

VALTER LANG  
TARTU

## Stone Age cultural changes in our interpretations of ethnic history

---

### Introduction

Professor Riho Grünthal, today's jubilee celebrant, has devoted much of his research to the history of languages, including the development of Finnic languages. Therefore, the following historiographical glimpse into the interpretation of different archaeological cultures from the perspective of linguistic history is a fitting contribution to this collection and of interest to the jubilarian.

Since the times of Gustaf Kossinna and Vere Gordon Childe, archaeological cultures have always been associated with ethnic groups and their languages. This link has sometimes been considered direct, sometimes indirect and mediated, but in one way or another it has certainly existed in the minds of researchers. This is because the people who made and used certain things nevertheless belonged to a certain ethnic group and spoke a certain language. The point at which opinions tend to diverge more is usually the point at which *change* has to be interpreted – these include the change in material culture that one sees in archaeology, the change in people's genetic material that is revealed by samples of ancient DNA, and the change in language that is revealed by studying the history of languages. Each of these sciences has its own internal clock and chronology of change, and reconciling them into a coherent interpretation is never without problems. Since the data of aDNA always come from archaeological contexts, we are mostly dealing with a two-sided equation: archaeology and genetics on the one hand, and language history

on the other. It can be assumed that if the archaeological culture of a region changed, and with it the genetic composition of the people, then the language spoken there must have changed too, at least for the society associated with that archaeological and genetic material. However, the more distant the time, the more uncertain our knowledge, or even our assumptions, about the language in question become. However, if culture and genes behave differently at different scales of change, the framework for our possible interpretation is considerably expanded.

There seems to be a certain (perhaps temporary) consensus among archaeologists, linguists and geneticists that the ancestors of the Proto-Finnic people arrived in the Baltic Sea region in the late Bronze Age – early Iron Age, i.e., around the first millennium BC (e.g., Kallio 2006; J. Häkkinen 2009; Lang 2018; 2020; Saag et al. 2019; Nichols 2021; Grünthal et al. 2022). Keeping that in mind, I will focus here on earlier, that is Stone Age, cultural changes. There has been no shortage of scholars who have placed the immigration of Proto-Finnic or Finno-Ugric peoples into the Eastern Baltic and Finland in the Stone Age. This was based on the theoretical premise that the invasion of a new people (meaning also a new language) must have brought about a significant change in the culture, settlement, economy, and physical appearance (or genetic composition) of the people. Such truly large-scale and comprehensive changes have taken place in the Baltic Sea region in the distant past, in the Stone Age, and *all of them* have been considered from the point of view of ethnic change, including the arrival of Finno-Ugric peoples.

In the following overview, I will try to answer three major questions. First, how and by what arguments has one or another Stone Age cultural change in Estonia and Finland been associated with Finno-Ugric ethnogenesis? Second, why could these cultural changes not have been a reflection of Finno-Ugric immigration? And third, what, after all, is this heritage of Stone Age cultures that has survived and still lives on in us, the linguistically Finnic people?

## Kunda culture

According to a long-standing tradition, the oldest order of the material culture of what is today Estonia is called the Kunda culture, dated between 9000 and 5200 BC (Kriiska et al. 2020: 49). The earliest settlement in Finland also came from the Kunda culture areas, but as much as a couple hundred years after the beginning of the Kunda culture (Halinen 2015: 25). The Kunda culture was carried by the first people to arrive from the southern regions of Europe

after the end of the Ice Age. They were the first settlers and thus certainly immigrants, and our question is whether they may have spoken some form of Finno-Ugric or Uralic.

The idea that they really could have was probably first suggested by Richard Indreko (1948).<sup>1</sup> He argued that the stone, bone, and horn artefacts of the Kunda culture were typologically evolved from those of European Late Palaeolithic (Madeleine period) cultures. The carriers of these cultures moved northwards over time, following the reindeer population, until they occupied the post-glacial landscapes of both the East Baltic and Scandinavia, and from there, shifted eastwards up to the Yenisei River on the other side of the Ural Mountains. The earliest, Mesolithic settlements in the East Baltic had thus come from the west and moved eastwards.

An important role in Indreko's theory was to emphasise the continuity of the transition from the Mesolithic to the Neolithic, characterised by the introduction of ceramics. According to the perceptions of the time, the first ceramics in these vast areas from the Baltic Sea to western Siberia were Comb-Marked potteries. The researcher stresses that the appearance of ceramics was merely a cultural innovation, while the basic types of stoneware and bone and horn objects remained the same. The settlement pattern and the means of subsistence also remained the same. Consequently, there would be no reason to speak of a mass immigration of new people to the East Baltic in connection with the advent of pottery.

According to the opinion of many archaeologists and linguists at the time, it was Finno-Ugric that was spoken within the Combed Ware culture. Since the Kunda culture was, in Indreko's view, the direct predecessor of the latter, the Finno-Ugrians must have lived in Estonia (and neighbouring areas) as early as the Mesolithic, whereas before that they lived in the more southern latitudes. Later migrations were unable to alter the earlier Finno-Ugric base (Indreko 1948).

