-* in Saami would speak for this (cf. Juutinen & Kuokkala 2023). The second syllable *-e* has developed from \**ę* in Proto-Saami < Pre-Saami \**i*. Aikio (2006: 17, 21, 23, 34) gives a few South Saami verbs that are borrowings from Proto-Germanic and show this same second-syllable vowel development, e.g. SaaS *boelnedh* ‘wilt’ < PS \**puolne-* < Pre-Saami \**palni-* ← PG \**falwnō-*. However, the other words with similar sounds, *smírre* ‘smith’ (etymology 17) and *smærjoe* ‘smithy’ (etymology 22), have been borrowed from the Proto-Scandinavian stratum, and it is questionable why the word for ‘forge (v.)’ would have been borrowed earlier. There are some Proto-Germanic loans referring to objects and activities related to iron manufacture and iron-working, e.g. *ruovtie* ‘iron’ (etymology 1), but why would ‘forge (v.)’ have been borrowed first and *smírre* and *smærjoe* only later when all the concepts belong together and are often used in the same contexts? The time gap between these loanwords could be hundreds of years.

The Germanic verb \*smiþōn- has disappeared from Old Norse and Old East Nordic so that its descendants cannot be found in modern languages. It is not known when it disappeared from the language, and it is, therefore, possible that it was still in the language around the Proto-Scandinavian era. If this is the case, then it is well possible that the word was borrowed into Saami at the same time as the words *smírre* and *smærjoe*. Aikio has published an article on words in Saami languages that were borrowed

from unattested Proto-Scandinavian words, thus showing that such loan-words are numerous in Saami (Aikio 2020). The same can be said even of *smirredh*.

My suggestions for etymologies are therefore as follows, reflecting my view that the etymology in South Saami leans towards the unattested Proto-Scandinavian form:

SaaL *smirjjit* ← SaaL *smirjjo* < PS \*smiðjō ← transition between PSc nom. sg. f. \*smiþjōn- and ON *smiðja* ‘forge (v)’.

SaaS *smirredh* ← SaaS *smirre* < SPS \*smiðe- ← PSc \*smiþaz > ON *smiðr* ‘smith’ or < SPS \*smiðe- < \*smiði- ← PG \*smiþōn- or an unattested PSc form.

### 3.2.4. ‘smithy’

- (22) SaaS *smærjoe*; SaaP *smirrjo*; SaaL *smirjjo(goahte)*  
 ← ON *smiðja*; Nw *smidja* ‘smithy’ (Qvigstad 1893: 305; Lagercrantz 1939: 814).

The South Saami word seems to be a regular loan from Proto-Scandinavian \*smiþjōn- ‘smithy’ (see VAEO s.v. *smed*). Proto-Scandinavian first-syllable \*i is substituted with \*ε in South Saami (the Southern Proto-Saami form would be \*smεðjō) when there is labial vowel or open unrounded vowel in the second syllable, cf. e.g. *tæjhkoe* ‘female dog’ < SPS \*tεjkkō (< PS \*tjkkō) ← PSc \*tikō (Aikio 2009: 27 fn. 5) and *bæhta* ‘bit, piece’ < SPS \*pehtā (< PS \*pittā) ← PSc \*bitan- ‘bit’ (Sammallahti 1998: 128, 231; Kroonen 2013 s.v. \*bitan-; Köbler 2014 s.v. \*bitō-). However, this substitution is not found in all the southwestern Saami languages. Thus, originally the Proto-Scandinavian \*i could have been substituted with \*i, and later it would have developed into \*ε. However, a similar substitution is found also in recent loans such as *tjæjloe* ‘kilo’ ← Sw, Nw *kilo* ‘kilo’, and a more convincing proof of the old age of the word is the internal consonant substitution which was explained in etymology 17.

In Pite and Lule Saami, the word could have been borrowed either from Old Norse or Proto-Scandinavian. The loan original in Old Norse would be the oblique form *smiðju* of *smiðja* ‘smithy’ (see etymology 17). Another possibility is Proto-Scandinavian \*smiþjōn-. The first-syllable vowel also regularly matches with the Proto-Scandinavian first-syllable vowel: the

Proto-Scandinavian first-syllable \*i is regularly substituted with *i* in these two languages, e.g. SaaL *dijikko* ‘female dog < PS \*tjikkō ← PSc \*tikō and SaaL *bihttä*, SaaP *bihтта* ‘piece’ < PS \*pittā ← PSc \*bitan- ‘bit’ (Sammallahti 1998: 128, 231; Kroonen 2013 s.v. \*bitan-; Köbler 2014 s.v. \*bitō-). However, the internal consonant substitution represents the same kind of problem as in the words SaaP *smirrho*, SaaL *smirrho* (etymology 17), and SaaL *smirrhjit* (etymology 21). I propose the same as I proposed for the other words, namely that the word was borrowed during an intermediate period during which the Proto-Scandinavian internal dental fricative began to be substituted with a tremulant rather than a stop, but the Proto-Scandinavian second-syllable \*ō was still intact. It is not possible to define which one of these two etymologies is correct: the Old Norse oblique form or a transition period from Proto-Scandinavian to Old Norse.

The etymologies for these Saami words are as follows:

SaaS *smærjoe* < SPS \*smēδjō or < Proto-South Saami \*smēδjō < SPS \*smiδjō ← PSc \*smiþjōn- > ON *smiðja* ‘smithy’.

SaaP *smirrho*; SaaL *smirrho* < PS \*smiδjō ← transitional form between PSc nom. sg. f. \*smiþjō and ON *smiðja* ‘smithy’ or SaaP *smirrho*; SaaL *smirrho* < PS \*smiδjō ← ON *smiðju*.

### 3.2.5. ‘anvil’

- (23) SaaL *stáddá*, *stádde*; SaaN *stáddi*  
 ← ON *steði* ‘anvil’ (Qvigstad 1893: 317; Lagercrantz 1939: 836).

