

Stone Age anthropomorphic flat figurines from Tamula, Estonia

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This article presents for the first time the full collection of anthropomorphic figurines found at Tamula, dating from the 4th to 3rd millennium BC. While some figurines show high levels of craftsmanship, others exhibit poorer execution, suggesting that these objects were made by different individuals, possibly even the owners themselves. The ZooMS results indicate that some figurines were either produced at another location and brought to Tamula or were made from an imported and exotic raw material (goat or reindeer). The deliberate damage to full-body figurines points to ritual practices, potentially linked to shamanistic traditions where figurines represented spirit aids or shamanic helpers. Despite the challenges in applying modern shamanistic terms to prehistoric cultures, these figurines reflect a broader foragers' spiritual worldview across the vast territory of Northern and Eastern Europe.

Keywords: Anthropomorphic figurines, Tamula site, Eastern Baltic, ZooMS, use-wear studies, prehistoric spirituality.

Introduction

Anthropomorphic figurines are among the most valued artefacts in archaeology. There are several reasons for this, but the main appeal lies in the human essence itself – as humans, we are naturally drawn to how past cultures depicted their peers or human-like mythical and spiritual beings. As a result, anthropomorphic depictions often hold a central position in exhibitions, publications, and various research endeavours. As Douglass Bailey¹ aptly put it: “figurines just are important.”

Most studies on Stone Age anthropomorphic figurines focus on certain regions or periods such as Palaeolithic Western and Central Europe, the Epipalaeolithic and Neolithic Near East and Mediterranean, Preclassic Mesoamerica, or Jōmon-period Japan². However, anthropomorphic figurines from the forest zones of Northern and Eastern Europe have received limited attention, despite their prevalence in the hunter-fisher-gatherer art of the Eastern Baltic, the European part of Russia, and Belarus.

The limited attention is partly due to the publishing in local languages and/or in local publications. On the other hand, these figurines are often described repeatedly and in detail but without any interpretative analysis³. When interpretations are offered, Eastern European examples, grounded in local folklore, frequently lean too far into mythological explanations, in contrast to the ritual-focused interpretations in Western European studies⁴. This divergence has made integrating these studies challenging. Furthermore, anthropomorphic figurines appear during the Stone Age across diverse media – engraved on rocks and plaquettes of various materials; carved from wood, bone, and antler; knapped from flint; or modelled from clay – which makes a comprehensive understanding of this rich corpus complicated⁵.

1 Douglass Bailey, *Prehistoric Figurines: Representation and Corporeality in the Neolithic* (Routledge, 2005), 13.

2 Bailey, *Prehistoric figurines*; Richard G. Lesure, *Interpreting Ancient Figurines. Context, Comparison, and Prehistoric Art* (Cambridge University Press, 2011); Timothy Insoll (ed.), *The Oxford Handbook of Prehistoric Figurines* (Oxford University Press, 2017).

3 See the critique of a similar situation in Southeast Europe in Bailey, *Prehistoric figurines*.

4 Tõnno Jonuks, “The archaeology of Baltic religions”, in *Oxford Handbook of the Archaeology of Ritual and Religion*, ed. Timothy Insoll (Oxford University Press, 2011), 877–891. <https://doi.org/10.1093/oxfordhb/9780199232444.001.0001>

5 Milton G. Nunez, “Clay figures from the Åland Islands and mainland Finland”, *Fennoscandia Archaeologica* III (1986): 17–34; Väino Poikalainen and Enn Ernits, *Rock carvings*

In this article, we focus on the study of anthropomorphic flat figurines from the Tamula I⁶ Stone Age settlement and burial site, SW Estonia. Among sites with anthropomorphic bone flat figurines, Tamula is exceptional. Typically, only one or a few objects are found at a single site, making it difficult to establish broader interpretive patterns. In contrast, thirteen or fourteen anthropomorphic figurines have been found at Tamula, making it the richest site in the area for such finds. Despite being the largest collection, these figurines have been published in scattered sources⁷ or have not been published at all, and this is the first comprehensive overview of the collection. Over 30 inhumations have been recovered from the Tamula site, dated to 3800–2800 BC⁸. Some of the individuals were buried as primary inhumations, but analysis of loose bones suggests that other forms of burials or burial rituals involving multiple episodes were present⁹. Numerous contemporary sites are located nearby, particularly along the Võhandu

of Lake Onega II. The Besov Nos region. Karetski and Peri localities (Estonian Society of Prehistoric Art & Teadus ja Tegu OÜ, 2019); Adomas Butrimas, “Human figurines in Eastern-Baltic Prehistoric art”, *Acta Academiae Artium Vilnensis* 20 (2000): 7–29; Ekaterina Kashina, “Anthropomorphic flint sculpture of the European Russian Late Neolithic Age”, *Anthropologica et Præhistorica* 113 (2002): 51–60; Екатерина А. Кашина, “Резные антропоморфные изображения неолита-энеолита лесной зоны Восточной Европы и Скандинавии”, *Верхнедонской археологический сборник* 4 (2009): 38–51; Екатерина А. Кашина, “Кремневые антропоморфные скульптуры без рук в духовной жизни охотников лесной зоны Восточной Европы”, *Археология Севера: памятники, проблемы, гипотезы* (2024): 21–29; Irina Krusthaleva and Aivar Kriiska, “Inside the dwelling: clay figurines of the Jägala Jõesuu V Stone Age settlement site (Estonia)”, *Baltic Journal of Art History* 20 (2020): 11–57, <https://doi.org/10.12697/BJAH.2020.20.01>; Tõnno Jonuks, “Mesolithic anthropomorphic sculptures from the Northern Europe”, *Quaternary International* 573 (2021): 104–112, <https://doi.org/10.1016/j.quaint.2019.09.027>

- 6 Two Stone Age sites have been located on the northern shore of Lake Tamula. This article focuses on Tamula I, which will be referred to simply as Tamula.
- 7 Richard Indreko, “Skulptuur ja ornament Eesti kiviaja luuriistades”, *Eesti Rahva Muuseumi Aastaraamat* VI (1931): 47–70; Richard Indreko, “Einige Bemerkungen über die Idole der kammkeramischen Kultur”, *Apophoreta Tartuensia. Societas litterarum Estonica in Svecia* (1949): 129–139; Lembit Jaanits, “Jooni kiviaja uskumustest”, *Religiooni ja ateismi ajaloost Eestis* II (1961): 5–70. Lembit Jaanits, Silvia Laul, Vello Lõugas and Evald Tõnisson, *Eesti esiajalugu* (Eesti raamat, 1982).
- 8 Mari Tõrv, *Persistent Practices. A Multi-Disciplinary Study of Hunter-Gatherer Mortuary Remains from c. 6500–2600 cal. BC, Estonia*. Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum, 9 (Wachholtz Verlag, 2018), 135–136.
- 9 Tõrv, *Persistent practises*, 109–110.

River, but Tamula stands out as the only site with inhumation burials and a large collection of well-preserved art objects, thanks to its peat environment. However, preservation alone does not explain the uniqueness of this collection, as other sites along the same river (e.g., Villa, Kääpa) are also covered with peat but lack such a rich assemblage of art objects. Thus, Tamula is a distinctive site in the region.

The anthropomorphic figurines from Tamula

Two distinct types of anthropomorphic bone figurines are represented at Tamula: full-body figurines and head/face depictions [Table 1]. All of these carved anthropomorphic representations have usually been labelled as ‘pendants’. ‘Pendant’ is commonly understood as a loosely hanging object for decorative or symbolic purposes¹⁰. However, when examining the exact location of the anthropomorphic figurines in graves, we can see that these are rarely associated with positions such as the chest, which would suggest they were loosely hanging objects. Instead, it is more plausible that such figurines were attached to a soft surface, e.g., skin, hide, or another piece of clothing, and were thus permanently fixed¹¹. It is also highly unlikely that these figurines were primarily used for decorative purposes; therefore, the term ‘pendant’ is avoided here, and instead, the concept of ‘figurine’ is used.