Indreko's theory did not spread more widely in the international scientific community at the time, and did not enter the so-called professional circulation. The main reason for that was the ethnic paradigms prevailing in Estonia and Finland at the time. In Estonia, this paradigm argued that Finno-Ugric tribes arrived in the East Baltic from the east with the Combed Ware; i.e., in the Neolithic and not before (EREA 1956). In Finland, however, it was widely accepted that the ancestors of the Finns arrived much later, only after the turn of our era (e.g., Kivikoski 1961).

---

1. In 2001, Indreko's 1948 essay was republished in the journal *Trames*, together with commentary articles by archaeologists, geneticists, and linguists.

It was not until some forty years later that this theoretical approach was further developed by Milton G. Núñez (Nunez 1987). Still later, it became the starting point for the “Ice Age” (or “continuity”) theory, which was promoted with particular vigour by the Finnish phonologist Kalevi Wiik (2002; 2004).

According to the model proposed by Núñez, the Uralic-speaking tribes inhabited the areas of Eastern Europe that also linguists have considered their ancestral homeland (west of the Ural Mountains, north of the Caspian and Black Seas) at the end of the Ice Age. There, the European and Asian racial elements may have mixed, as they were compressed into this glacial refugium. On the heels of retreating continental ice, there was a gradual northward and westward shift until the Baltic and Finland were settled, while some groups (the future Samoyeds and Ob-Ugrians) moved eastwards from the Urals. By the mid-Mesolithic, Finno-Ugric was spoken everywhere from the Baltic to the Ural Mountains. Even though their location in a vast area and contact with non-Finno-Ugrian groups had begun to produce linguistic differences, the common basis of language and culture, the similar nature of settlement pattern and economy, excellent waterways, marriage networks and trade had maintained mutual intercourse and linguistic intelligibility for long millennia (Nunez 1987: 13–14, figs 1, 2, 8).

The main difference between the models of Indreko and Núñez is that the latter sees the Proto-Uralic population as coming from an Eastern European refugium, rather than from Western Europe, where Indreko originally placed it. The direction of movement was then east to west for Núñez and west to east for Indreko. The models overlapped in that both saw cultural and linguistic continuity from the time of the first settlement, which could not be interrupted by later minor migrations.

In the wake of Núñez, the Finno-Ugric (Uralic) origins of the post-glacial settlement of Northern and North-Eastern Europe have been proposed by other scholars. The theories differ mainly in the initial region of migration. In addition to western Central Europe and southern Eastern Europe, intermediate areas in Central Europe, especially in the Dnieper and Danube regions, have been proposed (Dolukhanov 1998: 15, fig. 2).



The theory of the Finno-Ugric origins of the Kunda culture is based on the alleged continuity of artefactual culture in the transition from the Mesolithic to the Neolithic, its association with linguistic continuity, and the view that Neolithic settlement was Finno-Ugric. In its theoretical orientation, it is a culture-historical approach in which the temporal and spatial continuity of types of artefacts – as well as dwellings, settlement systems, burials,

economy, etc. – is thought to reflect a similar continuity of the groups of people who made and used them, including the continuity of their ethnic belonging. This approach is not necessarily wrong in itself when considering shorter stretches of time. For longer periods, so many other factors are usually added to alter the development and interrelationships that the inter-connected continuity between the original cultural and linguistic groups becomes less and less likely. For example, it has been calculated that the probability of the survival of the language of the first settlers in Finland to the present day is no higher than 4% (J. Häkkinen 2010: 28), and the same can be estimated for Estonia.

That the people of the Kunda culture arrived here from somewhere in southernmost Europe is not in any doubt in the light of palaeogeographical, let alone archaeological, research. From where else, then? The imported flint from Pulli, our earliest settlement site, comes predominantly from either southern Lithuania or Belarus, and that is probably where the first people came from. However, a small part of the flint was brought from the east, from the area of the upper Volga River, and perhaps some of the people also came from there (Kriiska et al. 2020: 53). Thus, it is very likely that our land was settled primarily by groups coming from the south (in the longer view – from the south-west), who may have been joined by people from the (south-)east. Unfortunately, we have no genetic material from such an early period.

So, the cultural origins of the earliest inhabitants in Estonia and Finland are more or less clear, but the question is what language(s) they spoke. The short and honest answer is that we do not know. Linguistic historians are fairly certain that (Proto-)Uralic does not go that far back in time. Different authors have different estimates of its age, but the majority of these estimates fall between about 4000 and 2000 BC. There is also a conviction, based, e.g., on the grammatical structure of the language, that the original home of Proto-Uralic was in the east, either on this or the other side of the Ural Mountains, and not in the west (see, e.g., Nichols 2021; Grünthal et al. 2022). This original home must also have been located in a relatively circumscribed area, rather than covering most of the entire periglacial belt that stretched along the edge of the retreating continental ice sheet from Western Europe to North-Eastern Europe.