Qvigstad has determined the Lule and North Saami words to be loans from Old Norse; Lagercrantz describes them as Scandinavian. Nevertheless, these words are older loans from the Proto-Scandinavian word \*staþja- ‘anvil’ in the neuter (> Sw *stád*) (for the PSc etymology, see VAEO s.v. *sme*; for Sw *stád* see e.g. SAOB s.v. *stád*, noun 5). Aikio (2012: 77–78; 110) has shown that word-initial consonant clusters of the type sC- came into the Saami languages with loanwords from Proto-Scandinavian. The first-syllable long vowel in Lule and North Saami is a regular substitution of Proto-Scandinavian first-syllable \*a. Also the substitution of the internal consonant (SaaL -*dd*- and SaaN -*đđ*- ← PSc \*-þ-) in the words is regular (see my discussion in the entries for etymologies 17, 21, and 22 and Aikio 2009: 272–273; Piha & J. Häkkinen 2020: 112), although Lule Saami seems,

at least in some cases, to have a short *d* when North Saami has *đđ*, e.g. SaaL *råde* ~ SaaN *ráđđi* ‘advice’ ← PSc \**rāda*- ‘advice; plan’ (VAEO s.v. *råde*; Piha 2021: 33). The second-syllable vowel is also a regular substitution: the Proto-Scandinavian second-syllable vowel \**a* is substituted with *e* /*ie*/ in Lule Saami and *i* /*ii*/, /*ie*/, or /*ee*/ (depending on the dialect) in North Saami, consider for example SaaL *råde* ~ SaaN *ráđđi* above and PSc \**wanga-* → (PS \**vāŋkē* >) SaaL *vágge*, SaaN *vággi* ‘valley’.

However, there is a difficulty in the etymology: the Lule Saami word *stáddá* irregularly matches with the Proto-Scandinavian loan original when it comes to the second syllable. It is possible that this Lule Saami word was borrowed from the masculine form of the Proto-Scandinavian word \**staþjan-*. There are some Lule Saami words that reflect a similar substitution as *stáddá*, e.g. *sjlávttjá* ‘warble fly’ < PS \*(s)lāvčā ← PSc \**klaggjan-* ‘horsefly’ (VAEO s.v. *klegg*; Aikio 2012: 110).

Therefore, I suggest the following etymologies:

SaaL *stádde*; SaaN *stáđđi* < PS \**stāðē* ← PSc \**staþja-* (neuter) ‘anvil’ > Sw *stād*.

SaaL *stáddá* < PS \**stāðā* ← PSc \**staþjan-* (masculine) ‘anvil’ > ON *steði*.

#### (24) SaaI *terppâmvuáláás*

The Inari Saami word is a compound word formed by the components *terppâm-* and *vuáláás* ‘platform’. The word *terppâm* is an action noun derived from the verb *terppâđ* ‘forge; beat; pound’ (Korhonen 1981: 290–291; for the verb, see etymology 3). As for the etymology of *vuáláás*, it is a diminutive derivation from the word *vyeli-* ‘underneath; sub’ which goes back to Proto-Uralic (Sammallahti 1988: 536).

#### 3.2.6. ‘ember; glowing coal’

- (25) SaaS *praedtie*; SaaU *práddie*; SaaP *kraat'tie*; SaaL *rádde*; SaaN *ráddi*;  
SaaI *ráddi*; SaaSk *rä'dd*  
← PSc \**branda-* ‘fire; a burning log’ (Theil 2012: 64).

This word is not solely iron-related word and can refer to other burning processes as well. However, a furnace with heat and embers is a central part of iron manufacture and iron-working, and therefore the word has



been included in the data. The Saami words were earlier determined to be borrowings from Old Norse (Qvigstad 1893: 252; Lagercrantz 1939: 680, 711; Lehtiranta 2001 s.v. \*rāntē), but Rolf Theil (2012: 64) has noted the Saami words to be loans from Proto-Scandinavian \*branda-. In general, this notation is correct, but some adjustments should be made.

The word was borrowed separately into the southwestern Saami languages, on the one hand, and the more northern Saami languages, on the other. This is seen in the initial consonants of the words: South and Ume Saami have a consonant cluster of the form stop + liquid, while the other Saami languages have substituted the Proto-Scandinavian consonant cluster with a single liquid consonant. Such words in which these substitutions have happened are many (Aikio 2012: 77–78, 110–111; Piha & J. Häkkinen 2020: 107, 117). Thus, South and Ume Saami require a protoform \*prāntē while the other Saami languages require \*rāntē.

The Pite Saami *kr-* is somewhat mysterious as it seems to be irregular. It is possible that the Pite Saami word is a hypercorrect form. In Pite Saami, initial clusters with a velar plosive and liquid are sometimes seen in such Proto-Scandinavian loanwords that have a single liquid in Saami languages other than South Saami and Ume Saami (e.g. SaaP *klaivē* ~ SaaN *láivi* ‘mild; weak’ ← PSc \*slaiwaz, Aikio 2012: 78, 110; Álgu s.v. *láivi*). It is possible that this tendency has also affected the development of hypercorrect *kr-* in *kraat'tie*.

The parallel etymologies of South Saami and other Saami languages are as follows:

SaaS *praedtie*; SaaU *práddie* < SPS \*prāntē  
 ?SaaP *kraat'tie*; SaaL *rádde*; SaaN *ráddi*; SaaI *ráddi*; SaaSk *rä'dd* < PS \*rāntē  
 ← PSc \*branda- > ON *brandr* ‘fire; firewood’.

### 3.2.7. ‘steel’

- (26) SaaS *staelie*; SaaU *stállie*; SaaP *ställe*; SaaL *ställe*; SaaN *stállí*; SaaI *stääli*; SaaSk *stää'll*; SaaK *stāll*(<sup>e</sup>) (T. I. Itkonen 1958: 520)  
 ← ON *stál*, Sw *stål*, Nw *stål* ‘steel’ (Qvigstad 1893: 318; Lagercrantz 1939: 837; T. I. Itkonen 1958: 520).  
 SaaSk Njuõ'ttjäu'rr dialect *stāl̥ĕ* (T. I. Itkonen 1958: 520) ← Russian *сталь* ‘steel’.

The word for ‘steel’ was seen as a loan from Scandinavian by Qvigstad (1893: 318) and Lagercrantz (1939: 837), but T. I. Itkonen (1958: 520) has defined one of the Skolt Saami words and the Kildin Saami words to be of Scandinavian origin, while the word in the Njuõ’ttjäu’rr dialect of Skolt Saami is a Russian loan.