Detailed descriptions were conducted at the archaeology collections of Tallinn University, where most of the objects are stored, using the Nikon SMZ745T microscope. Various technological steps and modes were discerned. The production of the figurines started by cutting them from larger pieces of bone, while simultaneously polishing the surface(s) with sharp blades and grinding. In several cases, the facial details were represented by scraping and grinding down the bone surface, forming the eyebrows

- 10 Tuuli Kurisoo, *Adornment, self-definition, religion: pendants of the north-eastern Baltic Sea region, 9th–13th century*. Studien zur Siedlungsgeschichte und Archäologie der Ostseegebiete, Band 19 (Wachholtz Verlag, 2021).
- 11 Eva Olsson, Gunilla G. Zillén and Anna Mohr, *Korsnäs – en gropkeramisk grav- och boplatz på Södertörn*. RAÄ Rapportserie 63 (Riksantikvarieämbetet, 1994); Guntis Gerhards, Gunita Zariņa and Ilga Zagorska, “Burial traditions in the East Baltic Mesolithic”, in *Mesolithic on the move. Papers presented at the Sixth International Conference on the Mesolithic in Europe, Stockholm 2000*, ed. Lars Larsson, Hans Kindgren, Kjel Knutsson, David Loeffler and Agneta Åkerlund (Oxbow books, 2003), 559.

and nose. Thicker layer of material was removed by scraping; the remaining tool marks suggest this was done using some blade, most likely a flint tool. Some fine abrasive material was used to smooth the cutting edges and, in some cases, also to represent facial details. Some figurines feature linear cut marks or drilled details. The drill was most often with a widening blade (most likely a flint bore), leaving a conical drill mark, sometimes executed from one side but more often from both sides. The latter was probably done to keep the edges of the piercing even and clean on both sides. In some cases, drilling was used to leave only a circular mark, for instance, to denote a mouth. In our dataset, only one figurine has cylindrical piercings, indicating the use of some other kind of bore.

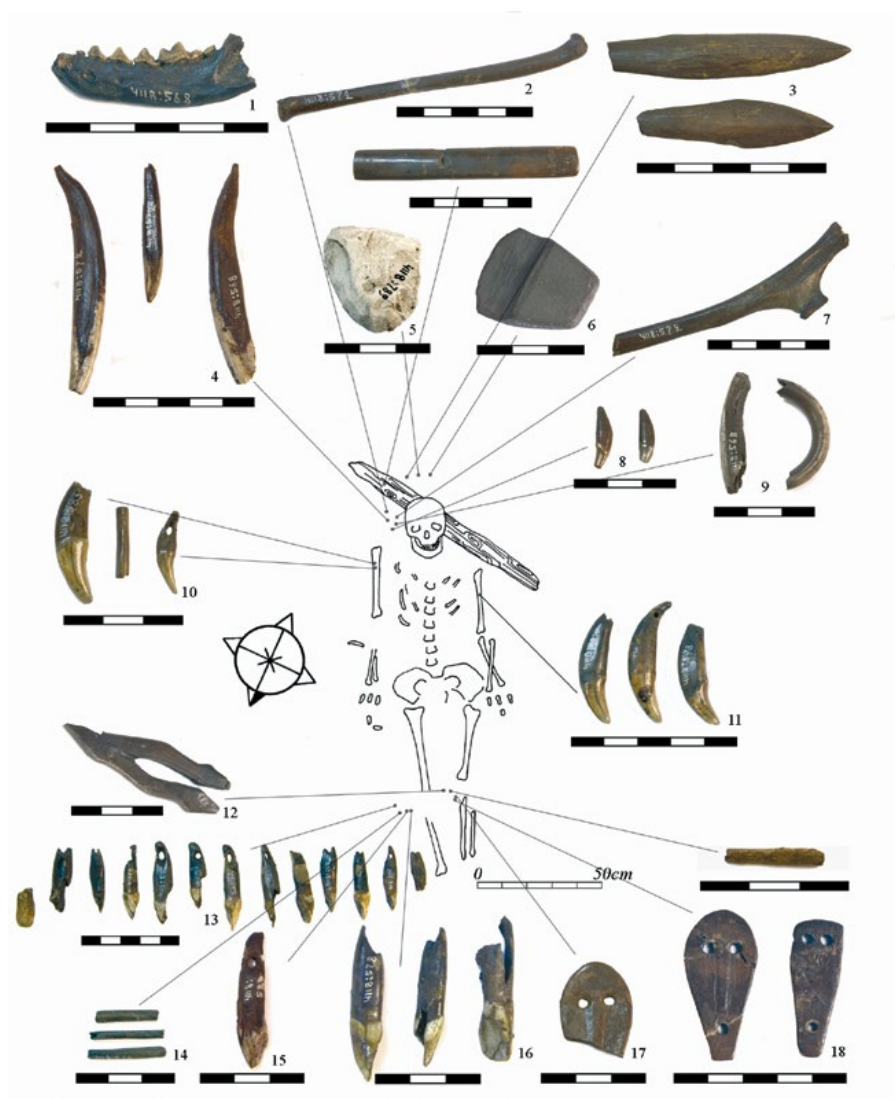
Many figurines in this collection feature irregular depressions of unclear natural origin. These are labelled as erosion depressions, but the cause remains uncertain.

Head/face figurines

Depending on the identification, seven or eight face figurines have been collected from Tamula. These lack any indication of a body or evidence that they were once attached to a larger structure, suggesting they were intended to depict only a head or a face. All share a rounded triangular shape, with both sides polished. Pierced or carved eyes and mouths are common, though some figurines are so simplified that identifying them as anthropomorphic is difficult.

A notable collection comes from the inhumation VIII, in which a human bone is dated to 4040–3290 BC with a 95.4% probability¹² [Fig. 1]. Three face figurines (AI 4118: 557, 575, 576) were found near the knee of a female burial. Two of these clearly represent anthropomorphic heads, with distinct noses and eyes. The third, a simple triangular object with three piercings, is also likely a face. In addition to the face figurines, pendants made of elk and marten teeth, as well as a double-headed snake figurine, were discovered in the same grave.

¹² Törv, *Persistent practises*, 135.



1. Inhumation VIII from Tamula, drawing by Kristel Roog

Inhumacinis palaidojimas VIII iš Tamula, Kristel Roog piešinys

AI 4118: 575 (4.2 × 1.5 × 0.2 cm) [Figs. 2a and 2b]: Both sides are polished with no significant tool marks. The edges are smoothed, and the eyes and mouth are marked with piercings. The mouth is drilled from both sides, while the eyes are drilled from one side. Two large scratches appear

on the “forehead”, with a quartz crystal lodged in one scratch. This suggests the scratches were caused by high-pressure contact with quartz or granite, most likely before the burial.

AI 4118: 576 ($4.7 \times 2.1 \times 0.2$ cm) [Fig. 3]: This is a well-carved face figurine, with the eye piercings drilled from both sides and the mouth from one. The nose is marked, with visible scraping marks on both sides of it. Most processing marks run lengthwise along the object, but lighter cross-wise scratches indicate active usage. Several depressions are visible on the reverse side.