In conclusion, the Kunda culture could not have been the beginning of Finno-Ugric settlement in what is now Estonia and Finland. The archaeological material of this cultural sequence originally points to westernmost Europe, although it may have contained some eastern components. However, linguistic history does not allow us to speak of Finno-Ugric (or Proto-Uralic) languages ten or eleven thousand years ago, especially so far west.

---

## Narva culture

While in Indreko's time the oldest ceramic style in North-Eastern Europe was considered to be Combed Ware, excavations in the post-war years revealed an earlier style, which came to be called Narva Ware and the corresponding period – Narva culture (Jaanimäe 1956). The spread of this culture covered the whole of the East Baltic, extending somewhat further east. The earliest Finnish ceramics are different from the Narva type and are known as Sperrings. In Estonia today, the Narva culture is dated to 5200–3900 BC, but in Latvia and especially Lithuania it is seen as extending to much later times, in some places even to the Bronze Age (Kriiska et al. 2020: 49, 76 ff., fig. 17; Girininkas 2013: 63 ff.).

In the ethnogenesis of Finno-Ugric peoples, the first introduction of ceramics has never been seen as a reflection of a mass migration, but rather as a cultural innovation. However, migrations on a limited scale are not excluded. For example, according to Christian Carpelan (1999: 253–256), the skill of pottery-making shifted as the expansion of settlement resulting from the growing numbers of pottery-literate people occupied new lands. So it was still a case of new people arriving, not from far away but from somewhere in the neighbourhood. In the context of Finland, Carpelan believes that they may have spoken a language of Uralic origin similar to that of earlier inhabitants, although enriched with new vocabulary, perhaps borrowed from other languages (e.g., the word *pata* 'pot'). On the basis of Estonian materials, Aivar Kriiska has suggested that this was an innovation that did not involve significant migration. Presumably, this innovation spread to our region from neighbouring areas to the east and south-east (Kriiska et al. 2020: 77–78).

At the same time, the Narva culture has been considered very important in the ethnogenesis of the Baltic peoples. At about the same time that there was growing talk in Estonia and Finland of the Finno-Ugricity of the Kunda culture, Lithuanian archaeologist Algirdas Girininkas (1994) argued that the first humans in the East Baltic were Proto-Balts. The argument was based on the following reasoning: (a) the Narva culture, i.e., the oldest pottery-making culture of hunter-fisher-gatherers, grew out of the base of the Kunda culture (the same was claimed by some scholars to the north), (b) its continuous development covered the whole Neolithic and the whole area later inhabited by the Balts, (c) no population change is observed in the whole long period of the Narva culture, and (d) in the middle of the Bronze Age, i.e., about three thousand years ago, the Narva culture was transformed into the Striated Pottery culture, which all scholars consider to belong to the Baltic tribes. The Corded Ware culture, which spread in the Late Neolithic, is thought to have been merely an additional Indo-European branch, enriching, but not

replacing, the local and indigenous Baltic culture. On the other hand, the typical Combed Ware culture, which had arrived earlier in the north-eastern part of the Narva culture, brought the ancestors of the Finno-Ugric peoples and soon transformed the areas north of the Daugava River into Finno-Ugric ones (Girininkas 1994: 241–250).

The Narva culture has also been considered Indo-European by Pavel Dolukhanov (1998: 17), although for quite different reasons. According to him, the East Baltic was settled by Proto-Uralic peoples from the early Mesolithic onwards, but since the Narva culture finds show contact with southern (Anatolian) farmers who, according to Colin Renfrew's (1987) theory, were Indo-European, the Indo-Europeans may also have been the carriers of the Narva culture. Some researchers have further suggested that the Narva culture population was rather multi-ethnic and that early Baltic language forms were widespread at least in the southern parts of the Narva culture (Loze 1985).

According to these theories, the population of the Narva culture spoke some kind of early Indo-European or Proto-Baltic language, regardless of whether they were immigrants or local people. These claims have probably only come from archaeologists, and I have not come across any linguistic attempts to substantiate them.



From the foregoing, one can draw textbook examples of how the same archaeological find material can lead to completely different conclusions about the ethnicity of the people who made the artefacts, often depending on the ethnicity of the researcher. All these claims are based on the alleged continuity of material culture, and we will encounter them again below. The likelihood that the first inhabitants in the East Baltic, or the people of the Narva culture, spoke Indo-European or Baltic languages is unfortunately no greater than that they would have spoken Finno-Ugric languages. The linguistic history simply does not allow either of these linguistic communities to be placed in this region so early. This does not mean, of course, that genes from those distant times and people cannot be present in us, both in the Baltic Finns and the Balts.