The word seems to be Common Saami as it is found in most Saami languages, and it might have been present in Proto-Saami before its disintegration. A possible loan source is the Proto-Scandinavian word \*stahla- ‘steel; firm’ (Kroonen 2013 s.v. \*stahla-; Köbler 2014 s.v. \*stahala-) from which the Scandinavian words derive. The sound substitutions are all regular from South Saami to Skolt Saami: the word-initial consonant cluster is of the type sC- which is found in these Saami languages (Aikio 2012: 77). The vowels in the words are regular as well.

The only exception is the word in the Njuõ’ttjäu’rr dialect of Skolt Saami. According to T. I. Itkonen (1958: 520), the form is *stäl̥ě* and there is no consonant gradation. The word must be a borrowing of Russian *сталь* ‘steel’ rather than Proto-Scandinavian in this dialect for three reasons: 1) the word has no consonant gradation; 2) Scandinavian loanwords are rare in the dialect; and 3) there is an adjective *stàtnai* ‘steel-like, steely’ in the dialect that is clearly a Russian loan (Markus Juutinen pers. comm.).

Also, the Kildin Saami word must be younger than Proto-Scandinavian as the consonant cluster sC- did not develop within the language that early as proven by, e.g. the word SaaK *kà̃<sup>d</sup>t̥š̥* (T. I. Itkonen 1958: 501) vs. SaaS *skaaltjoe*, SaaN *skálžu*, SaaSk *skälžž* ‘seashell’ (Aikio 2012: 110; Juutinen 2023: 88). Russian as the loan source is a plausible option for Kildin Saami, but it could also have been borrowed from Skolt Saami.

The etymology for South Saami–Skolt Saami is as follows:

SaaS *staelie*; SaaP *ställe*; SaaL *ställe*; SaaN *stáll*i; SaaI *stääli*; SaaSk *stää’ll*  
 < \*stälē ← PSc \*stahla- > Sw *stål*.

For the Njuõ’ttjäu’rr dialect of Skolt Saami and Kildin Saami it is the following:

SaaSk Njuõ’ttjäu’rr *stäl̥ě*; SaaK *stäl̥l̥*(<sup>e</sup>) ← Russian *сталь*.

The etymology for the Kildin Saami word could also be this:

SaaK *stäl̥l̥*(<sup>e</sup>) ← SaaSk *stää’ll*.

### 3.2.8. ‘ore’

- (27) SaaS *maalme*; SaaU *málbma*; SaaL *málmma* also ‘copper, bronze’; SaaN *málbma* ‘heartwood’; SaaI *malamá*; SaaSk *malmm*  
 ← Scandinavian, cf. Gothic *malma* ‘sand’ (Qvigstad 1893: 230; Lagercrantz 1939: 471).

The meaning ‘ore’ does not necessarily refer only to iron ore; it could refer to other metal ores as well. However, ore is a central concept in iron manufacture, and therefore the words for ore are discussed here.

Qvigstad (1893: 230) and Lagercrantz (1939: 471) equate the word with Scandinavian words. A possible source for the loan could, however, be Proto-Scandinavian \*malma-; the modern languages that descend from Proto-Scandinavian also show the meaning ‘ore’ (VAEO s.v. *malme*; Köbler 2014 s.v. \*malma-). The sound substitutions in Saami are quite regular: the long vowel in the first syllable in the Saami languages may speak for an old loan. Also, the word-internal consonant cluster is regular: North and Ume Saami have regularly developed a stop between a liquid and nasal while South and Lule Saami have not (Korhonen 1981: 184). As for the word-final vowel, see etymology 17. Thus, the Proto-Saami reconstruction would be \*mälme.

However, there are no phonological restrictions against the word being a loan from the Old Norse *malmr* ‘ore’. The short vowels in the first syllable in Scandinavian were sometimes substituted as long even after the Proto-Scandinavian period, even though also a short *a* emerged in late Proto-Scandinavian loanwords, at least in South Saami (Piha & J. Häkkinen 2020: 118). As Juutinen & Kuokkala (2023) have shown, the Saami languages have substituted also the vowels in the last syllable regularly.

As I will discuss in Section 4, the data of this paper shows that at least some Saami-speaking groups were involved in iron manufacture and iron-working already in the early Iron Age. That means that they would have needed a word for the substance from which iron is made. Therefore, it is plausible to think that the word for ‘ore’ is an old loan rather than a new one. Even if the word for ‘iron’ might have also had the meaning of ‘ore’ as the meaning of the Old Norse word *rauði* suggests (see etymology 1), in an iron-producing society distinguishing the concepts of iron and ore would have been important. Thus, I see the word as a Proto-Scandinavian loanword, but I will not dismiss the Old Norse etymology either.

The etymologies of ‘ore’ in the Saami languages are as follows:

SaaS *maalme*; SaaU *málbma*; SaaL *málmma*; SaaN *málbma*; SaaI *malmâ*; SaaSk *malmm* < PS \*mālmę ← PS \*malma- ‘ore; sand’ or ← ON *malmr*.

### 3.2.9. ‘pliers’

(28) SaaSk *cee’pc*

This word is a derivative of *ce’pcced* ‘pinch (v.)’. The last-mentioned word is Common Saami with the Proto-Saami form \*cipcē (Lehtiranta 2001 s.v. \*cipcē). However, the etymology is not known further.

(29) SaaN *doanggat*; SaaI *toongih*

This is a recent loan from Finnish *tongit* ‘pliers’. This can be seen from the labial vowel of the first syllable and the plural form of both the Finnish and the Saami words. The combination of nasal and consonant has not been denasalized either. In addition, the Inari Saami combination of the first- and second-syllable vowels indicates a recent loan from Finnish. The Finnish word is a borrowing from the Scandinavian languages (cf. Sw *tång*) (SES s.v. *tongit*).<sup>8</sup>

### 3.2.10. ‘bellows’

(30) SaaS *baeljiestahke*

The South Saami word for ‘bellows’ is a derivation from the verb *baeljiestidh* ‘blow (e.g. of a wind)’ (see the verb in Bergsland & Magga 2007 s.v. *baeljiestidh*) or of a hypothetical noun \*\*baeljie which is not found in (modern) South Saami. The derivational suffix is *-stahke* which is used, for example, to derive nouns denoting tools or instruments from verbs (Magga & Magga 2012: 110). The literal meaning of *baeljiestahke* would thus be ‘blower’.