AI 4118: 557 ($2.2 \times 2.4 \times 0.2$ cm) [Fig. 4]: A fragment of a well-carved face figurine, with eyes drilled from both sides and a nose carved by grinding the surface on both sides. Clear lengthwise production marks are visible, overlaid with lighter diagonal scratches, likely from post-production activity. The edges are smoothed, with only carving marks visible on the reverse side.

AI 4118: 849 ($2.9 \times 1.3 \times 0.2$ cm) [Figs. 5a and 5b]: This simple figurine shows signs of poor craftsmanship. A misplaced cut mark is visible on one edge, and processing marks are present near the mouth. The eyes are drilled from both sides at incorrect angles, with evidence of a relocated drill mark for one eye. The figurine lacks a nose or other facial details, but deliberate cut marks on both sides of the chin suggest that a beard or something similar was intended to be depicted.

AI 4118: 1922 ($4.1 \times 1.8 \times 0.2$ cm) [Figs. 6a and 6b]: This well-crafted figurine features symmetrical, polished surfaces. The piercings for the eyes and mouth are drilled from both sides, with one misplaced drill mark resulting in an oval eye. White particles, possibly some natural chlorides, are present in the eye drills. The chin has two deliberate cut marks, forming a serrated edge that most likely represents a beard. Deep scraping marks are visible across the object, forming a frame-like feature on the lower part of the face.

AI 6667: 12 ($3.5 \times 3.1 \times 0.3$ cm) [Fig. 7]: An exceptional, round, and massive figurine featuring cylindrical drill marks for the eyes and mouth. The nose is marked by scraping and grinding down the surface on both sides. Eyebrows are carved, which, unlike the other examples, look more natural.



2. Anthropomorphic figurine AI 4118:575 (a) and close-up of the upper part of the figurine (b), photos by Tõnno Jonuks



Antropomorfinė figūrėlė AI 4118:575 (a) ir figūrėlės viršutinė dalis stambiu planu (b), Tõnno Jonuks nuotraukos



3. Anthropomorphic figurine AI 4118:576, photo by Tõnno Jonuks

Antropomorfinė figūrėlė AI 4118:576, Tõnno Jonuks nuotrauka



4. Anthropomorphic figurine AI 4118:557, photo by Tõnno Jonuks

Antropomorfinė figūrėlė AI 4118:557, Tõnno Jonuks nuotrauka



5. Anthropomorphic figurine AI 4118:849. Note the misplaced drill mark for the eye on the right side, incorrect cut mark on the left side and lines right next the mouth, indicating bone processing, photo by Tõnno Jonuks

Antropomorfinė figūrėlė AI 4118:849. Atkreiptinas dėmesys į nukrypusias akies gręžimo žymę dešinėje pusėje, pjūvio žymes kairėje pusėje, bei linijas prie pat burnos, rodančias kaulo apdirbimą, Tõnno Jonuks nuotrauka

A small drill mark above the mouth may indicate either a misplaced drill or have some other symbolic meaning. A cut mark on the chin divides it into two parts, possibly marking a beard. The edges are smoothed, though no use/wear signs are visible. Erosion has caused depressions on the reverse side.

VK 50 A 7: 65 [Fig. 8]: This fragment, possibly part of a face figurine, has smoothed edges and a rhomb-pattern on its round section. A clear ridge divides the object, resembling eyebrows and the upper part of a nose, similar to other anthropomorphic figurines. However, since it is a fragment, it is difficult to confirm whether it depicts a face or is perhaps part of an animal figurine.

Full-body figurines

Another group of figurines from Tamula represents full-body anthropomorphic figurines in a highly standardised manner. The figurines are always depicted in a static, frontal position – standing, arms resting on the hips, legs slightly apart. The bodies are generally flat, with only a few examples showing any decoration. Faces, if preserved, may be highly detailed, showing prominent noses and protruding eyebrows, or they may lack any details altogether.

AI 4118:1746 (2.2 × 1.8 × 0.2 cm) [Fig. 9]: A fragmented anthropomorphic figurine, broken into several pieces, with the hip portion being the most intact. It shows two hands resting on the hips and both thighs, broken at the knees. The body is broken at a double-sided drilled piercing. The edges of the remaining piece are carefully smoothed, and four engravings on the hands represent fingers. The fracture surfaces are covered with local topsoil, indicating the figurine was broken before deposition. A sharp quartz crystal lodged in the central piercing suggests intentional placement rather than a natural occurrence. The figurine was found beneath the head of a female inhumation X, whose tooth is dated to 3620–2750 BC with a 95.4% probability¹³. Together with the anthropomorphic figurine were amber pendants, beaver and marten tooth pendants, and a waterfowl figurine – all once likely part of a headpiece.



6. Anthropomorphic figurine AI 4118:1922 (a)
and close-up (b), photos by Tõnno Jonuks



Antropomorfinė figūrėlė AI 4118:1922 (a) ir
stambiu planu (b), Tõnno Jonuks nuotraukos



7. Anthropomorphic figurine AI 6667:12,
photo by Tõnno Jonuks

Antropomorfinė figūrėlė AI 6667:12, Tõnno
Jonuks nuotrauka



8. Anthropomorphic figurine VK 50 A7:65,
photo by Jaana Ratas

Antropomorfinė figūrėlė VK 50 A7:65, Jaana
Ratas nuotrauka



9. A fragment of the anthropomorphic figurine
AI 4118:1746, photo by Tõnno Jonuks

Antropomorfinės figūrėlės fragmentas
AI 4118:1746, Tõnno Jonuks nuotrauka



10. Anthropomorphic figurine AI 3932:155,
photo by Tõnno Jonuks

Antropomorfinė figūrėlė AI 3932:155, Tõnno
Jonuks nuotrauka

AI 3932:155 (3.8 × 2.7 × 0.7 cm) [Fig. 10]: Originally a full-body figurine, with the body and arms broken, leaving only the head and shoulders. The face features raised eyebrows and a nose formed by grinding, with a drilled mark representing the mouth. Two diagonal lines on the cheeks resemble a face/mask figurine from burial 7 in Kretuonas 1C in eastern Lithuania¹⁴. A beard is marked by three carved lines on the chin. The head shows a piercing, drilled primarily from the front, though there are no signs of wear. Both the front and back sides exhibit multiple eroded depressions, and a large piece is missing from the back of the head. Stronger scraping marks on the body suggest that more material was removed due to its lower elevation relative to the face. Intriguingly, the carved lines on the shoulders may represent clothing¹⁵.

AI 3960:300 (3.3 × 1.2 × 0.5 cm) [Figs. 11a and 11b]: This figurine was once full-sized, though the right arm, leg, and lower left leg are currently missing. The simple, round head features a nose and delicate eyebrows created by grinding, with no marks for the eyes or mouth. Clear cut marks are visible across the body, particularly between the arm and torso. A black substance with small, round quartz crystals, apparently a local lakeside topsoil, is visible in multiple places, especially on broken parts.

AI 4118:945 (6.5 × 1.9 × 0.3 cm) [Fig. 12]: A full-body figurine, with only the head, body, left shoulder, and hand, together with the upper parts of this thighs preserved. The round head features carved eyebrows and a nose, with a T-shaped cut below the nose marking either the mouth or a moustache/beard. The left hand resting on the hip is marked with three cuts, symbolising fingers. All original edges are smoothed. Black topsoil is visible on multiple parts of the figurine, while the reverse side shows carving marks and erosion depressions. There is no visible piercing, but the gaps between the arms and body may have been used for attaching or suspending the figurine.