An ancient DNA analysis of Narva culture burials (fifth millennium BC) showed that they were hunter-fishers with a Western European background, with no evidence in their genome of contact with early agriculturalists from South-Eastern Europe. This also disproves Dolukhanov's idea that the Narva culture had direct links with South-Eastern Europe, and moreover, it is more or less ruled out that these early agriculturalists there were Indo-European (Mittnik et al. 2018; Haak et al. 2015).<sup>2</sup>

---

2. See more on the subject: Lang 2018: 82–83 and 2020: 97 with references therein.

Thus, the Narva culture can be thought to have most likely been a development from the local basis, where the ability to make pottery adopted from the east became an important cultural innovation. Significant human migrations cannot be identified from the available material. We still have to accept the fact that we do not know what language or languages was/were spoken by the people of that time.

## Combed Ware culture

The Combed Ware culture is divided chronologically into two phases, the Typical and the Late Combed Ware. The first of these is dated in Estonia to 3900–3700 BC and the second to 3700–1750 BC (Kriiska et al. 2020: 104), with Finland dating to 3900–3500 and 3750–3250 BC, respectively (Halinen 2015: 58). The ceramics and other artefacts characteristic of the culture spread over a fairly large area from northern Finland to northern Lithuania and from the eastern coast of the Baltic Sea to eastern Karelia and Lake Ilmen. It is the appearance of Typical Combed Ware in the East Baltic and Finland that has been associated in Estonia throughout time with large-scale immigration from the east and is believed to have been caused by the arrival of Finno-Ugric peoples. The idea was originally proposed by German, Swedish, and Finnish archaeologists in the early decades of the 20th century, but was developed into a systematic Finno-Ugric ethnogenesis theory in the works of Harri Moora in the 1930s and especially in the 1950s (Moora 1935; 1956; 1958; K. Häkkinen 1996: 73; Lang 2018: 35 ff.; 2020: 50 ff.).

This theory is based on the assertion that the Typical Combed Ware culture is the earliest archaeological culture, which, spreading out from the area between Lake Ladoga and the Valdai highlands, covered the area later inhabited by Finnic peoples. The birth of this pottery style in the Ladoga-Valdai region was strongly influenced by impacts from neighbouring areas to the east (Lyalovo type pottery). It was claimed that archaeological finds show how in the area of the Combed Ware, “...the development of culture through the millennia leads on, without any significant interruption, to the culture of historical times, which we already know for certain belonged to the Finno-Ugric peoples” (Moora 1935: 28). When they reached the East Baltic, the makers of the Combed Ware would have met the inhabitants of the Kunda culture, whose (to us unknown Proto-European) language became a substrate for Proto-Finnic (Moora 1956: 53–54; Ariste 1977). Later, the tribes of the Corded Ware culture of Indo-European origin, which arrived from the south, are said to have changed the ethnic composition of the population considerably



in the southernmost East Baltic (formation of Proto-Baltic), but to have been suppressed and assimilated in the north by the Proto-Finnic population.

In the second half of the 20th century, the theory of linking Combed Ware with early Finno-Ugrians achieved an almost exclusive and dogmatic status in Estonia and elsewhere in the then Soviet Union, but not in Finland. There, such ideas began to gain wider currency only in the 1980s, but were soon overshadowed by the “Ice Age” or “radical continuity” theory, which saw Finno-Ugric peoples as the first inhabitants of our lands (SVEJ 1984; PP 1999).



At this point, it must be said that the results of the ancient DNA research from the burials of the Combed Ware culture clearly show that this was indeed a new population arriving in Estonia at that time. In contrast to the former population, the genetic material of these people was similar to that of the eastern hunter-gatherers, thus indicating that the new people arrived from the east (Saag et al. 2017). This had all along been pointed out not only by the archaeological record, but also by anthropological measurements, which identified Mongoloid features on the respective skulls (Mark 1970). Thus, it is certain that the Combed Ware culture does indeed reflect the immigration of a certain number of people from the east. The question is what language(s) they spoke.

The claim that the language of the Combed Ware people could not have been Finno-Ugric is primarily supported by linguistic-historical arguments. In short, they argue that the Proto-Uralic language remained together, i.e., spoken as a single language, until the second half of the third millennium BC. And that this common language was spoken somewhere further east, either on this or the other side of the Urals (see Kallio 2006; J. Häkkinen 2009; Nichols 2021; Grünthal et al. 2022). However, the actual distribution of Typical Combed Ware in Estonia and Finland predates the first divisions of Proto-Uralic by at least a millennium and a half, or even two millennia, which is too much for any statistical error in linguistic-historical or even archaeological dating.

However, counter-arguments also come from archaeology. At the end of the Neolithic, both Estonia and Finland, and much of Latvia too, faced a very serious demographic and cultural crisis. This makes it impossible today to believe Moora’s words quoted above about how “...the development of culture through the millennia leads on, without any significant interruption, to the culture of historical times...”. It is precisely this very significant interruption that hit Estonia, together with its immediate neighbours, in the early second millennium BC, and which was not survived by any of the most important

cultural phenomena known from the Late Neolithic (see Lang 2018: 197–199; 2020: 248–250; Lavento 2015: 125–126; Saipio 2023: 24–26).