I tentatively suggest that the word is a loan from a form of North Finnic, cf. Finnish *palje* (sg.) ‘bellows’. The Finnish word is, in turn, a borrowing from Proto-Germanic \*balgiz ‘bellows’ (e.g. SES s.v. *palje*). The Proto-Germanic or Proto-Scandinavian \*balgiz is less probable as a loan original for

8. However, the Finnish word is used in the plural when referring to one item, while the Scandinavian words are not. This might be an analogy from the other Finnish word for ‘pliers’, *pihdit*, that is also often used in the plural form.

the South Saami word, because the internal \*-g- is substituted by *k* in South Saami (e.g. *bearkoe* ‘meat’ ← PSc \*bergō-). It is possible that the *g* before *i* in \*balgiz was relatively palatal and would have been substituted by *j* and not *k* in the Saami languages.<sup>9</sup> I have not been able to find any such loanwords in Saami that would show this substitution, so this etymology is uncertain.

The *-j-* in Finnic *palje*, in turn, could well be substituted with *-j-* in South Saami. South Saami substitutes Proto-Scandinavian word-internal \**j* with *-j-* after a liquid (e.g. *saalje* ‘goat willow, great sallow’ ← PSc \*saljōn-, Piha 2018: 208; for the Proto-Scandinavian word, see VAEO s.v. *selje*), which would support a similar substitution in loans from Finnic. However, there are not many examples for such loans from Finnic: It is known that South Saami has some old loanwords from Finnic, one example is *hierkie* ‘horse’ that was borrowed from Finnic *härkä* ‘ox’ (Heikkilä 2014: 240 fn. 200), but it might be considerably earlier than \*\*baeljie.

The Finnic word *palje* is in the weak grade, and the strong grade of the word would have *-k-*, e.g. *palkeet* (pl.) ‘bellows’. The original weak grade of the consonant *-k-* would have been \*-g- or \*-γ-, but this had developed into *-j-* already in Michael Agricola’s language (see e.g. VKS s.v. *nylkeä*), so the change had happened sometime in the Middle Ages. Therefore, the borrowing of \*\*baeljie from Finnic would most likely have happened in the Middle Ages (1200–1500 CE). The word could have been borrowed, for example, from the forms of Finnic spoken in northern parts of Sweden (the modern Meänkieli).<sup>10</sup> The question is why this word would have been borrowed so late when the need for bellows was present already in the earlier times. One explanation could be that there was another word for ‘bellows’ that was replaced by \*\*baeljie in the Middle Ages.

The semantic development of *baeljestahke* is quite interesting. If there has been a noun for bellows, \*\*baeljie, it must have disappeared from the language at some point, most likely soon after *baeljestahke* had been taken up as the word for bellows. Thus, I propose that the word has been derived from the verb *baeljestidh* which was, in turn, derived from \*\*baeljie before the noun disappeared.

Thus, the suggestions for etymologies are the following:

SaaS *baeljestahke* ← SaaS *baeljestidh* ← SaaS \*\*baeljie < SPS \*bäljje-  
← Finnic, e.g. Fi *palje* ‘bellows’ or ← PG/PSc \*balgiz > Sw *bälg*.

9. I thank an anonymous reviewer for leading my thoughts in this direction.

10. I thank Petri Kallio for discussing this with me.

## 3.2.11. ‘iron slag’

(31) SaaS *ruevtieskaarhte*

The word is a compound with the components *ruevtie* ‘iron (see etymology 1) and *kaarhte* ‘coating (in a saucepan); slag’.

The South Saami word *kaarhte* is most likely a loanword from Proto-Scandinavian \*skarda- ‘tile’ (Kroonen 2013 s.v. \*skarda-; Köbler 2014 s.v. \*skarda-). The sound substitutions are quite regular: the initial *sk-* is found in many Proto-Scandinavian loanwords in South Saami, cf. *skaaltjoe* ‘seashell’ ← PSc \*skaljö- (Aikio 2012: 77) as is the long *aa* as the first-syllable vowel. The word-final vowel is also regularly substituted as discussed in etymology 17.

The word-internal consonant combination *-rht-* in South Saami seems slightly problematic, however. Usually, this combination seems to substitute for the Proto-Scandinavian \*-rþ(r)- as in *noerhte* ‘north’ (← \*norþra-, Koivulehto 1988: 28; Köbler 2014 s.v. \*norþra-) or *maarhte* ‘pine marten’ (← \*marþra-, Bergsland 1995: 15; Köbler 2014 s.v. \*marþra-). Proto-Scandinavian \*-rd- is substituted with *-rt-*, cf. *vaartasjidh* ‘look closely, examine’ (← \*wardō-, Aikio 2009: 287). In my Proto-Scandinavian loanword data (see Piha 2018), there are not very many Proto-Scandinavian words with \*-rþ(r)- (or metathetic \*-þr-), \*-rd-, or \*-rt- borrowed into South Saami; altogether there are only five. The substitution rule might become clearer when more loanwords with these substitutions are found.

The semantic development from the Proto-Scandinavian adjective or noun is not transparent. In Proto-Scandinavian, there is also an adjective \*skarda- ‘damaged, scarred’ or noun \*skarda- ‘notch, cut, piece, section’. Semantically, the adjective is more plausible than the noun: slag can be perhaps seen as damaged goods as it is not usable in working iron. Also, a coating on a pan could be seen as the pan being damaged or scarred. Slag can also be seen as a piece that is “cut” from iron when the iron is reduced. However, a noun is more likely borrowed from a noun than an adjective.

In many Saami languages, the cognates of South Saami *kaarhte* have a meaning ‘thin layer of snow frozen on to the ground’ and ‘incrustation, crust’; only the South Saami word means ‘slag’. The Ume Saami word *skárttie* and Lule Saami word *skártta* include the concept of bad (reindeer) pasture when the ground is covered with frozen snow. It is probable that the South Saami meaning ‘slag’ is a somewhat later semantic development, and the original meaning is closer to the meanings in other Saami languages.