VK 3000 A 14:197 [Fig. 13]: This fragment preserves the body of an anthropomorphic figurine, including one hand resting on the hip and

¹⁴ Algirdas Girininkas and Linas Daugnora, "The Early Bronze Age cemetery in East Lithuania", in *A hundred years of archaeological discoveries in Lithuania*, ed. Gintautas Zabiela, Zenonas Baubonis and Eglė Marcinkevičiūtė (Society of the Lithuanian Archaeology, 2016), Fig. 8.

¹⁵ Indreko, "Skulptuur ja ornament", 34.



11. Anthropomorphic figurine AI 3960:300 (a) and close-up of the face (b), photos by Tõnno Jonuks



Antropomorfinė figūrėlė AI 3960:300 (a) ir jos veidas stambiu planu (b), Tõnno Jonuks nuotraukos



12. Anthropomorphic figurine AI 4118:945, photo by Tõnno Jonuks

Antropomorfinė figūrėlė AI 4118:945, Tõnno Jonuks nuotrauka



13. Anthropomorphic figurine VK 3000/A14:197, photo by Tõnno Jonuks

Antropomorfinė figūrėlė VK 3000/A14:197, Tõnno Jonuks nuotrauka



14. Anthropomorphic figurine VK 3000/A14:44, photo by Jaana Ratas

Antropomorfinė figūrėlė VK 3000/A14:44, Jaana Ratas nuotrauka

both thighs up to the knees. Carved from bone, the figurine is unsmoothed, with no detailed carvings such as fingers. A bone fragment may represent an arm, though it does not match the fracture surfaces. Multiple lengthwise cut marks on the surface likely result from production processes. Given the condition and shape of the figurine, it is possible that the figurine was broken and/or left unfinished, or it was used as a poorly executed figurine.

VK 3000 A 14:44 [Fig. 14]: This fragment preserves only the shoulders and body of a figurine. The edges of the figurine are smoothed, and four distinct crosswise cut marks and two unclear ones appear on the lower body, potentially representing clothing or a belt. Diagonal lines on the shoulders, similar to those on AI 3932:155, could also indicate clothing, although they might simply be decorative. A drilled double-sided piercing is located on the upper body, just below where the head would have been.

Table 1. Summary table of the figurines analysed in this article.

1.lentelė. Straipsnyje analizuojamų figūrėlių suvestinė.

No	No of the figurine	Type	State of Preservation	Year of excavation	Context	Date with RE correction	Reference
1	AI 4118: 575	Head	Complete	1955	figurines AI 4118: 557 and 576	4040–3290 BC	Jaanits 1956; Tõrv 2018
2	AI 4118: 576	Head	Complete	1955	557 and 575	4040–3290 BC	Jaanits 1956; Tõrv 2018
3	AI 4118: 557	Head	Complete	1955	575 and 576	4040–3290 BC	Jaanits 1956; Tõrv 2018
4	AI 4118: 849	Head	Fragmented	1956	feature; at the depth of ca 50 cm from the topsoil	NA	Jaanits 1956
5	AI 4118: 1922	Head	Complete	1961	From the Lake Tamula	NA	Jaanits 1961
6	AI 6667: 12	Head	Complete	1979(?)	From the Lake Tamula	NA	
7	VK 50 A7: 65	Head	Fragmented		From the Lake Tamula	NA	
8	AI 4118: 1746	Full body	Fragmented	1956	bone and amber figurines	3620–2750 BC	Jaanits 1956; Tõrv 2018

9	AI 3932:155	Full body	Fragmented	1942	depth of 60 cm from the topsoil	NA	Indreko 1942
10	AI 3960: 300	Full body	Fragmented	1946	excavations	NA	Moora 1946
11	AI 4118: 945	Full body	Fragmented	1956	feature; at the depth of 29 cm from the topsoil	NA	Jaanits 1956
12	AI 4118: 197	Full body	Fragmented	1955	feature; at the depth of 40 cm from the topsoil	NA	Jaanits 1956
13	VK 3000 A14: 197	Full body	Fragmented	1968	Habitation layer	NA	
14	VK 3000 A14: 44	Full body	Fragmented	1968	Habitation layer (square u/21)	NA	

Technological summary

It can be concluded that most of the anthropomorphic figurines were carefully and skilfully carved. However, there are some exceptions, such as VK 14:197, which appears unfinished, and AI 4118:849, where the layout and execution suggest the carver was less experienced. The carving process likely involved an initial stage where the surfaces were shaped and smoothed, followed by the addition of detailed features such as eyebrows, noses, and fingers. Piercings, whether for attachment or to depict eyes and mouths, appear to have been drilled as the final step. No visual traces of paint were found on any of the figurines.

None of the figurines show clear signs of wear. All cut marks are sharp, and the piercings show no evidence of having worn down. Still, some fine scratches hint at a longer artefact biography and their usage in various activities, suggesting they were not produced solely for burial rituals or purposes. The most striking of these scratches are the two deep lines on the forehead of AI 4118:575, one of which still contains a quartz crystal. These scratches could not have occurred after the figurine was deposited in the peat layer, although the process or origin of the scratches remains unclear. Such heavy scratches or intentional carving marks can also be found outside Estonia, on one of the figurines from Kretuonas 1C, for instance¹⁶. However, despite the presence of occasional use marks, all the cuts and

¹⁶ Butrimas, "Human figurines", Fig. 28.

edges of the figurines remain intact and undamaged, which would not have been expected if the figurines had been attached to clothing or a headpiece intended for daily use. Thus, it seems likely that the object to which the figurines were attached was used for a long period but only rarely, resulting in the well-preserved state of the figurines.

All head/face figurines were polished on both sides, while only the obverse side was properly executed for the full-body figurines. No other significant differences in the production techniques of face figurines versus full-body figurines were observed. However, a clear distinction exists in how they were deposited: all face figurines (with the exceptions of AI 4118:557 and VK 50 A 7:65) are intact or only slightly damaged due to post-depositional or excavation activities, while the full-body figurines are all highly fragmentary. Many of the damages to the full-body figurines give the impression of intentional breakage – breaks are not along even lines or at locations where they would naturally occur. The best example is AI 4118:945, in which the left arm is broken, but the shoulder and hand are preserved. In the case of natural breakage, either the shoulder or hand would also be missing, or the body itself would have been broken. Additionally, the thighs of the same figurine show different angles of breakage, whereas a natural break would most likely have occurred along a single line. The sharp quartz crystal lodged in the piercing of AI 4118:1746 further suggests the use of a quartz blade during the breakage process, supporting the idea of intentional destruction. Moreover, AI 4118:1746 was found in a closed complex beneath the head of burial X, with no missing parts of the same figurine. Such deliberate fragmentation suggests purposeful breakage prior to deposition. Deliberate fragmentation has been discussed in relation to ceramic figurines, which may have been made with the intent to be broken¹⁷. Other categories of figurines, such as waterfowl, are also fragmentary¹⁸, suggesting that a similar practice was related to different figurines.

17 Nunez, “Clay figures”; Krusthaleva and Kriiska, “Inside the dwelling”.

18 Mari Tõrv, Harald Lübke, John Meadows, Ilga Zagorska and Valdis Bērziņš, “Soul carriers to the afterlife? The context and meaning of the bird figurines from Riņņukalns”, in *Interaction without borders: Exemplary archaeological research at the beginning of the 21st century*, ed. Berit Valentin Eriksen, Angelika Abegg-Wigg, Ralf Bleile and Ulf Ickerodt (Zentrum für Baltische und Skandinavische Archäologie, 2017).

ZooMS analysis

The raw material for the figurines has been difficult to study. As the figurines are entirely polished, it is not possible to identify the species of the raw material based on morphological features. In rare cases, when morphological features are preserved, it has been possible to identify the bone used for the raw material, such as a sturgeon¹⁹.