It should be added here that at the time of the creation of the Combed Ware theory, in fact even up to the 1980s, neither of the two counter-arguments was known, or rather cared much about. Although Eemil Nestor Setälä's century-old linguistic-historical dating did not differ much from today's,<sup>3</sup> it was believed in the 1950s, at least in Estonia, that it is possible to shift the age of Proto-Uralic back in time and "better align" it with archaeological dating (Moor 1956: 58). Since the beginning of the Combed Ware was dated to the mid-third millennium BC, the gaps were also much smaller, seeming easily "surmountable".

A major cultural break at the transition to the Bronze Age "did not occur" in Moor's day, however, because of an attempt to emphasise the continuity of local development. There was little find material for any period at that time, and it was therefore difficult to detect possible periods poor or rich in finds. This situation did not change before radiocarbon dates began to be calibrated to solar years at the end of the 20th century.

Thus, the Combed Ware theory of the arrival of the Finno-Ugrians in the Baltic Sea region does not correspond to the scientific facts of today. The latter do confirm that the people who made that pottery came from the east, but they most likely did not speak Proto-Finnic, but something else. This was because Proto-Uralic had not yet begun to branch out and both Western Uralic and Proto-Finnic simply did not exist. It is also not possible, on the basis of present knowledge, to speak of continuity of cultural development through the second millennium BC.

## Corded Ware (Boat Axe) culture

Corded Ware culture is a phenomenon that the vast majority of scholars have throughout time considered to be the invasion of a warlike people of Indo-European origin. Opinions have sometimes differed only as to whether this immigration was massive or confined to a few smaller (more elite, more warlike) groups, and whether the newcomers spoke a relatively unbranched (north-western) Proto-Indo-European or some form of Proto-Baltic (or Proto-Balto-Slavic). In Estonia, Corded Ware culture is dated between 2800

---

3. Setälä (1926) dated the disintegration of Proto-Finno-Ugric into the Ugric and Finnic branches to around 2500 BC.

and 2000 BC, while in many other areas it tends to end a few hundred years earlier (Kriiska et al. 2020: 104). In archaeological terms, this was a relatively short-lived but still important phenomenon.

In the present context, where we are focusing primarily on the ethnogenesis of Finnic people, there would be no reason to discuss this culture, since – as mentioned – it has been predominantly considered an Indo-European phenomenon. However, the idea has recently been put forward that the Corded Ware culture belonged to ... Finno-Ugrians. The author of the idea is Carlos Quiles, a researcher at the University of Extremadura (Spain). While it is generally thought that the Corded Ware culture developed in eastern Central Europe as a result of the expansion of the Yamna culture (ca 3000 BC), Quiles (2018a–d) argues that this was not the case because the leading Y-chromosome haplogroups are different between the two groups: R1b for the Yamna men and R1a (Z645) for the Corded Ware; differences are also found in the archaeological material and subsistence. And since it is the Yamna culture that is considered to be the origin of late Proto-Indo-European, and since this expansion is seen as reflecting a further branching of this language, Quiles believes that the Corded Ware people must have spoken a different language. Quiles points to the fact that the so-called pure Corded Ware cultural groups, which were not influenced by, for example, the Bell Beaker tradition of Central and Western Europe (i.e., the Baltic Corded Ware, Fatyanovo, Balanovo), had spread from the Baltic Sea to the Ural Mountains in the same area where the Finno-Ugric peoples are later known. And most importantly, after the cultural phase of Corded Ware, the genetic material of the inhabitants of this area has remained more or less the same. True, Y-haplogroup N3a has been added, but this cannot prove the ethnic change of the entire population. Quiles therefore argues that it is logical to assume that it was the spread of the Corded Ware tradition that dispersed the Finno-Ugric speakers to their later homelands. (Quiles 2018a–d.)

The main drawback of the theory described is that it links too directly and rigidly the genes and languages: one haplogroup – one nation (language) and since genes did not change, the language could not change. Yet Quiles himself gives the example of the population of north-west Russia, which exchanged its former Finno-Ugric language for Russian while retaining most of its genetic heritage. And there are other examples of whole peoples elsewhere who have changed their languages. Yet there is a point, which has to be addressed: the spread of the Corded Ware unified the genetic picture over very large areas. This makes it quite difficult to trace later migrations within the area on the basis of genetics alone. The solution would be to take archaeological material into account, which Quiles does not possess.