The compound could have existed since the younger component *skaarhte* was borrowed into the language. The compound is, however, probably a later development.

The etymology for *skaarhte* is as follows:

SaaS *skaarhte* < PS \*skārte/\*skārhte ← PSc \*skarda.

- (32) SaaN *ruovdebázahus* ← *bázahus* ‘leave behind’ ← *báhcit* ‘stay behind; be left behind’ < \*pācē (Lagercrantz 1939: 614; Lehtiranta 2001 s.v. \*pācē).

The word is a compound with the components *ruovde-* (*ruovdi* ‘iron’, see etymology 1) and *bázahus* ‘waste; slag’. The origin of *bázahus* is not known farther back than Proto-Saami. The scientific dictionaries (e.g. Lagercrantz 1939: 755) do not mention the word, and it is not known if this word was in use for ‘iron slag’ already in prehistoric times.

### 3.3. Summary

There are altogether 32 words in the data that belong to the lexical set of iron manufacture and iron-working. They are presented in the Appendix with their origin and absolute dating. Derivatives (7 words) are given together with their roots if they are in the data; if not, they are found as individual words in the Appendix. Compounds (4 words, of which one is a compound with a derivative as the latter component) are also listed in the Appendix.

Compound words are not easy to date as there is often no possibility to know when the compounding was done. However, it is possible to define a *terminus post quem* for compounds: no compounding can be done before all the parts of compound words are present in the language. However, the compounding could have happened at any time after that. (For dating of compounds, see Piha 2020a: 117). The same goes for the derivatives in the data. The compounds (SaaSk *rau'ddipōrtt* ‘forge (n.)’, SaaI *terppâmvuálááš* ‘anvil’) and the derivatives (SaaI *rävdiĵâššad* ~ SaaSk *rau'ddjōōššād* ‘forge (v.)’) are from around 400 CE at the earliest. The South Saami derivative *baelĵiestahke* dates to 1200 CE at the earliest. For the North Saami compound *ruovdebázahus* ‘iron slag’, the Proto-Saami period is the *terminus post quem*. In addition, the Lule Saami (*smirĵit* ‘forge (v.)’, *smirĵár* ‘smith’) and South Saami (*smirredh* ‘forge (v.)’) derivatives date to 200–500

CE at the earliest. South Saami *smirredh* has also another etymology: it might be a loanword from Proto-Germanic. There is no etymology for the Skolt Saami derivative *cee'pc* 'pliers' or its stem *ce'pcced* 'pinch (v.)'

The table in the Appendix shows that most words come from Proto-Scandinavian (8 words) and Finnic or Finnish (7). In addition, two words have their origin in either Proto-Scandinavian or Old Norse, and two in the transition period from Proto-Scandinavian and Old Norse (or Old Norse). Along with the Finnish words, there are two words that were borrowed either from Finnish or Karelian and one very old borrowing from Pre-Finnic. Two words originate in Proto-Germanic or North-West Germanic. Three words are borrowed from Russian and one Kildin Saami word is a loan from either Russian or Skolt Saami.

The data includes one very old word that is inherited from Proto-Finno-Permic (SaaS *baste* 'pliers' and its cognates) as well as one old loanword from Proto-Indo-Iranian (SaaS *vietjere* 'hammer' and its cognates), but these are words that have also other meanings than those related to iron or metal. Thus, the original meaning might have been something unrelated to iron, and even today, the words have other meanings as well, not only those related to iron (see the Appendix). When they came to be iron-related is not easy to say, other than perhaps sometime in the Iron Age.

However, if we look at different Saami languages separately, it is obvious that the origins of the iron-related vocabulary differ from language to language. This is illustrated in Table 1.

As seen in Table 1, South and Lule Saami have received or preserved the most Proto-Scandinavian words while the other Saami languages have 0–4 Proto-Scandinavian loanwords. This can certainly represent a gap in the research history, inasmuch as many Saami languages are much less studied than others. It is, however, quite surprising that North Saami does not have as many iron-related words borrowed from Proto-Scandinavian. It is well known that North Saami has a vast Proto-Scandinavian loanword stratum in general and the language is best documented of all the Saami languages. If all the words originating in between Proto-Scandinavian and Old Norse are counted in, Lule Saami has nine loanwords, South Saami six or seven, Pite Saami four, and North Saami six loanwords from this direction. The other languages have 0–3 words.

North and Inari Saami have received more words from Finnic or Finnish than the other languages (Table 1). Skolt Saami has also received words from Finnish and Karelian but also Russian. That is expected as these languages



Table 1: Origin of the iron manufacture and iron-working vocabulary in different Saami languages<sup>a</sup>

Loan origin	Amount of words from different origins in different Saami languages								
	SaaS	SaaU	SaaP	SaaL	SaaN	SaaI	SaaSk	SaaK	SaaT
PII	1	1	1	1	1	1	1	1	1
PFP	1	1	1	1	1	1	1	–	–
Pre-Fi	1	1	1	–	–	–	–	–	–
PG/NWG	1	1	1	1	2	2	1	1	1
PSc	4	2	2	5	3	2	2	–	–
PSc/Common Scandinavian	1	1	–	–	–	–	–	–	–
PSc/ON	1	1	–	1	2	1	1	–	–
Transition between PSc & ON or ?ON	–	–	2	2	–	–	–	–	–
ON	–	–	–	–	1	–	–	–	–
Fi/PG or PSc	1	–	–	–	–	–	–	–	–
Fi	–	–	–	1	6	6	3	2	2
Fi/Karelian	–	–	–	–	–	–	1	–	–
Russian	–	–	–	–	–	–	3	–	–
Russian/SaaSk	–	–	–	–	–	–	–	1	–

- a. Derivatives and compounds are not included in the table, because the date of the compounding and derivation is not easy to define. The only exception is South Saami *baeljiestahke* (borrowed from Fi/PG or PSc) ‘bellows’, which might have its origin in the word *\*\*baeljie* which also meant ‘bellows’.

have been in contact with Finnish and Karelian, and for Skolt Saami, Russian, much more than Saami in Scandinavia. It is interesting that only the southwestern Saami languages, South, Ume, and Pite Saami have a word borrowed from Pre-Finnic, namely *sjijle* ‘coal’. In other Saami languages, this word has most likely been replaced by the word that is nowadays used in this sense from Lule to Ter Saami: *hilla* borrowed from Finnish *hiili*.