To analyse the species used for production, zooarchaeology by mass spectrometry (ZooMS) was used in collaboration with the BioArch Lab at the University of York. Due to the small dimensions and fragility of the figurines, the standard sampling procedure was not possible. Instead, two samples were obtained from each object using different methods: eraser rubbings²⁰ and the forced bag sample²¹. Any collagen from both sample types was extracted using a minimally destructive buffer extraction, commonly used for ZooMS²². In brief, 200 µl of 50 mM ammonium bicarbonate (AmBic) was added to the eraser samples, while 1 ml of 50 mM AmBic was added to the sample bags. All samples were then incubated at 65°C for 1 hour to gelatinise any available collagen into solution. Following gelatinisation, 100 µl of the supernatant was transferred to a new microfuge tube, while the remaining sample and AmBic were stored at -20°C for further analysis if required.

- 19 Marius Iršėnas, "Anthropomorphic and zoomorphic Stone Age art in Lithuania and its archaeological cultural context", *Archaeologia Baltica* 13 (2010): 182.
- 20 Sara Fiddym, Bruce Holsinger, Chiara Ruzzier, Alexander Devine, Annelise Binois, Umberto Albarella, Roman Fischer, Emma Nichols, Antoinette Curtis, et al., "Animal Origin of 13th-Century Uterine Vellum Revealed Using Noninvasive Peptide Fingerprinting", *PNAS* 112, no. 49 (2015): 15066–15071, <https://doi.org/10.1073/pnas.1512264112>
- 21 Krista McGrath, Keri Rowsell, Christian Gates St-Pierre, Andrew Tedder, George Foody, Carolynne Roberts, Camilla Speller and Matthew Collins, "Identifying Archaeological Bone via Non-Destructive ZooMS and the Materiality of Symbolic Expression: Examples from Iroquoian Bone Points", *Scientific Reports* 9 (2019): 11027, <https://doi.org/10.1038/s41598-019-47299-x>
- 22 Michael Buckley, Matthew Collins, Jane Thomas-Oates and Julie C. Wilson, "Species Identification by Analysis of Bone Collagen Using Matrix-Assisted Laser Desorption/ionisation Time-of-Flight Mass Spectrometry", *Rapid Communications in Mass Spectrometry: RCM* 23, no. 23 (2009): 3843–3854, <https://doi.org/10.1002/rcm.4316>; Nienke Laura van Doorn, Hege Hollund and Matthew J. Collins, "A Novel and Non-Destructive Approach for ZooMS Analysis: Ammonium Bicarbonate Buffer Extraction", *Archaeological and Anthropological Sciences* 3 (2011): 281–289, <https://doi.org/10.1007/s12520-011-0067-y>

The collagen extracts underwent digestion overnight using the enzyme trypsin at 37°C and the digestion step was stopped with the addition of 5% v/v trifluoroacetic acid (TFA) after ~18 hours. The peptides were purified using C18 ZipTip pipette tips and eluted in 100 µl of conditioning solution (0.1% TFA in 50:50 ACN:water). 1 µl of the sample was spotted onto a Bruker ground steel target plate and mixed with 1 µl of matrix (alpha-cyano-4-hydroxycinnamic acid). The samples were spotted in triplicate alongside calibration standards, and the plate was run on a Bruker Ultraflex Xtreme MALDI ToF MS.

The spectra were analysed using mMass, an open-source mass spectrometry tool²³ (Strohalm et al. 2010). The three replicates were averaged, and the resulting averaged spectrum was cropped to 800–3500 m/z and peak-picked using a signal/noise ratio of 4 to 6. The peak list was compared to a list of published markers to make the identifications²⁴.

The results were generally poor, with the bag samples producing weak spectra across all specimens. The eraser samples yielded spectra with 3–5 peaks that could be attributed to collagen; however, due to the limited number of marker peaks, the identifications were restricted to the family level. Two groups of samples showed matches to a limited number of species. A fragment of a full-sized figurine, AI 4118:1746, from burial X matched with horse, likely indicating a wild horse (*Equus ferus*), given the temporal context. Horse bones are generally rare in Tamula, as well as in the Eastern Baltic overall at that time, but they do occur²⁵ [Table 2].

An intriguing group consists of two figurines, AI 4118:575 and AI 4118:576, which both matched with goat, ibex, and reindeer. None of the three species were present in Estonia during this period²⁶. The ibex can

- 23 Martin Strohalm, Daniel Kavan, Petr Novák and Vladimír Havlíček, “mMass 3: A Cross-Platform Software Environment for Precise Analysis of Mass Spectrometric Data”, *Analytical Chemistry* 82, no. 11 (2010): 4648–4651, <https://doi.org/10.1021/ac100818g>
- 24 Buckley, Collins, Thomas-Oates and Wilson, “Species Identification”; Frido Welker, Mateja Hajdinjak, Sahra Talamo, Klervia Jaouen, Michael Dannemann, Francine David, Michèle Julien, et al., “Palaeoproteomic Evidence Identifies Archaic Hominins Associated with the Châtelperronian at the Grotte Du Renne”, *PNAS* 113, no. 40 (2016): 11162–11167, <https://doi.org/10.1073/pnas.1605834113>
- 25 Каля Паавер, *Формирование териофауны и изменчивость млекопитающих Прибалтики в голоцене* (Институт зоологии и ботаники Академии наук Эстонской ССР, 1965); Linas Daugnora and Algirdas Girininkas, *Rytų Pabaltijo bendruomenių gyvensena XI–II tūkst. pr. Kr.* (Lietuvos veterinarijos akademija, 2004), Tables 16 and 18.
- 26 Паавер, *Формирование териофауны.*

Table 2. Results of ZooMS analysis. Only columns with results are presented. Result group 1 matches the following species (most likely species in **bold**): Impala, Saiga, Gazelle, Oribi, Steenbok, Kirk's Dik-dik, Hartebeest, Blue wildebeest, Tsessebe, Hirola, Waterbuck, Kob, Pere Davids deer, **Red deer, Elk**, Fallow deer, Chital Deer Tibetan Antelope, Chamois, **Sheep**, Suni, Klipspringer, **Cow**, Bison, **Auroch**, Yak, Musk ox. Group 2 matches: Impala, Tibetan Antelope, Chamois, **Sheep**, Saiga, Gazelle, Oribi, Steenbok, Kirk's Dik-dik, Suni, Klipspringer, Hartebeest, Blue wildebeest, Tsessebe, Hirola, Waterbuck, Kob, **Cow**, Bison, **Auroch**, Yak, Musk ox, Alpaca, Pere Davids deer, **Red deer, Elk**, Fallow deer, Chital Deer, **Pig**. Group 3 matches: **Goat**, Ibex, **Reindeer**. Group 4 matches: **Horse**.

2 lentelė. ZooMS analizės rezultatai. Pateikiami tik stulpeliai su gautais rezultatais. Rezultatai 1 grupės atitikmenys šioms rūšims (labiausiai tikėtinos rūšys pažymėtos **paryškintu šriftu**): impala, saiga, gazelė, oribi antilopė, savaninė antilopė, Kirko dikdiko antilopė, karvinė antilopė, antilopė gnu, galvijinė antilopė, Hanterio antilopė, vandeninis ožys, pelkinis ožys, Dovydo elnias, **taurusis elnias, briedis**, danielius, Tibeto antilopė, gemzė, **avis**, mažoji antilopė, antilopė šoklė, Karvė, bizonas, tauras, jakas, muskusinis jautis. 2 grupės atitikmenys: Tibeto antilopė, gemzė, **avis**, saiga, gazelė, oribi antilopė, savaninė antilopė, Kirko dikdiko antilopė, mažoji antilopė, antilopė šoklė, karvinė antilopė, mėlynoji antilopė, galvijinė antilopė, Hanterio antilopė, vandeninis ožys, pelkinis ožys, **karvė**, bizonas, **tauras**, jakas, muskusinis jautis, alpaka, Dovydo elnias, **taurusis elnias, briedis**, danielius, **kiaulė**. 3 grupės rungtynės: **ožka**, ibekšas, **šiaurės elnias**. 4 grupė: **arklys**.

