

EARLY FINNIC–BALTIC CONTACTS AS EVIDENCED BY ARCHAEOLOGICAL AND LINGUISTIC DATA

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Abstract. Long-lasting and intense contacts between Finnic and Baltic tribes resulted in the linguistic and material intertwining of the cultures of these two groups, which belong to two different language families. This article concentrates on some interesting connections between both cultures, while attempting to explain and illustrate language contacts using the archaeological record. First, some semantically connected groups of Baltic loanwords in Proto-Finnic will be analysed in order to establish their time and place of borrowing. Next, the Late Bronze Age contacts will be shown to have been the most intensive. The borrowing of the Finnic name *Kalev/Kaleva* from Baltic *kalvis/kalējs* ‘smith’, which first was argued in my earlier paper written in Estonian (Lang 2012), is among the evidence for the intensity of these contacts. This is followed by a discussion of bronze work and the casting of bronze rings by these smiths or *kalevs*, and ends with an examination of the use of these rings as offerings and for taxation.

Keywords: archaeology and language, Finnic–Baltic contacts, Bronze Age, bronze rings as bronze stores and their use as offerings and for taxation

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1. Introduction

As contacts with Proto-Baltic have played a central role in the formation of Proto-Finnic, the demonstration of such contacts in space and time must be considered essential for any theory of ethnogenesis of the Proto-Finnic peoples. These contacts could not have been only short meetings here and there, they had to be intense and long-lasting as well as involve mixed settlements, as suggested by linguistic evidence (e.g., Ariste 1956: 12, Moora 1956: 60, Carpelan 1999: 265, Vaba 2011: 756). For this reason, earlier research into ethnogenesis has paid much attention to Finnic–Baltic contacts placing the beginning of these in the Late Neolithic. According to this theory, the bearers of the Corded Ware culture, who migrated to the East Baltic from somewhere in central Europe, belonged to the ancestors of the Proto-Balts, who came to live

in the areas inhabited by the Proto-Finns. North of the Daugava River, the Proto-Balts, being smaller in number, were later assimilated by Finno-Ugrians; south of the Daugava, the Proto-Baltic language dominated. This process was presumably associated with intense relations and a mixed population (bilingualism) of the representatives of two language families that left strong traces in Proto-Finnic (e.g., Moora 1935, 1956, Jaanits et al. 1982, Salo 1984, Carpelan 1999).

Modern interpretations of the formation of Proto-Finnic place this process in the Bronze Age, characterising it as a migration from the Volga River region to the Baltic Sea.¹ There have been different opinions regarding the exact mechanisms of this migration, the time frames involved, and migration routes (e.g., Kallio 2006, Häkkinen 2009, Parpola 2012); the probable contacts with the Balts have also been treated differently. As to more recent interpretations,² Asko Parpola (2012: 133 ff.), for instance, has proposed that a Proto-Baltic-speaking population, which descended from the people of the local Corded Ware culture, inhabited what are today Estonia and coastal Finland until the Early Iron Age and were later assimilated by invading Finno-Ugrians. According to him, the Proto-Baltic substratum on the shores of the Baltic Sea was the source of the large number of Baltic loanwords connected especially with agriculture and animal husbandry in the Finnic languages. This hypothesis goes back to older theories, which considered the Baltic–Finnic impact zone as having been in the East Baltic and Finland since the Corded Ware, but differs from these by suggesting the Balts survived in that region until such a late period. It does not take into account, however, the absence of Baltic toponymy in Estonia and Finland. Santeri Junttila (2012: 260), on the other hand, places the area of Baltic and Finnic contacts “somewhere between Estonia in the west and the surroundings of Moscow in the east, a zone with evidence of Uralic settlement in the north and Baltic on the south side”. He dates the beginning of these contacts from the “very initial phase of Proto-Finnic”, when this language was still relatively uniform (Junttila 2012: 265).

Taking into consideration the latest theories in historical linguistics, I recently presented an archaeologically possible scenario (Lang 2015), according to which the Finno-Ugrians – ancestors of the Proto-

1 Separation of Proto-Finnic from Proto-Saamic recently has been dated to the 1st millennium BC also by Terhi Honkola (2016: 43 ff., figure 5) in her quantitative analysis of the Uralic languages.

2 For a summary of early theories in this field, see Junttila 2012: 262 ff., 2015.

Finns – started to move westward from the region of the Volga and Oka Rivers at the end of the 2nd millennium BC. They obviously did this in several waves through the so-called Southwestern Passage of Contacts, i.e., via the upper streams of the Dnieper and Dvina (Daugava) Rivers. Of these waves, the most noteworthy was that, which brought with it fortified settlements with bronze casting activities, bronze axes of the Akozino-Mälar type, the first early *tarand* graves, certain styles of pottery with striated and textile-impressed surfaces, etc. As the majority of these occurrences can be localised in the regions where archaeological cultures, characterised by the archaeologists as either Finno-Ugrian or Baltic, met each other, one can suppose that either the representatives of both language families were taking part in this large-scale but stepwise migration or that the Finno-Ugrians moved through the lands inhabited by the Baltic-speaking population. In both cases, intense mutual contacts took place, with mixed communities and bilingualism having been very likely, particularly in the context of the fortified settlements in the Daugava Valley and east of it (Figure 1).

Intense contacts and even mixed habitation led to a linguistic and material intertwining of the cultures of these communities belonging to two different language families. In this article, I will concentrate on some interesting connections between the Proto-Finnic and Proto-Baltic cultures, in an attempt to explain and illustrate language contacts by way of the archaeological record. First, some groups of loanwords will be characterised in order to establish the time and place of borrowing. Next, the Late Bronze Age contacts will be analysed, including the derivation of the Finnic name *Kalev/Kaleva* from the Baltic word *kalvis/kalējs* ‘smith’, which first was argued in my earlier paper written in Estonian (Lang 2012). This topic will lead to a discussion of bronze work and the casting of bronze rings by these smiths or *kalevs* and ends with an examination of the use of such rings as offerings and for taxation.