Interesting is also the fact that both of the two Proto-Germanic/North-West Germanic words are found only in North and Inari Saami. All the other languages have one Proto-Germanic loanword, the one with the meaning ‘iron’, although one South Saami word (*baeljiestahke* ‘bellows’) might be from Proto-Germanic, but there are other explanations also. (See the Appendix and Table 1.)

The data is numerically very small, and therefore it is important to be cautious when interpreting the results. With this in mind, I will next discuss some possible interpretations about what the age and origin of iron-related words might tell about iron manufacture and iron-working among the Saami speakers.

#### 4. The age and origin of iron manufacture and iron-working among Saami speakers

In this article, I have studied the origins of Saami words that are related to iron manufacture and iron-working. My aim has been to determine what the ages and origins of words referring to iron manufacture and iron-working in the Saami languages are. In this section, I shall try to answer this question (Section 4.1). I also hypothesized that several of the words might date to periods that are contemporaneous with the archaeological pottery types of Luukonsaari (1000 BCE – 300 CE) and Sirnihta (400 BCE – 300 CE). Both types have a connection with iron manufacture from around 400 BCE. In this section, I suggest some preliminary correlations with the archaeological material (Section 4.2) which we will, then, further develop in a later multidisciplinary article within the “Iron Saami” project.

##### 4.1. The ages and origins of iron-related words

According to the analyzed data, it seems that Saami speakers have received their iron-related words mainly from two different directions: Germanic (14 and two possible PG/PSc loans, SaaS *smirredh* and SaaS *\*\*baeljie*) and Finnic, Finnish, or Karelian (9). In addition, the data shows individual words that originate, for example, in Proto-Indo-Iranian, Proto-Finno-Permic, and Pre-Finnic. Skolt and Kildin Saami have also received words from Russian, and they are quite recent loans.

North, Inari, and Skolt Saami have had intensive contacts with Finnic and Finnish.<sup>11</sup> As for these loans, it is not easy to define which words are inherited cognates and which are borrowings due to a process known as etymological nativization. This process happens when there are bilingual

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11. Also, Lule Saami has had intensive contacts with Finnic and Finnish, but this is not visible in the data of the present research apart from one word, namely *hilla* ‘coal’.

speakers in related languages who identify patterns of regular sound correspondences and apply them by nativizing loanwords in such a manner that can make borrowings look like cognates (Aikio 2012: 68; for more details, see also Aikio 2007a). Another problem with Finnic loanwords in Saami is that there are no phonological criteria for distinguishing early loanwords from cognates (Aikio 2006: 41). Thus, I have given most of the Finnic and Finnish loanwords only a rough dating to after 400 CE, but some of them could be significantly younger. Skolt Saami has probably borrowed a word from Karelian, but it might equally have been borrowed from Finnish.

Proto-Germanic dates to around 500–1 BCE, Proto-Scandinavian around 200–500 CE, and Old Norse around 800 CE. It has been possible to date some words to the transition period between Proto-Scandinavian and Old Norse around 500–800 CE. Within the lexical set, South Saami and Lule Saami show the most intensive contacts with Proto-Scandinavian. Ume, Pite, North, Inari, and Skolt Saami show some contact with Scandinavian, too, but less than South Saami and Lule Saami. The situation of North Saami is slightly surprising: it is well known that North Saami has a broad Proto-Scandinavian loanword stratum in general, yet it does not seem to include that many iron-related words.

#### 4.2. Tentative correlations with archaeology

The Proto-Scandinavian borrowings are often slightly older than Finnic/Finnish words, and the Russian words in the eastern Saami languages are even younger. It is entirely possible that the more northern Saami languages have had more of these Proto-Scandinavian words but these words have been replaced.

Archaeologically, there is an “empty” phase in the material culture in Northern Fennoscandia starting around 300 CE: production of ceramics and iron ceases (e.g. Hamari & Halinen 2000: 156).<sup>12</sup> During this period, iron-related words might have fallen out of use and disappeared from Proto-Saami and its dialects, which would explain the loss of Proto-Scandinavian loanwords. Some words, like North Saami *áššu* ‘glowing wood embers on a hearth’, have gone through a semantic change from an iron-related meaning (‘furnace’) seen in e.g. South Saami *aassjoe* (see etymology 2 and

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12. For a scientific discussion on the question of archaeological invisibility, see Piha et al. 2023: 8–10.

Aikio 2012: 79) to a non-iron-related meaning. Later, iron manufacture and iron-working became familiar again, perhaps via Finnish, Russian, and Old Norse contacts, and that is when new iron-related vocabulary was borrowed. The question of why iron-working would have fallen out of use or diminished significantly remains open. It might be connected to a new environment that offered other livelihoods than that of iron manufacture and iron-working, but this remains a hypothesis for now. The disappearance of Proto-Scandinavian loans may also be connected to the fast spread of Saami.

The development was different for the predecessor of the southwestern Saami languages. It is proposed that Southern Proto-Saami drifted off from Proto-Saami around 200 CE and ended up in central Scandinavia (J. Häkkinen 2010: 59; Piha 2018; Piha & J. Häkkinen 2020: 119). In central Scandinavia, intensive iron manufacture developed in the early Iron Age (Magnusson 1986: 168, 173) and archaeologists have seen the Saami speakers, or many of them, as part of this iron-manufacture network (e.g. Fossum 2006: 143; Piha 2020b: 175–176). During this time, another language group inhabiting the same areas as speakers of Southern Saami (and Paleo-European language(s), see e.g. Aikio 2004; 2012; Piha 2018: 172–175) were the Proto-Scandinavian speakers. This scenario explains why there are plenty of Proto-Scandinavian loans among the iron-related vocabulary in South Saami. It seems, according to the origins of this vocabulary, that also the speakers of the predecessors of the Pite and Lule Saami have been part of an iron-producing network in central Scandinavia or areas near to it from early times. As for the rather few iron-related words in another Southern Saami language, Ume Saami, this might represent merely a gap in research as Ume Saami language documentation is poorer than that of e.g. South or Lule Saami.