So, reading Quiles, we do not know what language(s) the Corded Ware people really spoke. The arguments he puts forward do not in any way rule out the possibility that it could still be of Indo-European origin. All the more so since the area in which the Corded Ware cultures spread was home not only to the ancestors of the Finno-Ugric speakers, but also to the Baltic peoples. The whole of Finno-Ugric linguistics would protest if the Uralic or Finno-Ugric ancestral homeland were to be placed in what is now southern Poland or eastern Germany, where the Corded Ware originated (the so-called A-horizon). Hypothetically, the language of the Corded Ware people – if we follow Quiles and exclude Indo-European origins – may also have been unknown to us, since quite certainly languages other than Indo-European and Finno-Ugric were spoken in Europe at the time, too. With this in mind, it is not inconceivable that it was the Corded Ware – and not the Combed Ware – people who spoke this “Palaeo- or Proto-European” language, which is believed to be recognised in the Proto-Finnic substrate and which belongs neither to the Uralic nor to the Indo-European language family (Saarikivi 2004). In the past, this substrate stratum was thought to have descended from the language of the Kunda people (Ariste 1977), but this can hardly go back that far in time.

However, this is in no way to take a position on the language of the Corded Ware people, but to accept that we may not know. What is more important here is the conclusion that, in at least one area of their wide distribution, the former Corded Ware makers had to change their earlier language to Finno-Ugric. This could not have been in the East Baltic or Finland, where the last cultures of the Neolithic came to an end in a demographic crisis (see above and Lang 2018: 196–199; 2020: 248–250; Saipio 2023: 24–26). Rather, it was further east, somewhere between the mid-Volga and the Urals, probably in the Fatyanovo-Balanovo culture area. It is from there that this new language must have been passed on, certainly through migrations as well as through the language change of the local population. Quiles’ view that the N3a haplogroup and the so-called Siberian component of the genome spread so little westwards in the early Iron Age that it cannot explain the population and language change is not valid. It was not only N3a men who migrated, but also R1a men, as two burials from the Kunda *tarand* cemetery show: judging by the strontium isotope, both were first-generation immigrants, born in a region outside Estonia and Finland, but one had haplogroup N3a3’5, the other R1a1c (Saag et al. 2019; Oras et al. 2016).

## Summary: Stone Age heritage

Archaeological and archaeogenetic evidence suggests that at least in connection with the formation of the Kunda, Combed Ware, and Corded Ware cultures, the arrival of new people and new language(s) has taken place. However, as we have seen, none of these major cultural changes can be attributed to the arrival and persistence of Finno-Ugric peoples in the countries bordering the Baltic Sea. Since the demographic and cultural setback at the turn of the Stone Age and Bronze Age has been briefly mentioned above, we must ask whether there is anything at all that we, Finnic people who arrived later, have preserved from the local Stone Age? What was the cultural, linguistic and genetic legacy (if any) that could have been passed on from the Stone Age to subsequent ages? Although the setback may have been detrimental to the transmission of any inheritance, the disruption was not so total as to preclude the question.

Certainly, the Stone Age legacy includes part of our, i.e., modern Baltic Finnic, DNA. Of course, it is not possible to measure with a precision scale how much or what part of it comes from the people of the Kunda and Narva cultures or from the makers of Combed and Corded Wares. There is no reason to suppose that the newcomers have physically eliminated all the previous people, but rather that they have mixed with them. Thus, we carry within us a small part of both Western and Eastern European hunter-gatherers, as well as of the steppe peoples and warlike tribes of Central Europe, and even, through them, of the early Anatolian farmers. It all dates back to the Stone Age, although we have got only part of it from the shores of the Baltic Sea.

The question is more complicated when it comes to cultural heritage. Neolithic ceramic styles disappear completely in Estonia at the beginning of the second millennium BC. In south-western Finland, a new type of pottery, that of Kiukainen, developed as a synthesis of Combed and Corded Wares, but it soon faded. At the same time, a pottery style of its own, the so-called Lubāna type, also spread in eastern Latvia, but even this did not have a long life.<sup>4</sup> The Neolithic tradition of stoneware remained with the late shaft-hole axes. Their abundance from Finland to northern Latvia is not great and their distribution is sparse, but they do show the persistence of a certain number of people in their areas and cultural continuity. It is difficult to make any generalisations about flint, quartz, bone, and horn objects today, as we have very little or almost no knowledge of the artefacts from the sites of the second

---

4. For more on these ceramics, see Lang 2018: 127–130 and 2020: 158–162 and the references given there.

millennium BC. Our knowledge of cemeteries and burials is also poor, but it would seem that, for the most part and at least for the time being, the old, Stone Age traditions of post-mortem treatment of people have survived.

The language or languages spoken here at the end of the Stone Age have disappeared into eternity, but not without a trace. The substrate discovered in the Finnic languages speaks of an earlier layer of language. In particular, the words related to the unique flora, fauna, and landscape are thought to originate from previous local languages (Ariste 1981; Saarikivi 2004). Unfortunately, it is not known to which archaeological cultural stage(s) they are directly related.

So, the millennia of the Stone Age did not disappear without a trace. Even today, we still carry the genes of those distant times and use some words from then in our everyday language.