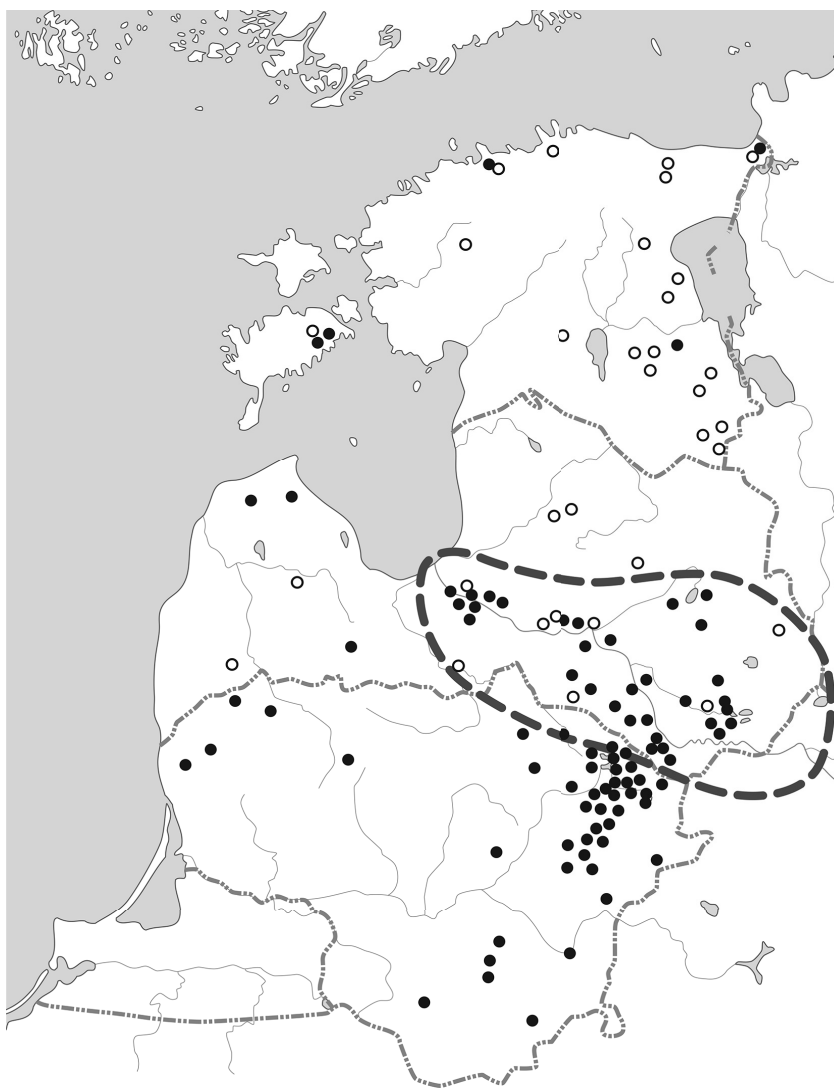


Figure 1. Distribution of fortified settlements (filled circles) and other hilltop sites (empty circles) of the Late Bronze and Pre-Roman Iron Ages in the eastern Baltic region. The main area of most intensive contacts between the Baltic and Proto-Finnic communities is marked with a dashed line.

2. Baltic–Finnic contacts between the Volga and Daugava Rivers

It is impossible, of course, to localise and date the borrowing of every single Baltic word into Proto-Finnic down to a square kilometre and a century. When, however, one proceeds from the theory on the formation of Proto-Finnic mentioned above (Lang 2015) and takes into account archaeological evidence from the region and time period in question, it should be possible to make some suggestions regarding the time and area of borrowing for certain semantically connected groups of loans. In the following discussion, I will base my considerations on Junttila's (2012, 2015) grouping and argumentation, which is more recent and more critical towards many earlier opinions.

One of the earliest groups of Baltic loanwords is obviously that connected with *hunting and fishing*. There is nothing new in this statement but, at the same time, there is no need to date these words to the Stone Age (suggested already in the time of V. Thomsen and E. N. Setälä, see e.g., Moora 1956: 59), as in the mid-Volga and Oka region both the Finno-Ugrian- and Baltic-speaking communities subsisted mainly from hunting and fishing until the end of the Bronze Age, i.e., the beginning of the 1st millennium BC, and these modes of sustenance preserved their relatively high importance even later. This also holds true for the entire East European forest belt up to the East Baltic and Finland. Coastal Estonia forms an important exception, as one can talk about direct evidence of field cultivation there due to the existence of fossil fields already from the Middle Bronze Age (e.g., Lang 2016). Nothing like this has been found thus far anywhere else in the eastern Baltic region, although indirect evidence (osteology, palynology) suggests that both (slash-and-burn) agriculture and stock rearing were known and practised already since the 4nd and 3rd millennia BC (Kriiska 2003).

While the upper chronological border for the borrowing of hunting-fishing terminology is around the turn of the 2nd and 1st millennia BC, the dating of the beginning of this borrowing is more complicated. There is some reason to think that the contacts between the Finno-Ugrians and Indo-Europeans started not in the sphere of the East Baltic and the Finnish Corded Ware culture (see Häkkinen 2009) but in the area and context of the Fatyanovo culture in the middle and second half of the 3rd millennium BC (see more in Lang 2015). The Balto-Slavic and Proto-Baltic stages must be more recent than this period, but exactly how much more recent is a problem to be solved by historical

linguists. Nevertheless, the Proto-Baltic language, which is reflected in the hunting-fishing loans in Proto-Finnic, had to exist in the late 2nd millennium BC at the latest.

Looking now closer at these loanwords referring to hunting and fishing, one can conclude that they mostly refer to the hunting and fishing in inland forests and bodies of water; sea fishing and seal hunting are entirely absent. According to Junttila (2012: 268 ff.), the “relatively clear” Baltic loans are as follows: Finnish *siula* ‘side rope of a seine, side fence of a reindeer enclosure’, *tuulas* ‘tool for spear-fishing with a light’, *sampi* ‘sturgeon’, Estonian/Finnish *aas/ansa* ‘type of bird trap’, *tõke/toe* ‘fish weir’ (Livonian *tõgõz*), *hirv/hirvi* ‘elk, deer’ (Livonian. *i’rš*), *tarvas* ‘aurochs’, *tuur/tuura* ‘ice pick’, *lõhi/lohi* ‘salmon’, *angerjas/ankerias* ‘eel’ (Livonian *aṅgõrz*), Livonian *vägāli* ‘burbot’, Vepsian *hähk* ‘mink’, South Estonian *kähr* ‘European badger’, and Estonian *vāhi* ‘crab’ (Livonian *vē’jõz*). In this list, even if we add the so-called dubious etymologies by Junttila, only ‘eel’ and ‘salmon’ refer to a more westward region of contacts where the rivers already had a connection with the Baltic Sea; these fish were absent in more eastward and continental regions, like the Volga and Oka region, for instance. This means that these words must be a degree more recent, originating from a period when the migrating Finno-Ugrians had reached the regions inhabited by the Balts who were familiar with these fish. Eel and salmon bones are very rare in the archaeological record, however, and therefore there are only a few findings thus far dating from the Stone Age.³ At the same time, some eel bones have been found in the Late Bronze Age fortified settlement Ratyunki in northwestern Belarus, in the upper streams of the Daugava River (Egorejčenko 2006: 49), and some salmon bones are known from the Ridala fortified settlement on the island of Saaremaa (Lembi Lõugas – pers. comm.).

The next group of loans is connected with **agriculture and stock rearing**: Estonian/Finnish *tara/tarha* ‘garden, enclosure’, *kubu/kupo* ‘wisp (of hay)’, *kulu/kulo* ‘forest fire, unmown hay’, *vagu/vako* ‘furrow’, *seeme/siemen* ‘seed’, *vakk/vakka* ‘type of wooden vessel with a cap, cereal gauge’, *talgud/talkoot* ‘bee, work party’, *hernes/herne* ‘pea’, *puder/puuro* ‘porridge’, *voon/vuona* and *vuohi* ‘lamb, kid, goat’, *rõõsk/rieska* ‘fresh (milk, bread)’, *oinas* ‘ram’, *vill/villa* ‘wool’, *hani/hanhi*, ‘goose’, *luht/luhta* ‘flood meadow’, *hein/heinä* ‘hay’, *rõhuma/rouhia*

3 For example, eel bones are reported from the Stone Age settlement sites around Lake Ladoga (Haggrén et al. 2015: 24) and from the western Estonian coast (Kaseküla; see Kriiska et al. 1998: 38).

‘to bruise, mill’, Estonian *kõblas* ‘hoe’, Finnish *siikanen* ‘(barley) awn’, *paimen* ‘herd’ (Livonian *paint*), *suova* ‘haystack’, southeastern Estonian *pahr* ‘boar’, and several others. By adding some dubious etymologies, like *ale/halme* ‘swidden being cultivated’, *huhta* ‘burnt swidden’, and *ädal/ätelä* ‘aftergrass’, Junttila (2012: 275) has already suggested that at least some loans in this list refer to primitive slash and burn agriculture, while none of the etymologies indicate more developed field cultivation. All loanwords in Finnic referring to fields and ards are of Germanic origin. This is supported by archaeological evidence, as the earliest fossil fields in northern Estonia from the Middle Bronze Age onwards have their closest parallels in Scandinavia (Gotland). Thus, the Baltic loans indicate the initial and earlier phase in agriculture and stock rearing and should be dated from the period before the Finnic *landnam* in what is today coastal Estonia, which is the region where the invaders encountered more advanced agriculturalists.