The scenario described above assumes, however, that many of the Proto-Scandinavian loanwords were borrowed into the predecessor of South Saami in central Scandinavia, and thus, they might never have been present in the more northern Saami languages. It is known that the southwestern Saami languages have received Proto-Scandinavian loanwords independently from other Saami languages (Piha & J. Häkkinen 2020), and it is seen even in the data of this article (see etymologies 17 SaaS *smirre*, cf. SaaL *smirjjo* ‘smith’; 22 SaaS *smærjoe* cf. SaaL *smirjjo* ‘smithy’; 25 SaaS *praedtie*, cf. SaaN *ráddi* ‘glowing coal’). Therefore, an option is that these words were never borrowed into Proto-Saami, and that is why it was necessary to borrow words for these concepts from Finnish, Karelian, and Russian. The fact that Lule (and Pite) Saami have borrowed these words

(*smirjjo* ‘smithy’, *smirjjit* ‘forge (v.)’, and *smirjjo* ‘smith’) from a later Scandinavian language stratum that descends from the same word as the South Saami words, strengthens the proposal that South (as well as Pite and Lule) Saami borrowed the words in central Scandinavia for the first time.

Perhaps Proto-Saami was divided into two (or more) groups, of which one was a more western group inhabiting the western parts of the area of modern Finland that later moved to Central Scandinavia and had intensive contacts with the iron-producing Proto-Scandinavian speakers. The other would have been an eastern group that connects to the archaeological Luukonsaari and Sirnihta groups that had less contact with the Scandinavian-speaking iron-producers. Contacts with Proto-Scandinavian were, however, otherwise quite intensive, because the Proto-Scandinavian loanword stratum is large in the more northern Saami languages.

Another explanation for the lack of iron-related Proto-Scandinavian loanwords in the more northern Saami languages would be that the archaeologically visible iron manufacturing of the early Iron Age in inland Finland was connected to language groups that did not speak Saami. Such an explanation has been presented before, and I have accepted it in my earlier research (Piha 2020b: 50): Heikkilä (2011: 76) has proposed that the Saami languages spread to Lapland around 300 CE. That immigration would have caused the earlier inhabitants to abandon ceramics and iron production. However, no reason for why this might have happened has been given. Heikkilä (id.) does mention the fur trade, but he does not describe more closely how it connects with the spread of Saami languages and the cessation of ceramic and iron production. In this scenario, the iron manufacturers were not Saami speakers but other people(s) with another language or languages that are called Paleo-European (see e.g. Aikio 2004) and/or a Uralic *x*-language (Rahkonen 2013: 182–183).

The period when the Saami speakers first got acquainted with iron was not, however, the time of the Proto-Scandinavian loanwords. The word for ‘iron’ as well as some other iron-related words were borrowed already from Proto-Germanic or North-West Germanic (see Table 1). It is quite possible that Saami speakers learned some basic iron manufacturing or iron-working during this time, but the intensive phase of iron manufacturing and iron-working began a few centuries later.

It is not simple to define, with the present knowledge of the Saami past, which of the above-described scenarios is the most plausible one. That much is clear that Saami speakers did know about iron and possibly how

to work it already quite early in the Roman or even Pre-Roman Iron Age (approximately 500 BCE – 400 CE).

I find it most likely that the Southern Proto-Saami speakers did have an active role in the iron-manufacturing network in central Scandinavia from 200 CE onward. However, it is somewhat a mystery how the speakers of Saami in the area of modern inland and northern Finland connect to iron manufacture during the time when Saami speakers spread to the area (the last centuries before the Common Era and the first centuries of the Common Era). It is an archaeological fact that there has been iron manufacture in the area inhabited also by the Saami speakers in the Roman Iron Age. The vocabulary related to iron manufacture and iron-working does not give any certainty on the matter: it is possible that the Saami took part in the iron-related activities and the words disappeared from some of the Saami languages at some point in history. It is also possible that the disappearance is only a research gap: in this research, I have not gone through the scientific dictionaries systematically word by word. It is well possible that the dictionaries include words not found in the data here and the iron-related vocabulary in languages from North Saami to Ter Saami is larger than presented here.

Another question to be pondered is why the earliest iron-related vocabulary is borrowed from Germanic and Scandinavian language strata if these groups did not inhabit the inland areas of modern-day Finland. Did the Saami speakers learn how to manufacture iron in the western areas of Finland and then return to the inland areas to practice iron manufacturing? Or was there a Paleo-European-speaking population who taught iron manufacturing to the Saami speakers? If this was the case, this contact has not left many traces, if any, in the Saami languages. The future multidisciplinary research within the project “Iron Saami” will likely solve some of this mystery.

## Abbreviations

Fi	Finnish	SaaL	Lule Saami
Nw	Norwegian	SaaN	North Saami
NWG	North-West Germanic	SaaP	Pite Saami
ON	Old Norse	SaaS	South Saami
PG	Proto-Germanic	SaaSk	Skolt Saami
PS	Proto-Saami	SaaT	Ter Saami
PSc	Proto-Scandinavian	SaaU	Ume Saami
SaaI	Inari Saami	SPS	Southern Proto-Saami
SaaK	Kildin Saami	Sw	Swedish

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## Appendix: The words in the data and their origin

The words are organized according to origin. Derivatives are given together with their roots if they are in the data. Words without iron-related meanings are presented if they have cognates in other Saami languages with iron-related meanings. Such non-iron-related words are not, however, included in the data. The column for the *terminus post quem* gives the earliest possible dating for the Saami words. The compound words and

derivatives can be as old as the youngest part of the word, but they could also be much younger. Derivatives can be as old as the simplex word or derivative suffix but could have been derived later. The dating of Finnic/Finnish is given very approximately in many cases, because it is not easy to determine from which Finnic or Finnish language stratum a word has been borrowed.