## References

- Ariste, Paul. 1977. Mida on säilinud Pulli ürgsete asukate keelest? *Eesti Loodus* 10. 660–661.
- Ariste, Paul. 1981. *Keelekontaktid: Eesti keele kontakte teiste keeltega* (Ema-keele Seltsi Toimetised 14). Tallinn: Valgus.
- Carpelan, Christian. 1999. Käännekohtia Suomen esihistoriassa aikavälillä 5100...1000 eKr. In Fogelberg, Paul (ed.), *Pohjan poluilla: Suomalais-ten juuret nykytutkimuksen mukaan* (Bidrag till kännedom av Finlands natur och folk 153), 249–280. Helsinki: Societas Scientiarum Fennica.
- Dolukhanov, Pavel M. 1998. The most ancient North Europeans: Consensus in sight? In Julku, Kyösti & Wiik, Kalevi (eds.), *The roots of peoples and languages of Northern Eurasia I: Turku 30.5.–1.6.1997*, 9–27. Turku: Societas Historiae Fenno-Ugricae.
- EREA 1956 = Moora, Harri (ed.). 1956. *Eesti rahva etnilisest ajaloost: Artiklite kogumik*. Tallinn: Eesti Riiklik Kirjastus.
- Girininkas, Algirdas. 1994. *Baltų kultūros ištakos*. Vilnius: Savastis.
- Girininkas, Algirdas. 2013. *Ankstyvasis metalų laikotarpis* (Lietuvos archeologija, II tomas). Klaipėda: Klaipėdos universiteto leidykla.
- Grünthal, Riho & Heyd, Volker & Holopainen, Sampsa & Janhunen, Juha A. & Khanina, Olesya & Miestamo, Matti & Nichols, Johanna & Saarikivi, Janne & Sinnemäki, Kaius. 2022. Drastic demographic events triggered the Uralic spread. *Diachronica* 39(4). 490–524.  
<<https://doi.org/10.1075/dia.20038.gru>>
- Haak, Wolfgang et al. 2015. Massive immigration from the steppe was a source for Indo-European languages in Europe. *Nature* 522. 207–211.
- Häkkinen, Jaakko. 2009. Kantauralin ajoitus ja paikannus: Perustelut punta-rissa. *Suomalais-Ugrilaisen Seuran Aikakauskirja* 92. 9–56.  
<<https://doi.org/10.33340/susa.82020>>

- Häkkinen, Jaakko. 2010. Jatkuvuusperustelut ja saamelaisen kielen leviäminen. *Muinaistutkija* 2010(1). 19–36. <[http://www.sarks.fi/mt/pdf/2010\\_1.pdf](http://www.sarks.fi/mt/pdf/2010_1.pdf)>
- Häkkinen, Kaisa. 1996. *Suomalaisten esihistoria kielitieteen valossa* (Tietoliipas 147). Helsinki: Suomalaisen Kirjallisuuden Seura.
- Halinen, Petri. 2015. Kivikausi. In Haggrén, Georg et al. (eds.), *Muinaisuu-temme jäljet: Suomen esi- ja varhaishistoria kivikaudelta keskiajalle*, 19–121. Helsinki: Gaudeamus.
- Indreko, Richard. 1948. Origin and area of settlement of the Fenno-Ugrian peoples. In *Science in exile* (Publications of the Scientific Quarterly “Scholar” 1), 3–24. Heidelberg.
- Indreko, Richard. 2001. Origin and area of settlement of the Fenno-Ugrian peoples. *Trames* 2001(1). 7–25.
- Jaanits, Lembit. 1956. Eesti NSV territooriumi kiviaja elanike päritolust. In EREA, 120–146.
- Kallio, Petri. 2006. Suomen kantakielten absoluuttista kronologiaa. *Virittäjä* 110. 2–25. <<https://journal.fi/virittaja/article/view/40454>>
- Kivikoski, Ella. 1961. *Suomen esihistoria* (Suomen historia I). Helsinki: WSOY.
- Kriiska, Aivar & Lang, Valter & Mäesalu, Ain & Tvauri, Andres & Valk, Heiki. 2020. *Eesti esiaeg* (Eesti ajalugu I). Tartu: Tartu Ülikooli ajaloo ja arheoloogia instituut.
- Lang, Valter. 2018. *Läänemeresoome tulemised* (Muinasaja teadus 28). Tartu: Tartu Ülikooli Kirjastus.
- Lang, Valter. 2020. *Homo fennicus: Itämerensuomalaisten etnohistoria* (Kirjo-kansi 276). Helsinki: Suomalaisen Kirjallisuuden Seura.
- Lavento, Mika. 2015. Pronssi- ja varhaismetallikausi. In Haggrén, Georg et al. (eds.), *Muinaisuu-temme jäljet: Suomen esi- ja varhaishistoria kivikau- delta keskiajalle*, 125–212. Helsinki: Gaudeamus.
- Loze 1985 = Лозе, И. А. 1985. Нарвская культура и ее роль в этногенезе народов Восточной Прибалтики. In Волкайтэ-Куликаускиенэ, Ре- гина (ed.), *Проблемы этногенеза и этнической истории балтов: Сборник статей*, 11–20. Вильнюс: Моклас.
- Mark, Karin. 1970. *Zur Herkunft der finnisch-ugrischen Völker vom Stand- punkt der Anthropologie*. Tallinn: Eesti Raamat.
- Mittnik, Alissa et al. 2018. The genetic prehistory of the Baltic Sea region. *Nature Communications* 9. 442.
- Moora, Harri. 1935. Kiviaeg. In Kruus, Hans (ed.), *Eesti ajalugu I: Esiajalugu ja muistne vabadusvõitlus*, 10–62. Tartu.
- Moora, Harri. 1956. Eesti rahva ja naaberrahvaste kujunemisest arheoloogia andmeil. In EREA, 41–119.
- Moora, Harri. 1958. Zur ethnischen Geschichte der ostseefinnischen Stämme. *Suomen Muinaismuistoyhdistyksen Aikakauskirja* 59:3. 1–39.
- Nichols, Johanna. 2021. The origin and dispersal of Uralic: Distributional ty- pological view. *Annual Review of Linguistics* 7. 351–369.