The inclusion of *hani/hanhi* ‘goose’ in this early group seems doubtful. Geese were not domesticated in southern Europe before the 1st millennium BC. In this case we are dealing with wild geese and so this word also must be excluded from the list of loans referring to domesticated animals. Some twenty years ago it was also thought that *hernes/herne* ‘pea’ was not cultivated this far north at such an early point in time (see e.g., Gustavsson 1997: 104). Today we know that at least in eastern Lithuania, the pea was cultivated in the transitional period from the Late Bronze Age to the Early Iron Age at the latest (Pollmann 2014). Therefore, it seems that the word *hernes* was not borrowed in the Volga region but instead in regions considerably further to the west.

Finally, there is a large share of so-called **unnecessary or luxury borrowings** that refer to the higher prestige of Proto-Baltic as well as to close neighbouring and mixed communities. Words from various fields of everyday life belong here, for instance: *sõsar/sisar* ‘sister’, *mõrsja/morsian* ‘bride’, *tütär/tytär* ‘daughter’, *hõim/heimo* ‘tribe’, *hammas* ‘tooth’, *kael/kaula* ‘neck’, *lõug/leuka* ‘chin, jaw’, *naba/napa* ‘navel’, *lepp/leppä* ‘alder’, *mets/metsä* ‘forest’, *harakas/harakka* ‘magpie’, *tühi/tyhjä* ‘empty’, *hein/heinä* ‘hay’, *hall/halla* ‘(hoar)frost’, and many others. Luxury loans should be dated, in all likelihood, from the last centuries before the ‘final separation’ of the Proto-Baltic and Proto-Finnic populations. This happened most likely when the main wave of Proto-Finns with fortified settlements reached coastal Estonia and coastal Finland (and even the central parts of eastern Sweden) in around 800 BC. The contacts with southern neighbours did not cease

completely after that. Additionally, as evidenced by a number of examples, the Finnic communities of the fortified settlements in the north developed their own foreign contacts (with Scandinavia, Central Europe, and the Volga–Oka region), which led to the establishment of greater differences in their material culture. This is the period at which one can place the establishment and development of a common Finnic culture, including both material and other aspects. For example, it also has been suggested that the most ancient and most primitive *runo*-song styles originate exactly from that time and region, i.e., in northern and western Estonia in the Late Bronze and earliest Iron Ages (Rüütel 1998). According to this interpretation, thus, the most probable time period for borrowing numerous luxury loans from Baltic is the period of the East European and East Baltic fortified settlements **before** the establishment of Estonian-Finnish fortified settlements further north, i.e., ca. 1100/1000–800 BC. The most probable core area of borrowings covered the Daugava Valley in Latvia, extending perhaps also to northern Belarus and northeastern Lithuania.

One can conclude that there have been three main stages in the borrowing of Baltic words:

A – The initial stage in the mid-Volga and Oka regions up to the turn of the 2nd and 1st millennia BC where the Finno-Ugrian- and Baltic-speaking communities lived side by side. The majority of hunting-fishing (except ‘eel’ and ‘salmon’) and at least some agricultural words (except ‘pea’) belong to this period.

B – The migration period, which most likely lasted two or three centuries (with some later waves as well) and brought along fortified settlements as well as to some extent mixed communities. The main region of contacts during this migration was most likely the Daugava River Valley (Figure 1). This was the main period of borrowings, particularly where the majority of luxury (and perhaps agricultural) loans are concerned.

C – The period after the Finnic *landnam*, i.e., the separation and movement of some of the communities further north from the Daugava River around 800 BC and later. This movement put an end to the most intensive contacts with the Proto-Balts and initiated more independent cultural and linguistic developments in coastal regions of Estonia, southwestern Finland, and central Sweden. This did not mean the end of borrowings from the Balts, of course, but from that time onward, borrowing proceeded at a more steady pace. Beginning in the early 1st century, the West Baltic population on the southeastern coast of the

Baltic Sea became the main partner of the Finnic communities further north, as evidenced by archaeological material.

Next, I will attempt to characterise the Baltic–Finnic world of fortified settlements during the ‘Finnic migration period’ and afterwards.

3. The origin of the name *Kalev*

As already stated above, the fortified settlements were a common settlement type for both the Proto-Balts and Proto-Finns. The earliest sites were founded at the end of the 2nd millennium BC in what are today northwestern Belarus (Egorejčenko 2006) and northeastern Lithuania. Migrating Finno-Ugrians might have been a very good reason for the building of fortifications in this region. During the first quarter of the 1st millennium BC, fortified sites were also established along the Daugava River (and elsewhere in Latvia; e.g., Graudonis 1989, Vasks 1994) as well as further east, in the region of the Oka and Moscow Rivers. Beginning in 800 (or even 850) BC, fortified settlements also are found in coastal Estonia (Lang 2007), southwestern Finland (Luoto 1984), and eastern Sweden (Eriksson 2009). The sites in question were hilltop areas usually (but not always) defended with wooden palisades and ditches; these were the locations of larger communities (at least 30–50 but often considerably more individuals). Those communities subsisted from stock rearing as well as some amount of agriculture, hunting, and fishing; bronze casting was also an important activity. The remains of the latter have been discovered in all Estonian, Finnish, and Swedish sites in question as well as in many (but not in all) fortified sites in Latvia and Lithuania. The number and density of the sites with remains of bronze work decreases rapidly as one moves to the east from the East Baltic; though some traces of such activities have been discovered even at the Dyakovo hill fort on the Moscow River (Krenke 2011: fig. 52).

Thus, the sites in question can be characterised by a hill (or simply a higher place) with restricted access, a smithy for making bronze artefacts (particularly rings), and a group of people living there and engaging in bronze casting. For many reasons it can be thought that these people had obtained at least a different if not higher social position from the rest of their society living outside the fortified sites in open farms and hamlets.

In northeastern Lithuania, exactly in the region of fortified sites, numerous place names with stem *kal-*, from the verb *kalti* meaning ‘to forge, to hammer, to hew, to knock, etc.’, are known and the researchers refer to this area as the birthplace of metallurgy in Lithuania, which also influenced neighbouring areas (Luchtanas 1981: 16). The place for metallurgical works, the ‘smithy’, is in Lithuanian/Latvian *kalvė/kalve*, and the ‘smith’ – *kalvis/kalējs*, with that form also having been borrowed into Courland Livonian – *kaļāj* ‘smith’ (Viitso and Ernštreits 2012). It is already an old theory that the name of the Estonian/Finnish mythological being *Kalev/Kaleva* originates from Baltic *kalvis/kalējs*. According to August Annist (2005: 88 ff.), there are actually only two etymologies which can be considered for the word *kalev* among the many others proposed: one of these derives from the Baltic *kalvis* ‘smith’ and the other derives from the Finnic noun *kali* ‘strong, tough; wooden lever or cudgel’. The former theory was already presented by A. Ahlqvist and E. N. Setälä who explained that the supposed original Kalev-the-Smith obtained a meaning later of Kalev-the-Giant or Kalev-the-King; still later, the original meaning (smith) was forgotten while the name Kalev or Kalevipoeg (son of Kalev) came to refer to only a strong man or a giant. The other hypothesis states that the word *kalev* was derived from *kali* (also *kaļ* in Livonian, *kalikka* in Finnish and *kaljine* in Vepsian) in the same way as the Estonian word *tugev* ‘strong’ is derived from *tugi* ‘support, prop’ and the Estonian word *vägev* ‘mighty, powerful’ from *vägi* ‘might, power’ – that is, the source was a concrete concept *tugi*, *vägi*, or *kali* from which a more general and abstract *tugev*, *vägev*, and *kalev* were derived.