SaaS	SaaU	SaaP	SaaL	SaaN	SaaI	SaaSk	SaaK	SaaT	Origin of the word	Terminus post quem
<i>vietjere</i> 'hammer (n.)'	<i>viehtjiere</i>	<i>vähtjer</i>	<i>viehtjer</i>	( <i>bádje-</i> ) <i>veahčir</i>	<i>veeččir</i>	<i>vieččer</i>	<i>viebfšer</i>	<i>vieččeŕ</i>	Proto-Indo-Iranian	
<i>baste</i> 'pliers'	<i>bassta</i>	<i>pastastit</i>	<i>bassta</i>	<i>basttat</i>	<i>poostah</i>	<i>põöst</i>			Proto-Finno-Permian	
<i>sjijle</i> 'coal'	<i>sjijlla</i>	<i>sjilla</i>							Pre-Finnic	
<i>ruevtie</i> 'iron'	<i>ruövddie</i>	<i>ruov'tie</i>	<i>ruvdde</i>	<i>ruovdi</i>	<i>ryevdi</i>	<i>ru'vdd</i>	<i>rúŋŋ<sup>d</sup>t</i>	<i>rìŋŋ<sup>t</sup>e</i>	PG/NWG	500–1 BCE / 1–150 CE
<i>voesse</i> 'sack'	<i>vuassa</i> 'sack'	<i>vuos'sa</i> 'sack' <sup>1</sup>	<i>vuossa</i> 'sack'	<i>vuossu</i> 'bellows'	<i>vuássoo</i>	<i>vũõss<sup>A</sup>/</i> <i>vuõss</i> 'sack' <sup>2</sup>	<i>vũss</i> 'sack'	<i>vĩss</i> 'sack' <sup>3</sup>	PG/NWG	500–1 BCE / 1–150 CE
<i>aassjoe</i> 'furnace'			<i>ássjo</i>	<i>ássu</i> 'glowing wood embers on a hearth'					PSc	200–500 CE
<i>praedtie</i> 'glowing coal'	<i>práddie</i>	<i>kraat'tie</i>	<i>rádde</i>	<i>ráddi</i>	<i>ráddi</i>	<i>rä'dd</i>			PSc	200–500 CE
<i>smærjoe</i> 'smithy'									PSc	200–500 CE
<i>staelie</i> 'steel'	<i>stállie</i>	<i>stálle</i>	<i>stálle</i>	<i>stállli</i>	<i>stääli</i>	<i>stää'll</i>			PSc	200–500 CE
			<i>stádde</i> 'anvil'	<i>stáddi</i>					PSc	200–500 CE
			<i>stádda</i> 'anvil'						PSc	200–500 CE
<i>smirre</i> 'smith'	<i>smidda</i>								PSc/Common Scandinavian or <i>smirredh</i> also ← PG	200–500 CE / 550– 800 CE
<i>smirredh</i> 'forge (v.)'				<i>álvi</i> 'furnace'					PSc/ON	200–800 / 800–1250 CE
		<i>smirrjo</i> 'smithy'	<i>smirjjo</i> (-goahte)						Transition between PSc and ON / ? ON	~500–800 CE / 800– 1250 CE
		<i>smirrjo</i> 'smith'	<i>smirjjo</i> <i>smirjijt</i> 'forge (v.)' <i>smirjár</i> 'smith'						Transition between PSc and ON / ? ON	~500–800 CE / 800– 1250 CE

1. Lehtiranta (2001 [1989] s.v. \*võsse).

2. Itkonen (1958: 796) / Lehtiranta (2001 s.v. \*võsse).

3. SaaK and SaaT by Itkonen (1958: 796).

SaaS	SaaU	SaaP	SaaL	SaaN	SaaI	SaaSk	SaaK	SaaT	Origin of the word	Terminus post quem
				<i>bádji</i> 'forge (n.)'	<i>páájá</i>				Fi	? (after 400 CE)
				<i>dáhkut</i> 'forge (v.)'		<i>tääkkad</i>	<i>tāgke<sup>δ</sup></i>	<i>tāgka<sup>d</sup></i>	Fi	? (after 400 CE)
				<i>dearpat</i> 'forge (v.)'	<i>terppâđ</i>	<i>ṛǣǣṛpṛqr</i> 'cut (wood)' <sup>4</sup>	<i>tiēr</i> 'pe <sup>δ</sup> 'cut; chop down'		Fi	? (after 400 CE)
				<i>doanggat</i> 'pliers'	<i>toongih</i>				Fi	? (after 400 CE)
			<i>hilla</i> 'coal'	<i>hilla</i>	<i>illâ</i>	<i>ill</i>	<i>ἰλλ(α) / ἔλλ</i>	<i>ἰλλ(α)</i>	Fi	? (after 400 CE)
				<i>rávdi</i> 'smith'	<i>rävdee</i> <i>rävdijáššad</i> 'forge (v.)'	<i>rau'ddi</i> <i>rau'ddjōōššad</i> 'forge (v.)'			Fi	? (after 400 CE)
						<i>ka'll'jed</i> 'forge (v.)' <i>ka'll'jeei</i> 'iron forger'			Fi/Karelian	? (after 400 CE)
						<i>miōhh</i> 'furnace'			Russian	1700s
						<i>stälē</i> 'steel'			Russian	recent
							<i>stäl(ē)</i> 'steel'		Russian/SaaSk	recent
						<i>ce'pc</i> 'pliers'			Derivative (← <i>ce'pcced</i> )	?
<i>baeljie-stahke</i> 'bellows'									Derivative (← <i>baeljestidh</i> ← **baeljie ← Fi <i>palje</i> / PG/PSc *balgiz)	1200–1500 CE / 500–1 BCE / 200–500 CE
				<i>ruovde-bázahus</i> 'iron slag'					Compound with a derivative as a second component (← <i>bázahit</i> ← <i>báhcit</i> )	?
						<i>rau'ddipõrtt</i> 'forge (n.)'			Compound (both parts ← Fi)	after 400 CE
					<i>terppâm-vuáláás</i> 'anvil'				Compound (younger part ← Fi <i>tärppiä</i> )	after 400 CE
<i>ruevtie-skaarhte</i> 'iron slag'	<i>skárttie</i> 'in-crustation; crust; bad reindeer pasture covered with frozen snow'	<i>skártta</i> 'in-crustation; crust; bad reindeer pasture covered with frozen snow'	<i>skárta</i> 'crust; snuff; thin ice on the ground'	<i>skártti</i> 'crust'					Compound (younger part ← PSc *skarda)	after 200–500 CE

4. SaaSk and SaaK by Itkonen (1958: 590) and Lagercrantz (1939: 918).