Sample ID	Sample type	Results	ZooMS peptide markers						Results, group:
			α1 508	α2 484	α2 292	α2 793	α2 757	α2 757 (+Hyp)	
VK 50 A 7:65	Bag	Poor result							
VK 50 A 7:65	Eraser	Bovidae/ Cervidae	1105.6	1427.7		2131.1		3033.4	1
VK 3000 A 14:197	Bag	Poor result							
VK 3000 A 14:197	Eraser	Bovidae/ Cervidae	1105.6	1427.7	1648.8	2131.1	3017.4	3033.4	1
VK 3000 A 14:44	Bag	Bovidae/ Cervidae	1105.6	1427.7	1648.8				
VK 3000 A 14:44	Eraser	Bovidae/ Cervidae	1105.6	1427.7	1648.8	2131.1		3033.4	1
AI 6667:12	Bag	Poor result							
AI 6667:12	Eraser	Bovidae/ Cervidae	1105.6		1648.8	2131.1		3033.4	2
AI 3960:300	Bag	Poor result							
AI 3960:300	Eraser	Poor result							
AI 3932:155	Bag	Poor result							
AI 3932:155	Eraser	Bovidae/ Cervidae	1105.6	1427.7	1648.8	2131.1		3033.4	1
AI 4118:557	Bag	Poor result							
AI 4118:557	Eraser	Poor result							
AI 4118:575	Bag	Bovidae/ Cervidae/ Perissodactyla	1105.6	1427.7					

AI 4118:575	Eraser	Bovidae/ Cervidae	1105.6	1427.7		2131.1		3093.4	3
AI 4118:576	Bag	Poor result							
AI 4118:576	Eraser	Bovidae/ Cervidae	1105.6	1427.7		2131.1		3093.4	3
AI 4118:849	Bag	Poor result							
AI 4118:849	Eraser	Bovidae/ Cervidae	1105.6	1427.7	1648.8	2131.1		3033.4	1
AI 4118:945	Bag	Poor result							
AI 4118:945	Eraser	Bovidae/ Cervidae	1105.6	1427.7	1648.8	2131.1		3033.4	1
AI 4118:1746	Bag	Poor result							
AI 4118:1746	Eraser	Horse	1105.6	1427.7		2145.1		2999.4	4
AI 4118:1922	Bag	Bovidae/ Cervidae/ Perisso- dactyla	1105.6	1427.7					
AI 4118:1922 B	Eraser	Bovidae/ Cervidae	1105.6	1427.7		2131.1		3093.4	3

safely be ruled out, as the closest natural habitats are in the Near-East and the Mediterranean region. Goat (*Capra hircus*/*Capra aegagrus*) and reindeer (*Rangifer tarandus*) could be more plausible, although very unusual sources for the figurines in the context of Tamula. These figurines, along with AI 4118:557 (which unfortunately did not yield any results), were found in the knee area of burial VIII. This context supports the possibility that all three figurines were made from the same animal species. In addition, AI 4118:1922 also matched these species. As the latter is a find from the occupation layer, it is difficult to associate it with the figurines from burial VIII. However, all four objects are relatively well-crafted, represent the head/face, and share a general design that suggests a possible common origin.

The closest area where goats were kept during that period was in Southern Scandinavia to the west and Northern Poland to the southwest, about 500–700 km away from Tamula²⁷. The nearest area where reindeer were present at that time was even closer, approximately 400 km from

27 Lasse Sørensen and Sabine Karg, “The expansion of agrarian societies towards the north – new evidence for agriculture during the Mesolithic/Neolithic transition in Southern Scandinavia”, *Journal of Archaeological Science* 51 (2014): 105, <https://doi.org/10.1016/j.jas.2012.08.042>; Peter Rowley-Conwy, “North of the Frontier: Early Domestic Animals in Northern Europe”, in *The origins and spread of domestic animals in southwest Asia and Europe*, ed. Sue Colledge, James Conolly, Keith Dobney, Katie Manning and Stephen Shenan (Routledge, 2013), Table 15.1.

Tamula, in southeastern Finland²⁸. The population of southeastern Finland was undoubtedly culturally closer to the hunter-fisher-gatherer communities living in Estonia in the second half of the 4th millennium BC, sharing similar traits, including analogous ceramic figurines²⁹. Although the cultural affinity arguments point more towards reindeer, the current state of research does not allow us to confidently rule out either animal species. What is clear, however, is that the material is not local, and the figurines may have arrived in Tamula through at least two possible routes: a) they belonged to a person buried in the grave, who came from an area where reindeer were hunted or goats were herded, or b) the carved figurines were brought to Tamula through direct or mediated exchange.

The origin of the individual in grave VIII will likely be verifiable through biomolecular methods in the future. For now, we must accept that the presence of an immigrant is somewhat at odds with current knowledge about the usual users of this burial site, though it is by no means ruled out. The low intra-site variability of the dietary stable isotope, the temporal span of the site, together with the commonality of the mortuary practices³⁰, suggests that a single community used Tamula for both living and shorter-term depositing of its dead³¹. This hypothesis is further supported by their Eastern Hunter-Gatherer heritage and by the fact that at least two individuals – Tamula I and XXII – are related to each other through maternal lineages (USa1d2b)³².

The remaining figurines matched several species, with red deer, elk, aurochs, and wild boar being the most likely sources, as bones from these animals are abundant in Tamula³³. While sheep and cow are much less likely,

28 Tuija Rankama and Pirkko Ukkonen, “On the early history of the wild reindeer (*Rangifer tarandus* L.) in Finland”, *Boreas* 30 (2001): 131–147, <https://doi.org/10.1111/j.1502-3885.2001.tb01218.x>; Pirkko Ukkonen and Kristiina Mannermaa, *Jääkauden jälkeläiset. Suomen lintujen ja nisäkkäiden varhanen historia* (The National board of Antiquities, 2017), 224–225.

29 Nunez, “Clay figures”; Krusthaleva and Kriiska, “Inside the dwelling”.

30 Törv, *Persistent Practices*.

31 Mari Törv and Gunilla Eriksson, “Buried at home? Stable isotope analysis of the late hunter-gatherer cemetery population at Tamula, SE Estonia”, *Estonian Journal of Archaeology* 27, no. 2 (2023): 98–128, <http://dx.doi.org/10.3176/arch.2023.2.02>

32 Alissa Mittnik, Chuan-Chao Wang, Saskia Pfrengle, Mantas Daubaras, Gunita Zariņa, Fredrik Hallgren, Raili Allmäe, et al. “The genetic prehistory of the Baltic Sea region”, *Nature Communications* 9 (2018): 442, <https://doi.org/10.1038/s41467-018-02825-9>

33 Паавер, “Формирование териофауны”, 439–440.

they cannot be ruled out entirely, as demonstrated by isolated but still undated domestic animal bones found at the Tamula settlement site³⁴.