Of course, there have been and still are many other explanatory models but there is no space here to handle these properly (see more in Annist 2005: 88 ff.). In addition to these, Mikko Heikkilä (2012) has recently presented a new and interesting idea according to which the origin of *Kaleva* is the Proto-Scandinavian proto-form of the Old Norse sea-god giant Hlér (reconstructed in Proto-Germanic and Proto-Scandinavian as **χ^lewaz*). This borrowing is supposed, on linguistic grounds, to have occurred during the Roman Iron Age in southwestern Finland, from where it spread to Karelia with the western Finnish migration in the 7th and 8th centuries. Where Estonia is concerned, this term was borrowed either independently from Proto-Scandinavians in northern Estonia or from the other side of the Gulf of Finland in the Middle Iron Age (Heikkilä 2012). The former scenario – independent borrowing in the Roman Iron Age – seems to me unlikely because direct contacts

between northern Estonia and Scandinavia, as much as one can decide on the basis of archaeological material, were virtually absent during that period. The contacts across the Gulf of Finland in the Middle Iron Age were lively and there is, indeed, a clear Finnish impact in the 7th and 8th centuries in coastal Estonian material culture. But the latter was limited only to a narrow coastal zone and did not extend further inland. The interpretation of Heikkilä does not explain the controversy of why *Kaleva* is so narrowly spread in the area of initial borrowing and much more widely in Estonia and Karelia if it was borrowed in southwestern Finland and spread afterwards to the east and south. Neither does it explain why exactly the name of a sea-god giant was borrowed for a being who had almost nothing to do with seafaring and who did actually quite opposite things – cultivated fields, threw stones, built various objects (e.g., beds), left footprints behind, scythed hay, etc. Due to these reasons, the theory in question, as it stands now, seems questionable to me and therefore I turn back to the *kalvis* and *kali* theory.

Although *kalvis* and *kali* have been treated as two different hypotheses so far, they can easily complement each other, as well. The stem of *kali* is also connected with the words *kale* and *kalestama* ‘to harden, to indurate, to toughen, to steel’ and Finnish *kalita* ‘to beat or hammer coldly, to shape or sharpen a scythe blade by hammering it’ (Annist 2005: 92 f.). But these are already words that bring us close to smithery and the Baltic verb *kal/ti*.⁴ Additionally, Lithuanian *kalstas*, Latvian *kaļa*, and Livonian *kal* also mean a ‘supporting beam’ or ‘lever’, thereby being close to the meaning of Estonian *kali*.

In this way, in the Finnic semantic world, the words *kal/kali/kalikka* and *kaļāj/kalev/kalevine* have, on one hand, marked something characterised by strength and toughness (also as a strong and sturdy beam or lever) and, on the other hand, have referred to being a strong man and a smith. The concept of a smith unintentionally presupposes strength and toughness and in Estonian folklore, Kalev is seen embodying not only strength but sometimes also being a smith (Laugaste 1959: 278, Vaba

4 The origin of Finnish *kalita/kallita* is also derived from Russian *калить* ‘to make smth. (red-)hot, to burn, to steel iron’ (SSA, I: 288). It seems possible to the author that two words with the same stem but different meaning were borrowed from two different directions at different times: *kalita* (‘to sharpen coldly by hammering’), which is known only in southwestern Finland, can originate from an earlier Baltic loan (verb *kal/ti*), but Votian *kalittaa*, Karelian *kallita*, and Saamic *gal’lit*, *gal’lilit* meaning ‘working and steeling hot’ refer to the associated Russian word *калить*, which in turn is a derivation of the Indo-European stem *kal-* referring to fire and warmth.

2011: 756).⁵ It follows that *kalev*, much as the Lithuanian/Latvian *kalvis/kalējs*, could have originally meant a strong man and a smith who lived on a hill with restricted access (i.e. a fortified settlement with remains of bronze casting) together with his clan and retinue.

It must be stated that this explanation holds true only in the case that this borrowing happened in the Late Bronze Age and in connection with bronze casting in the Baltic-Finnic fortified settlements (most likely in the Daugava Valley). That is to say, the *kalevs* could only have been bronzesmiths. This is due to the fact that the Bronze Age fortified settlements offered the only conceivable environment in which Finnic people could live close to Baltic smiths (the *kalviai*) and borrow a word for labelling the (bronze) smiths in their own language. In the Early Iron Age, the Baltic smiths were already living far away from their Finnic colleagues and there were other possibilities to develop associated terminology around the old Uralic word *sepp* (originally ‘skilful, masterly, master’; later ‘smith’) (EES: 468). Iron ore was found in completely different environments, mostly in wetlands, and therefore the smithies for iron work were usually located not on hills but in lower areas.

There cannot be much doubt that both Baltic *kalviai* and Finnic *kalevs* – strong, mighty and wealthy smiths on the hillocks – formed the elite of the time. The source of their social and economic power was based on bronze work and trade. It has been quite universal that in the early days of metallurgy, a smith was simultaneously a chief (or at least in a position close to him) and a trader. Also, at least some chiefs were smiths, as acquiring raw materials and trading presumed the authority to maintain long distance relations and organise trips (across the sea). Supposedly, however, the word *kalev* in the Finnic world lost the meaning of a ‘smith’ rather soon after the abandonment of the fortified settlements in the mid-first millennium BC; yet, it apparently preserved the reference to the position of a chief, living on a hill and to strength. Still later, probably after prehistoric times when the Estonian nobility (*kalevs*) were physically eliminated, this name obtained more mythological content. In the Baltic world, the fortified settlements stayed in use much longer, up to the Roman Iron Age and more advanced iron production, and therefore the *kalviai* preserved their main meaning of ‘smith’.

5 It is true that being a smith is very seldom reflected in folklore, as mentioned already by Matthias Johann Eisen (1910). One should consider here, however, that more than 2,500 years have passed from the time when the *kalevs* cast the last items of bronze.

With the passage of time, the originally identical meanings diverged in two different directions:

Baltic *kalvis* = smith-the-chief → smith;

Finnic *kalev/kalevine* = smith-the-chief → chief → strong man, giant.

Why the Baltic *kalviai* did not become giants or gods is not very important in this regard. However, it is not certain at all that they did not, as there are references here and there in the literature to the god-the-smith Kalvis or Kalevias or Kalevelis; though there is also serious criticism of such ideas (Kello 1999, Annist 2005: 93). We leave this question for specialists to answer, although both linguistically and semantically it would be quite easy to connect the name Kalev to such a mythological god of the Balts. The question is, rather, who was first: either *kalvis*-the-smith or Kalvis/Kalevelis-the-godsmith? Archaeology is not able to answer this question.

4. The bronze rings of *kalevs*

As one of the important activities in Baltic–Finnic fortified settlements was bronze work, it is logical to expect some linguistic contacts also in that field. In this regard, the following words are of interest: Estonian *vahr/varu/varo/võru*⁶ ‘ring (neck-ring, bracelet), circle around smth.’, *vaha* ‘wax’, and *vask/vaski* ‘copper’ (earlier also used for ‘bronze’). The bronzesmiths first prepared an item (usually a ring) by coiling it from wax, then wound it in clay (making a mould around it), then burned the wax out of this mould, and finally poured molten bronze (copper + tin) into the hollow mould. After the bronze had cooled, the mould around the item was broken. *Võru* and *vaha* have been considered Baltic loans in Proto-Finnic (Vaba 2011) but the origin of *vask/vaski* has to be sought probably in the Iranian or Circassian languages (Viitso 2012: 195 f.). The relations between Proto-Finnic and Proto-Baltic (Indo-European) languages in the field of bronze

6 *Vahr* is spread only in southeastern Estonia and the linguistic islands of Leivu and Lutsi in Latvia (Figure 2); *varu/varo* is known more widely in southern Estonia (excluding SE Estonia; Figure 3), and in Votian; *võru* everywhere in Estonia, except its southeastern corner (Figure 4; Väike murdesõnastik). Most likely the phoneme *õ* in this word developed later than *a*; so, *vahr(u)*, *varu* and *varo* should be considered earlier than *võru*.

casting, with bronze rings as the main products of this process, are quite interesting. It is important to stress here that there are no metal names or other terminology concerning metallurgy that could have been borrowed from Baltic languages into Finnic (Vaba 2011: 753).