- Nunez, Milton. 1987. A model for the early settlement of Finland. *Fennoscandia Archaeologica* IV. 3–18.
- Oras, Ester et al. 2016. Tracing prehistoric migration: Isotope analysis of Bronze and Pre-Roman Iron Age coastal burials in Estonia. *Estonian Journal of Archaeology* 20(1). 3–32.
- PP 1999 = Fogelberg, Paul (ed.). 1999. *Pohjan pohuilla: Suomalaisten juuret nykytutkimuksen mukaan* (Bidrag till kännedom av Finlands natur och folk 153). Helsinki: Societas Scientiarum Fennica.
- Quiles, Carlos. 2018a. Corded Ware – Uralic (I): Differences and similarities with Yamna. <<https://indo-european.eu/2018/09/corded-ware-uralic-i-differences-and-similarities-with-yamna/>> (Accessed 2023-03-25.)
- Quiles, Carlos. 2018b. Corded Ware – Uralic (II): Finno-Permic and the expansion of N-L392 / Siberian ancestry. <<https://indo-european.eu/2018/10/corded-ware-uralic-ii-finno-permic-and-the-expansion-of-n-l392-siberian-ancestry/>> (Accessed 2023-03-25.)
- Quiles, Carlos. 2018c. Corded Ware – Uralic (III): “Siberian ancestry” and Ugric-Samoyedic expansions. <<https://indo-european.eu/2018/10/corded-ware-uralic-iii-siberian-ancestry-and-ugric-samoyedic-expansions/>> (Accessed 2023-03-25.)
- Quiles, Carlos. 2018d. Corded Ware – Uralic (IV): Hg R1a and N in Finno-Ugric and Samoyedic expansions. <<https://indo-european.eu/2018/10/corded-ware-uralic-iv-haplogroups-r1a-and-n-in-finno-ugric-and-samoyedic/>> (Accessed 2023-03-25.)
- Renfrew, Colin. 1987. *Archaeology and language: The puzzle of Indo-European origins*. London: Jonathan Cape.
- Saag, Lehti et al. 2017. Extensive farming in Estonia started through a sex-biased migration from the steppe. *Current Biology* 27(14). 2185–2193.
- Saag, Lehti et al. 2019. The arrival of Siberian ancestry connecting the Eastern Baltic to Uralic speakers further east. *Current Biology* 29(1). 1–11.
- Saarikivi, Janne. 2004. Is there Palaeo-European substratum interference in western branches of Uralic? *Suomalais-Ugrilaisen Seuran Aikakauskirja* 90. 187–214.
- Saipio, Jarkko. 2023. *Lapp cairns: Spatial and cultural context of Early Metal Period stone structures in the Finnish lake district* (Iskos 25). Helsinki: University of Helsinki. (Doctoral dissertation.)  
<<http://urn.fi/URN:ISBN:978-952-6655-36-9>>
- Setälä, Eemil Nestor. 1926. *Suomensukuisten kansojen esihistoria* (Suomen suku I). Helsinki.
- SVEJ 1984 = Åström, Sven-Erik (ed.). 1984. *Suomen väestön esihistorialliset juuret: Tvärminnen symposiumi 17.–19.1.1980* (Bidrag till kännedom av Finlands natur och folk 131). Helsinki: Societas Scientiarum Fennica.
- Wiik, Kalevi. 2002. *Eurooppalaisten juuret*. Jyväskylä: Atena Kustannus Oy.
- Wiik, Kalevi. 2004. *Suomalaisten juuret*. Jyväskylä: Atena Kustannus Oy.