Spatial and temporal context of anthropomorphic flat figurines

The region where such figurines are spread is limited to the Northern and Eastern European forest zone. The NW border is marked by a bone anthropomorphic flat pendant from Korsnäs³⁵ and an amber one from Alvaréd, Western Sweden³⁶. From the southern part of Finland, three amber anthropomorphic heads have been found in Astuvansalmi, Lake Saimaa area³⁷, and an amber figurine depicting an anthropomorphic head was discovered in Kukkarkoski grave 1a, dated to 4040–3360 BC³⁸. Slightly to the east a pendant was found in Metsäpirtti, on the eastern side of Lake Ladoga³⁹, from the Old Siass Canal on the southern side of Ladoga⁴⁰, and another one in Besov Nos on the eastern shore of Lake Onega⁴¹.

Tamula is the only site in Estonia where such figurines are found with two dated contexts, inhumation VIII (4040–3290 BC) and X (3620–2750 BC). An amber figurine from the Romi-Kalnin site⁴², two full-body

34 Паавер, “Формирование териофауны”, 440.

35 Olsson, Zillén and Mohr, *Korsnäs – en gropkeramisk*.

36 Lars Larsson, “The sun from the sea – amber in the Mesolithic and Neolithic of Southern Scandinavia”, *Acta Academiae Artium Vilnensis* 22 (2001): 73.

37 Juhani Grönhagen, “Ristiinan Astuvansalmi, muinainen kulttipaikkako?”, *Suomen Museo* 101 (1994): 5–18; Antti Lahelma, *A touch of red. Archaeological and ethnographic approaches to interpreting Finnish rock paintings*. Iskos 15 (The Finnish Antiquarian Society, 2008).

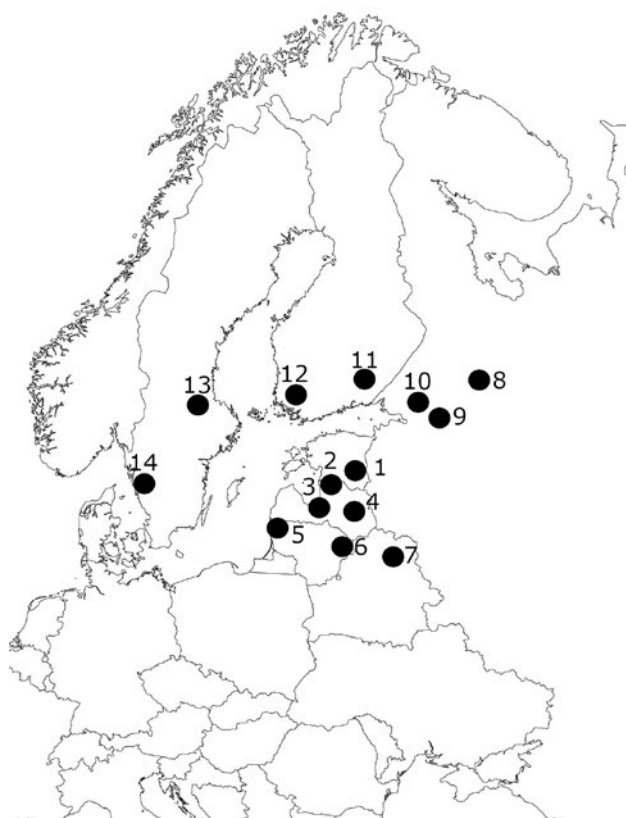
38 Dating of charcoal collected from the bottom of the grave: 4890±150 BP (Hela-832), calibrated with OxCal v.4.4.4 (Bronk Ramsey 2021), using IntCal20 atmospheric curve (Reimer et al. 2020); Markku Torvinen, “Liedon Kukkarkosken kivikautinen kalmisto”, *Suomen Museo* 85 (1978): 75, Fig. 11; Marja Ahola, “Tracing Neolithic funerary practices from Finnish ochre graves – a case study from Kukkarkoski Comb Ware burial ground”, *Thanatos* 4, no. 2 (2015): Table 1.

39 Indreko, “Einige Bemerkungen”.

40 Francis Zagorskis, Zvejnieku akmens laikmeta kapulauks (Zinātne, 1987), 76; Владимир Тимофеев, “Памятники мезолита и неолита региона Петербурга и их место в системе культур каменного века Балтийского региона”, *Древности Северо-Запада России (славяно-финно-угорское взаимодействие, русские города Балтики)* (1993): Figs. 2 and 21.

41 Надежда Лобанова, “О двух костянных изделиях из мезолитического слоя Бесов Нос”, *Вестник Карельского музея* 3 (1995): 165–175.

42 Луция Ванкина, “Янтарные амулеты каменного века из окрестностей г. Риги”, *Изискания по мезолиту и неолиту СССР* (1983): 135–137.



15. Sites mentioned in the text: 1. Tamula, 2. Zvejnieki, 3. Romi-Kalnin, 4. Abora, 5. Juodkrantė, 6. Kretuonas 1C, 7. Asaviec 2, 8. Besov Nos, 9. Siass Canal, 10. Metsäpirtti, 11. Astuvansalmi, 12. Kukarkoski, 13. Korsnäs, 14. Alvared, map by Tõnno Jonuks, with the base map provided by Vemaps.com

Tekste minimos vietovės:
1. Tamula, 2. Zvejnieki, 3. Romi-Kalnin, 4. Abora, 5. Juodkrantė, 6. Kretuonas 1C, 7. Asaviec 2, 8. Besov Nos, 9. Siass Canal, 10. Metsäpirtti, 11. Astuvansalmi, 12. Kukarkoski, 13. Korsnäs, 14. Alvared, sudarė Tõnno Jonuks, žemėlapis pagrindas iš Vemaps.com

anthropomorphic bone figurines from Abora⁴³, and three figurines from the Zvejnieki cemetery⁴⁴ have been found in modern Latvia. The anthropomorphic flat figurine from grave no. 172 at Zvejnieki is, according to current knowledge, the oldest of its kind and likely dates to the 5th millennium BC⁴⁵. Another figurine has been found in grave 228 at Zvejnieki, dated to 3800–3300 BC⁴⁶, corresponding to the dates from Tamula.

The southern border is marked by the Juodkrantė amber collection from the western coast of Lithuania, the collection of face figurines from Kretuonas 1C in Eastern Lithuania, dated to the first half of the 2nd

43 Илзе Лозе, *Поздний неолит и ранняя бронза Лубанской низины* (Зинатне, 1979), 110–111, Table 1.

44 Ilga Zagorska, John Meadows and Marius Iršėnas, “New dates from Zvejnieki burial ground graves with anthropomorphic and zoomorphic figurines”, *Archaeologia Baltica* 25 (2018): 100–124, <https://doi.org/10.15181/ab.v25i0.1833>

45 Zagorskis, *Zvejnieku akmens*, 75–76; Zagorska, Meadows and Iršėnas, “New dates”, 107–108.

46 Zagorska, Meadows and Iršėnas, “New dates”, Table 2, 113.

millennium BC⁴⁷, and a small sculptural anthropomorphic head from the second half of the 3rd and first half of the 2nd millennia BC at the Asaviec 2 site, Northern Belarus⁴⁸ [Fig. 15]. In the eastern region, figurines knapped from flint were added to bone objects. Flint figurines are spread across vast areas, especially in the Volga-Oka interfluvium, to a lesser extent up to the White Sea in Karelia and near the Ural Mountains⁴⁹. The figurines from Kretuonas 1C and some flint figurines from the first half of the 2nd millennium BC represent the youngest strata of this anthropomorphic tradition⁵⁰. Also, the contextual dates from the occupation layers across the Eastern Baltic confirm that flat figurines were produced and used from the 5th millennium BC onwards, with the majority of the objects dating to the 4th and 3rd millennia BC, and single examples extending to the 2nd millennium BC.