‘Wax’ is in Estonian/Finnish *vaha* (in Livonian *vāʔ*) and in Lithuanian/Latvian *vāškas/vaskas* (< Proto-Baltic **vakša*); ‘copper’ is, respectively, *vask/vaski* (Livonian *vašk*) and *varis/varš*. The etymology of *vahr/varu/võru*, however, is not very clear. According to Lembit Vaba (pers. comm. 10.06.2012), this Estonian–Votian–Izhorian stem has come from the Proto-Baltic stem **varža-* (> late Proto-Finnic **varhoi*) meaning ‘basket trap made of branches, basket of branches for keeping living fish in water, trap, beam for keeping smth. together (wall, jag, stack, etc.)’. All these meanings are semantically very far from the meaning of *võru* as a metal ring cast in the fortified settlements; rather, the semantics of **varža* might have been connected with such Estonian words as *võre* ‘barrier of interlaced bars’, *võra* ‘crown of a tree’, and even *varb* ‘bar, rod’, which also have been connected with the stem of *võru* (EES: 592, 617). In a paper from 2012, I presented the idea that Estonian–Votian *vahr/varu/varo* was borrowed from the Baltic word for copper, i.e., *vāris/varš* (> *varh*, *vahr*). There are many examples of using a word for a material to refer to an item made of this material (e.g., iron, diamond). The main weakness of this explanation stands in the questionable origin of the Finnic phoneme *-h* < **-š-*, as the reconstructed Proto-Baltic form **varja-s* does not contain *š* (Santeri Junttila pers. comm.). However, in this paper I also referred to another possibility, which is based on the Lithuanian verb *versti* (also *vartyti*) and the Latvian *vērst* meaning ‘to turn, turn around/over; to direct, enforce’ (Lang 2012: 883). One more word of interest in this connection is Lithuanian *veržti* (in Latvian both *vērst* and *vērzt*) – ‘to string, tighten, squeeze’; *veržeti* ‘to be coiled/winded; to press/squeeze’; *išveržti* ‘to wring out’; *veržlė* ‘screw nut’. The semantics of turning and pressing (also metaphorically) are reflected in both Lithuanian stems (being one word in Latvian), while both turning and pressing (and winding) are actions that are imaginable for casting bronze rings. The PIE reconstructions of *versti* and *veržti* are, respectively, **uert-* and **uerǵh-* (< **uer-*); the Balto-Slavic form of the latter should be **werž-* (Derksen 2015: s.v. *versti*, *veržti*; Fraenkel 1965: s.v. *versti*, *veržti*). When trying to reconstruct the plausible Proto-Finnic stem as a borrowing from this, one could think a word like **verh-* or **vār-*, which is already rather close to *varh/vahr* as known to us from southeastern Estonian.

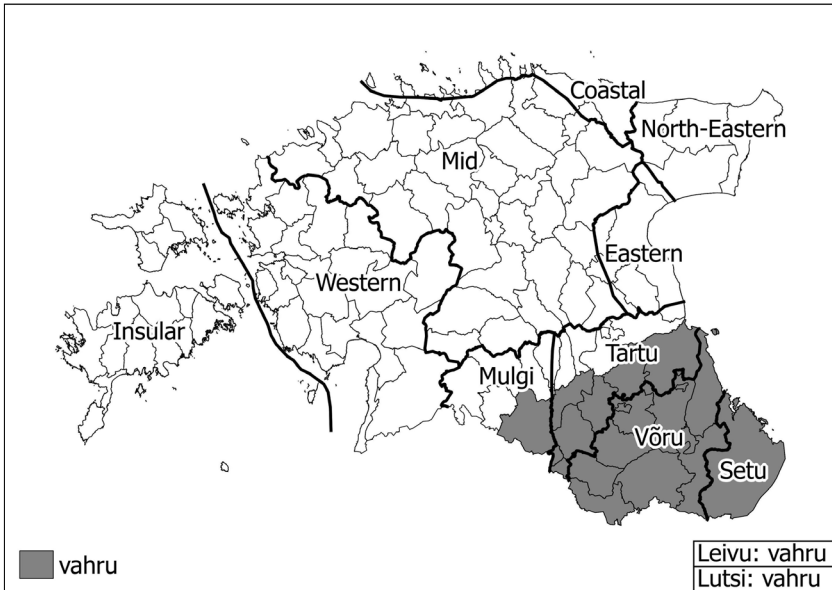


Figure 2. The spread of *vahru/vahr/varh* in Estonian dialects (VMS).

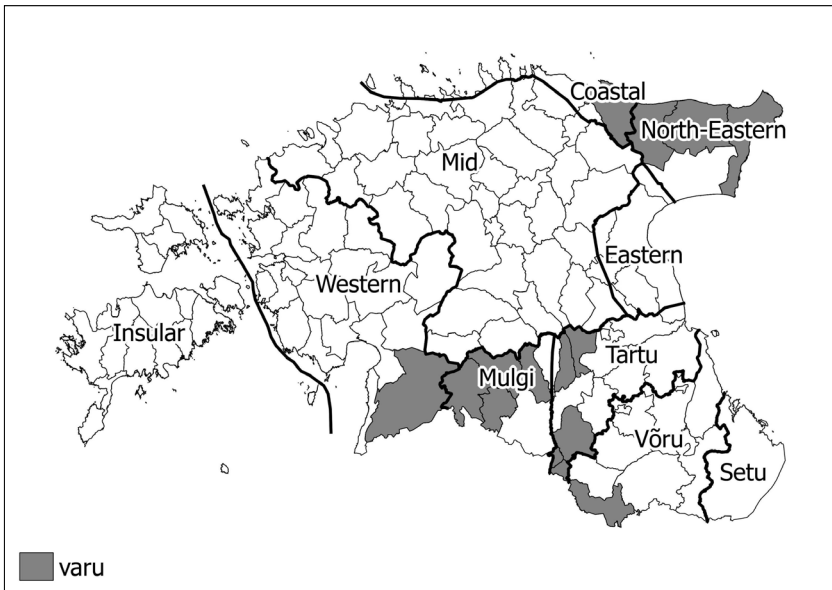


Figure 3. The spread of *varu/varo* in Estonian dialects (VMS).

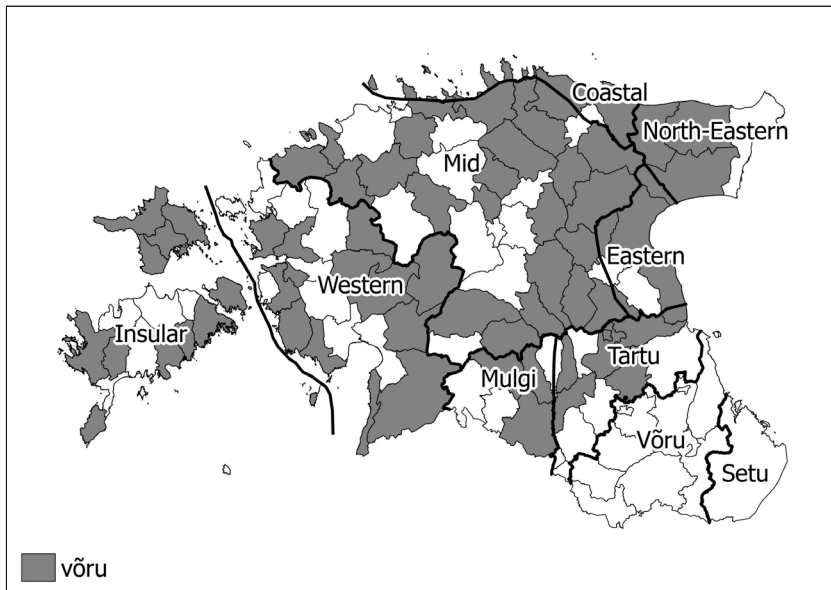


Figure 4. The spread of *võru/veru/voru* in Estonian dialects (VMS).

In the context of this treatment it is important to add that the old Indo-European stem **uer-* ‘turn, turn around, rotate’ has led to some other concepts as well. One of them is Lithuanian *varas* and Latvian *vara* meaning ‘power, obligation, force, violence, ruling’ (Fraenkel 1965: s.v. *varas*).⁷ *Vara* also has a similar meaning in Livonian and the Leivu dialect (Vaba 1977) as well as at least partially in Estonian in words like *vara* ‘store, property/wealth, ability/capability, force/power’ and *varu* ‘stockpile, store, supply, reserve’ (see e.g., Wiedemann 1893/1973). Both *varu* and *vara* come from one and the same stem and according to our interpretation (in Lang 2012 and here), can be connected with *varu/varo/võru/vahr* ‘ring’ at least for semantic reasons: in the Bronze Age, bronze rings were simultaneously both a store and wealth with both also a source of social power and capability. In Votian,

7 The other derivation of this stem is Lithuanian *varas*, which means ‘Stange zum Herstellen eines Zaunes; Gürtel, der den Holzzaun zusammenhält; Türangeln’ (*sqvara* – ‘Klammer, Querholz, das zwei Balken zusammenhält’) (Fraenkel 1965: s.v. *varas*). It might well be that this *varas* is the source of that Estonian/Finnish *vara*, which means a lengthwise groove underneath the upper beam in a house wall where the uppermost side of the lower beam goes in; and a tool for marking preliminary lines of such grooves on the beam, i.e., a mortise gauge or timber scribe.

the word *var/o* means both ‘ring’ and ‘store’ and *vara* has the same meaning as in Estonian. Although researchers have not succeeded in determining a reliable etymology for Baltic *varis/varš* ‘copper’, it seems plausible to me, on the grounds mentioned above, to look at this word in connection with *varas/vara* ‘power, force, etc.’) and *versti/vērst* ‘turn, turn around, rotate’).

It is true that Finnic *vara* and *varu* ‘store, property, etc.’ have been considered as loans from Proto-Germanic **warā-* ‘wares’ (e.g., EES: s.v. *vara*) and a certain impact from that direction is absolutely possible. Such close connections between three different languages, as suggested by archaeological evidence of these cultures, are understandable particularly (and perhaps only) in a Late Bronze Age context, where casting bronze rings and distributing them in trading networks (together with associated social relations) closely intertwined the Proto-Finnic, Proto-Baltic, and Proto-Germanic semantic worlds around the Baltic Sea. The social connotations of the words for bronze and rings (as stores of bronze) are also quite understandable: it was exactly this metal that made social differences real and visible for the first time in the history of the societies in question. One can be sure that bronze and bronze rings were a source of wealth, strength, and power for chiefs – not only for the *kalviai* and *kalevs* east of the Baltic Sea but also for the chiefs in many other regions of Europe.

The semantics of *varu/varo/võru/vahr* ‘ring’ and *varu/vara* ‘store, property, force, ability’ overlapped not only in the Bronze Age but also in much later times. There were various neck-rings and bracelets in the Viking and post-Viking era, reported from different parts of northern Europe, that were standardised on the basis of the weight of silver they contained. Such rings were, for instance, bracelets of the Hilberno type, neck-rings of the Perm type, the so-called ring-coins, the neck-rings with plate-shaped ends plaited from several wires, etc. (Hårdh 1996: 137 ff., Kilger 2007, Kruse 1988, Tönnissson 1962). As a parallel, one can also refer to the Russian word *grivna*, which simultaneously means both a ‘ring’ and ‘certain unit of weight’. The same can be said about Scandinavian *baugr*; both the *grivna* and *baugr* served as symbols of personal wealth and eminence (Kilger 2007). Birgitta Hårdh (1996: 137) has observed that rings have played the role of money in numerous economies, from the Old Kingdom of Egypt and the Phoenicians to the

Vikings.⁸ It is quite remarkable that from countless items of material culture it was exactly the rings that so often were chosen to contain a certain amount of metal, whether copper, bronze, silver, or gold. The East Baltic is not an exception here; it fits well with cross-cultural developments that refer to the wider and universal symbolism of a ring and circle.

However, it is not impossible that there has also been another word for denoting a ring in at least some Finnic languages. In Livonian, where words like *võru/varo/vahr* are unknown, there is the word *kol* which likewise means a ‘ring, circle, necklace’. This word also has a counterpart in (mostly) western Estonian dialects: *koli*, *kolju*, and *kollo* meaning both a ‘metal ring’ and, more generally, something that is round and protruding (Figure 5; VMS: 260, Wiedemann 1893/1973: 331). In Votian, *koli* means a ‘band or tie twisted from branches’ (mostly round in shape) (Vadja keele sõnaraamat, 2: 207 f.). This stem seems to be a very old borrowing from Proto-Indo-European **k^uolH(es)* ‘circle, wheel’ (Proto-Slavic **kolo* / **koles-*) from the verbal root **k^uel-* ‘to move round, to turn about’ (ESSJa: s.v. *kolo*). It is suggested that **k^uol(H)es* was an older word for ‘wheel’ in Indo-European languages, replaced later by **roto-* / **rotā-* which was used for a more advanced type of wheel (ibid.). PIE **k^uolH-* ‘neck’ is also seen in Latin *collum* ‘neck’ and *collare* ‘necklace, band or chain for the neck’ (cf. English *collar*) as well as Baltic *kaklas* (**k^uo-k^ulo-*) ‘neck’, which is the source of Estonian–Finnish *kael/kaula* ‘neck’ (OED: s.v. *collar*, ESSJa: s.v. *kolo*). In Old Prussian, there was the word *kelan* ‘wheel’ (*maluna-kelan* – ‘millwheel’), but otherwise this stem seems to be absent (lost) in the modern Baltic languages, which use the term *ratas/rats* for denoting a wheel (ESSJa: s.v. *kolo*). The word is widely known in Slavonic (Polish *koło*, Czech *kolo*, Old-Slavonic *коло*, Macedonian *коло*, Slovenian *koló*, etc.) and also in the Nordic languages (Old Norse *hvel*, Old Swedish *hiughl*) (ibid.).

8 One can compare East Baltic Late Bronze Age rings with thousands of bronze rings/bars of the *Ösenringe* type in Western and Central Europe from the Early Bronze Age (e.g., Moucha 2005) – their main task was also to hold a certain amount of bronze, which was used as an equivalent in trade.

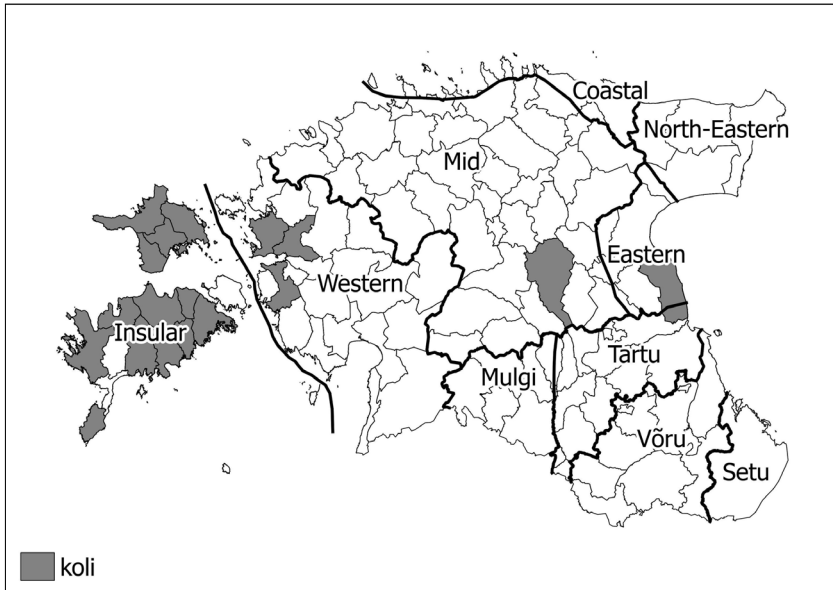


Figure 5. The spread of *koli/kolju/kollo* in Estonian dialects (VMS).

Thus, one can suppose that we are dealing here with an old Finnic word the original form of which could have been **koljo* (Karl Pajusalu – pers. comm.) with the original meaning ‘circle, wheel’. When and where it was borrowed is a complicated and specific question to be solved in further studies; one can only suppose here that it most likely was borrowed already within the time of the first contacts between western Finno-Ugrians and Proto-Indo-Europeans. The meaning of a neck-ring was probably obtained later, while, if we are still talking about the Neolithic, it initially could not have been a metal ring but something else around the neck. However, this word also has other (later) derivatives and side meanings, both in Indo-European and Finnic languages, to which I will return below.

5. Rings as offerings and tax; rings as a piece of (cultivated) land

As mentioned already above, bronze rings were the main item cast by the bronzesmiths in the previously discussed fortified settlements during the Late Bronze Age. In order to cast bronze rings, raw materials (mostly broken artefacts) were acquired from various locations, though

mostly from Scandinavia.⁹ These rings were also traded elsewhere in order to obtain other wares or services in exchange. In Scandinavia, bronze rings (including those cast in the East Baltic) had two fates: a portion of these was recast as other useful items (including as other types of rings), the rest, as evidenced by countless hoards, were buried underground or underwater. These hoards could be either intended for storing metal for later use or for sacred purposes, i.e., intended for the gods; the latter clearly dominates (Moucha 2005: 35 ff. and references therein; Innerhofer 1997). As theorised based on the conditions in which the neck-rings and female figurines with neck-rings have been found, these can be regarded as attributes of a goddess, or taken more widely, as symbols of a fertility cult.

After the Bronze Age, the casting of bronze rings seems to have ended in the East Baltic fortified settlements. After that, particularly since the beginning of our era, rings became an important item both among grave goods and, more important in this connection, offerings. One can probably see in this occurrence the influence from Northern, Western, and Central Europe where offerings of rings had been distributed already in the Bronze Age. Actually, one recent find proves that the custom of depositing bronze rings in a wetland environment spread also in northern Estonia already in the Late Bronze Age: several pieces of rings of exactly the same type as those cast in the aforementioned fortified settlements were found at Kumna near Keila (Paavel in print). In western Finland, the earliest rings left as offerings in wetlands date to the Early Iron Age (Salo 1984: 191). It is clear that rings in the Finnic world obtained additional, that is, cultic and ritual meaning starting already from the Late Bronze Age. This is proven not only by the custom of depositing rings in the ground or water but also by the extraordinarily large dimensions and weight of many rings, particularly those dated to the Roman Iron Age. From the Migration Period onwards, the number of rings in hoards increased considerably (Oras 2015).

These archaeological developments are associated with some interesting linguistic circumstances. In Votian dialects, there are words like *võra*, *võrha*, *võrka*, *võro*, *võrho*, and *verho*, which all mean ‘offering, sacrifice, oblation’. The similarity with Estonian *võru* is noteworthy, particularly if one keeps in mind that rings as offerings are an archaeological reality. It is important to add that the Estonian word *võru* also

9 There are several hoards interpreted as collections of scrap metal known in the East Baltic, which contain broken artefacts imported from Scandinavia (e.g., Tehumardi on the island of Saaremaa and Staldzene in western Latvia; for more see Lang 2007: 117 ff.).

has had the additional meaning of ‘obligation, necessity, deficiency, emergency, pressure’. In the dictionary of Wiedemann, one can find the following example: “*olen kõik saksa võrud täis teinud*”, which might have meant, according to Wiedemann, ‘I have completed all the obligations (e.g., duties of a serf, Germ. *Leistungen*) for the manor’. Here the word *võru* is clearly in the position of ‘obligation, tax’ – exactly as the Finnish word *vero* ‘tax, bride’s gift, food’ (but see also *verotyö* ‘duties of a serf’). For the Saami, *værro* was both ‘tax’ and ‘offering’, and in Votian, *vero/võro* has meant ‘tax’ and ‘offer’ but also ‘a piece of cultivated land’ (SSA: s.v. *vero*; SKES: s.v. *vero*; Vadja keele sõnaraamat: s.v. *võro*). As for the latter, there are the following examples in the dictionary of the Votian language: “*izäll õli kahyõ võrua maa*” – ‘father had two plots of land’ (‘soul’s acres’)¹⁰ and “*ühš võro õli viisi dessattinaa*” – ‘one plot of land (‘soul’s acre’) was five dessiatines’¹¹. From these two Votian examples one can extrapolate that in the Estonian example above the word *võru* also could have meant a plot of cultivated land instead of an obligation – in that case, this sentence had to mean ‘I have sown all the fields of the manor’. Considering the exact meaning of other Estonian words in this sentence, the latter interpretation is even more logical and understandable than that of Wiedemann. However, they do not exclude each other if *võru* simultaneously meant both – a plot of land and the tax/obligation from it – exactly as *võro* in Votian.

However, there could also have been another line of linguistic developments. In the easternmost Finno-Ugrian languages one can encounter such words as *vər* in Mordvin and *βär/βer* in Mari, originally meaning ‘place, spot, locus’; this word has been regarded as one possible cognate of Finnish *vero* (SKES, VI: s.v. *vero*). As pointed out by Enn Ernits (2007), there is good reason to derive numerous Estonian place names with a component *vere* from that word, although linguistically it is impossible to conclude whether *vere* had any connection with *võru* (meaning ‘obligation’) or not. Nevertheless, Votian *võro* ‘plot of agricultural land’ is semantically – but evidently not linguistically – close to one other explanation for Estonian place names containing *vere*, i.e., that *vere* in these derives from the Russian terms *вервь* ‘village commune in historical Russia’ and *вервие* ‘plot of (arable) land measured with help of a cord’ (Kallasmaa 2007, Ernits 2007). As much as is known to me, there is no reference to a use of *võru* to mean a plot of arable land in

10 ‘Soul’s acre’ – a piece of land granted to a parish family, peasant’s allotment, plot of land in historical Russia.

11 One dessiatine (Russian measure) = 2.7 acres.

Estonian scientific literature concerning historical agriculture; perhaps it had disappeared from use already prior to medieval times.

We have seen, therefore, how the (neck-)ring (*võru/varo/vahr*) had obtained multiple meanings in Finnic languages referring, in addition to a decoration, also to wealth, power, obligation, offerings, taxation, and even a piece of cultivated land. It is of utmost interest here that the other Finnic word for a circle, wheel, and ring – **koljo* – involved at least part of these meanings as well. Estonian *kolk/kolgas*, Finnish *kolkka*, Livonian *Kūolka*, Votian *kolkka* (etc.) mean a piece of land, a corner, a district. According to Wiedemann (1893/1973: 332 f.), *kolu* meant a negative form in the landscape's surface and *põllukolu* was an uncultivated strip on the edge of a field, while *kolju* was more like a positive (protruding) form in the landscape. On the other hand, Votian *kolo* denotes an icon cupboard and *kolo nurkka* – a corner for the icon in a living room (cf. *võropaikka* ‘a place for making offerings’) (Vadja keele sõnaraamat: s.v. *kolo*, *võro*). In this way, Votian *võropaikka* and *kolo nurkka* both mean a sacred place (for offering and praying) defined through a ring, though the name of the ring comes from different sources.

It should be noted that Indo-European languages also associate the meaning of rings with some space and rituals. In many Slavonic languages, the stem **kolo* (~ **kolese*) has been used for denoting both a district and certain (in some cases war-) dances (ESSJa: s.v. *kolo*). In Old English, the word *ring* also had the additional meaning of a circular group of persons, a horizon, a place for prize fights and wrestling bouts, etc. (OED: *ring*). Most likely these connotations are related to the symbolism of the circle: that is, to surround and embrace something or somebody (land or people) for doing something (e.g., offering, praying, talking, dancing, etc.). I have not found indications that could associate **koljo* with wealth and power, however; this is, perhaps, telling us that this word is older and originates in times when wealth and power had not yet become very important in Finnic societies.

6. Conclusions

Much in this article relies on the hypothesis concerning the arrival of Proto-Finnic communities in what are today Latvia, Estonia, and southwestern Finland in the Late Bronze Age. Though a hypothesis, it still gives ground for building up some ideas about the nature and

general time frame of Baltic–Finnic contacts. In this paper an attempt has been made to go deeper in understanding these contacts from both linguistic and material culture perspectives. Archaeology and historical linguistics complement each other only in the conditions of correct chronology; that is, only if the linguistic contacts have been put on the right point in the time scale. Other hypotheses concerning the ethnogenesis of both the Proto-Finns and Proto-Balts will certainly supply us with further understanding of the nature of the contacts between these two peoples.

According to this treatment, Uralic–Indo-European contacts began in the region of the Volga and Oka Rivers in the late 3rd millennium BC. One can talk about West Uralic and Proto-Baltic linguistic contacts since the late 2nd millennium BC, perhaps, and the Baltic impact then mostly comprised vocabulary reflecting hunting–fishing, primitive farming, and probably also some other domains. The most intensive contacts took place during the so-called Finnic migration from the Volga region to the East Baltic, which proceeded through the areas inhabited by the eastern Balts and had to have lasted two or three centuries; at least in the Daugava Valley one has to expect there to have been mixed bilingual settlements. The majority of ‘luxury’ and agricultural loans should be dated to this period. Among others, the Finnic mythological name Kalev/Kaleva was most likely borrowed in the context of mixed communities in Baltic–Finnic fortified settlements; the source of this derivation was most likely Baltic *kalvis/kalējs* – a bronzesmith and chief at that time. After the end of the Bronze Age, the *kalevs* gradually lost the meaning of a smith but preserved the meaning of a chief and a strong man; still later, probably in historical times, it obtained additional meaning of a giant.

As one of the main activities of the *kalviai* and *kalevs* (the inhabitants of the fortified settlements) was bronze casting with the main product being bronze rings, there is an attempt made in this article to analyse the linguistic and cultural background of the rings. It is suggested that the main Estonian word for the ring – *võru/varu/vahr* – comes either from the Baltic name of copper (i.e., bronze) – *vāris/varš* – or, rather, the Proto-Baltic stem **werž-* (Lithuanian *versti/veržti*, Latvian *vērst* – ‘to turn, press’). As bronze and bronze rings (which were not ornaments but bars or stores of bronze) were the main source of wealth and power for the *kalevs*, the associated words also obtained social connotations referring to power (*vara*). In the Early Iron Age, when rings became important items to be deposited underground and underwater,

the word *võru* also obtained the meaning of an offering, which is well preserved in Votian. Additional meanings for this word possibly may be connected with the measuring and taxation of arable land, particularly in Votian, but some references are to be found also in Estonian. In this way, though originally borrowed from Proto-Baltic, *võru/varu/vahr* started to live ‘its own life’ in the Finnic semantic world obtaining new meanings stepwise in the sphere of social relations: wealth/ability/power, offering, measuring, and taxation.

The other Finnic word for rings (and wheels) has obviously been **koljo* (*koli/kolju/kollo*), which is older, borrowed from Proto-Indo-European **k^uol(H)es* ‘circle, wheel’, and is preserved only in Livonian and western Estonian dialects with the meaning ‘ring’ (Figure 5). This word also had additional meanings referring to a piece of land and sacredness but lacking indications of wealth and power. The similarities in semantics of *võru* and *koli* most likely originate in the wider and universal symbolism of rings; the dissimilarities probably arise from differences in chronology and social relations in which these words were used.

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Kokkuvõte. Valter Lang: Läänemeresoome–balti kontaktid arheoloogiliste ja keeleliste andmete alusel. Algläänemeresoome ja idapoolsete balti hõimude pikaaegsed ja tihedad kontaktid tõid kaasa nende kahe eri keelkonda kuuluva rühma materiaalse ja vaimse kultuuri (sh keele) läbipõimumise. Artikkel keskendub mõningatele huvipakkuvatele seostele mõlema rühma kultuuris, püüdes keelekontakte selgitada ja näitlikustada arheoloogilise andmestikuga. Kõigepealt käsitletakse mõnda balti laensõnade semantilist seotud rühma algläänemeresoome keeles eesmärgiga teha kindlaks nende laenamise aeg ja koht. Seejärel iseloomustatakse lähemalt kõige intensiivsemaid, nooremal pronksiajal aset leidnud kontakte, analüüsides sealhulgas võimalust tuletada läänemeresoome *Kalev/Kaleva* nime balti sõnast *kalvis/kalējs* tähendusega ‘sepp’, mida autor esmakordselt põhjendas ühes oma varasemas eestikeelses artiklis (Lang 2012). See teema viib lõpuks välja pronksi ja eriti pronksvõrude valmistamiseni nendesamade seppade või kalevite poolt ning nende võrude kasutamiseni ohverdamisel ja maksustamisel.

Märksõnad: arheoloogia ja keel, läänemeresoome–balti kontaktid, pronksiaeg, pronksvõrud pronksi varuna ja ohverdus- ning maksuvahendina

Kubbõvõttõks. Valter Lang: Vāldamiersūomlīzt–baltōd siḡmōd arheolōgij ja kīel tīetōkst pūoj pāl. Vāldamiersūomlīzt ja mōgōrpūolīzt baltōd sugūd pitkāāigalīzist ja sagdīzist siḡmist sugīz nānt kōd īzkīz kīelkub jagūd materiālīz ja vaimlīz kultūr (neiīz kīeld) lebbōpaļštīmi. Kēra kontsentrīerōb mōlmōd kultūrōd mingīz interesantōd siḡmōd pālō, kōļōs seļtō ja nāgṭōbōks tīedō arheolōgīlīzt tīetōks abkōks. Amājedsō sōbōd vaṅtōltōd baltōd kēļsti tāpīṅtōd sōnād mingīz semantīlīzt gruppō nānt tāpīṅtīmīz āiga ja kūōz vīzāks tīemīz pierāst. Sīetagān sōb traktōd amā intensīvōd, nūorīmīz brōnza aīgīz siḡmōd ilā, vaṅtlōs vōīmīz seļtō vāldamiersūomō nimmō *Kalev/Kaleva* baltō sōnāst *kalvis/kalējs* ‘siepā, kaļāj’, neiku autor um siedā ezmōks pūojtōn ēsti kīelsō (Lang 2012). Lopāndōksōks vīb se temāt brōnza ja īzkīz brōnza rīnkōd tagāmīz jūr nānt īz kaļājḡd pūold ja nānt rīnkōd kōlbatīmīz jūr uppōrtōmīz ja maksūd vōtāmīz jūs.