Discussion – interpreting the anthropomorphic flat figurines

The earliest decorative objects from the Eastern Baltic date back to the Final Palaeolithic and Early Mesolithic. These primarily consist of drilled or carved geometric ornamentation on bone and antler implements⁵¹. Around the mid-7th millennium BC, a new tradition of portable sculptures emerged, made mostly of elk antler and exemplified by elk-headed staffs and zoomorphic or ornithomorphic figurines⁵², including

- 47 Butrimas, “Human figurines”; Girininkas and Daugnora, “The Early Bronze”.
- 48 Михаил Чарняўскі, “Паўночнабеларуская культура”, *Археалогія Беларусі* 1 (1997): 326; Максим Чернявский, “Новые даты с поселения Асавец 2”, in *Радиоуглеродная хронология эпохи неолита Восточной Европы VII–III тысячелетия до н. э.*, edited by Ганна И. Зайцева, Ольга В. Лозовская, Александр А. Выборнов and Андрей Н. Мазуркевич (Свиток, 2016), 310–316.
- 49 Кашина, “Anthropomorphic flint”; Kashina, “Кремневые антропоморфные”. Юрий Б. Сериков, *Очерки по первобытному искусству Урала* (Нижнетагильская государственная социально-педагогическая академия, 2014).
- 50 Girininkas and Daugnora, “The Early Bronze”; Кашина, “Anthropomorphic flint”, 54.
- 51 Butrimas, “Human figurines”; Tomasz Plonka, *The Portable Art of Mesolithic Europe*. Acta Universitatis Wratislaviensis. No 2527 (Wydawnictwo Uniwersytetu Wrocławskiego, 2003); Tomas Rimkus, Adomas Butrimas, Marius Iršėnas and John Meadows, “The decorated spindle-shaped bone dagger from Šarnelė: the earliest example of hunter-gatherer mobile art in Lithuania”, *Archaeologia Baltica* 26 (2019): 50–62, <https://doi.org/10.15181/ab.v26i0.2022>
- 52 Iršėnas, “Elk figurines”; Plonka, *The Portable*; Tönno Jonuks, “An antler object from the Pärnu River – an axe, a god or a decoy?”, in *man, his time, artefact and places. Collection of articles dedicated to Richard Indreko*, eds. Kristiina Johanson and Mari Tõrv (University of Tartu & University of Tallinn, 2013), 225–246; Ville N. Mantere and Ekaterina

anthropomorphic sculptures⁵³. These early anthropomorphic examples, though rare, feature minimal bodily details and are often interpreted as representations of spiritual beings or deceased individuals⁵⁴. Some interpretations suggest these sculptures depict persons, capable of switching between the realms of the living and the dead or controlling the state between consciousness and trance⁵⁵. Wooden anthropomorphic sculptures resemble the antler objects, as they typically have simplified bodies with only the facial features – relief nose and eyebrows, occasionally also a mouth – represented. Together with large anthropomorphic poles, they have been interpreted as depictions of masters of nature, marking good fishing sites⁵⁶. The dating of wooden sculptures across Eurasia varies significantly, with the earliest example, the Shigir Idol from the Urals, dated to 10000 BC⁵⁷, while Eastern Baltic examples date between 4000 and 2000 BC⁵⁸. The wide distribution of anthropomorphic imagery is also evident in various bone and amber objects or plaquettes across Northern Europe, where human figurines are engraved or outlined with drilled lines⁵⁹.

Since the 5th millennium BC, but especially from the beginning of the 4th millennium BC, a new tradition of flat figurines depicting various animals and birds, including anthropomorphic figurines, spread across the Eastern Baltic. Although it is difficult to pinpoint the origin of this tradition,

A. Kashina, “Elk-head staffs in prehistoric North-Eastern Europe and North-Western Russia – signs of power and prestige?”, *Oxford Journal of Archaeology* 39, no. 1 (2020): 2–18, <https://doi.org/10.1111/ojoa.12185>

53 Jonuks, “Mesolithic anthropomorphic”.

54 Jaanits, “Jooni kiviaja”; Butrimas, “Human figurines”.

55 Jonuks, “Mesolithic anthropomorphic”.

56 Butrimas, “Human figurines”, 13.

57 Thomas Terberger, Mikhail Zhilin, and Svetlana Savchenko, “The Shigir idol in the context of early art in Eurasia”, *Quaternary International* 573 (2021): 14–29, <https://doi.org/10.1016/j.quaint.2020.10.025>

58 Butrimas, “Human figurines”, 13.

59 Erik Brinch Petersen, “Lots of dots – a Late Mesolithic art style with human figures”, in *Mesolithic art – abstraction, decoration, messages. Tagungen des landesmuseum für Vorgeschichte Halle 26*, eds. Judith M. Grünberg, Bernhard Gramsch, Erik Brinch Petersen, Tomasz Plonka and Harald Meller, (Landesmuseum für Vorgeschichte Halle, 2023), 179–190; Erik Brinch Petersen and Peter Andreas Toft, “Working with geometrics – decorated amber pendants from the Danish Maglemosean (9600–6500 cal BC)”, in *Mesolithic art – abstraction, decoration, messages. Tagungen des landesmuseum für Vorgeschichte Halle 26*, eds. Judith M. Grünberg, Bernhard Gramsch, Erik Brinch Petersen, Tomasz Plonka and Harald Meller, (Landesmuseum für Vorgeschichte Halle, 2023), 91–110.

it likely emerged during the Narva culture period (the dating of the classic phase is 5500–3900 BC), but most of the flat figurines belong to the broader Comb Ware cultural complex (3900–1800 BC) or at least its sphere of influence⁶⁰. These depictions range from commonly represented species, such as waterfowl⁶¹ or snakes, to more uniquely represented animals like hedgehogs, bears, and wild boars.

Anthropomorphic figurines are usually highly stylised, representing only a few details (eyes, nose and/or mouth), leaving little ground for speculation about ‘who they are’. This study demonstrated that, based on the serrated chin, which can be interpreted as a beard, three figurines (AI 4118: 1922, 6667: 12, 3932: 155) represent males, and the figurine AI 4118: 945 is also possibly male. However, none of the figurines display clear female characteristics, suggesting that sexual distinction was not important. Most interpretations of anthropomorphic figurines have focused on representations of spiritual beings or deceased souls⁶². The position of full body figurines also seems to give credit to such interpretation. All the full-body figurines are static, depicted *en face*, stretched, either standing or lying, legs slightly spread, hands either on the side or resting on hips. A similar position is represented on Mesolithic rock art in Scandinavia, and Trond Lødøen⁶³ has interpreted this position as that of dead bodies. In this interpretation reference is also made to depictions of skeletons on rock art, while the flat figurines rather depict the human body, not the bones. The face figurines can also be associated with dead bodies when interpreted as masks rather than real faces. This can explain why the figurines are polished and carefully executed on both sides differently from full-body figurines. There are some rare examples of the use of full-size anthropomorphic masks, such as the one from Sakhtysh IIa, interpreted as having been used during

60 Aivar Kriiska, Valter Lang, Ain Mäesalu, Andres Tvaari and Heiki Valk, *Eesti esiaeg. Eesti ajalugu I* (Tartu Ülikooli ajaloo ja arheoloogia instituut, 2020).

61 Törv, Lübke, Meadows, Zagorska and Bērziņš, “Soul carriers”.

62 Jaanits, “Jooni kiviaja”.

63 Trond K. Lødøen, “From past hunting to death narratives: towards a better insight into Mesolithic animal ontologies”, in *Mesolithic art – abstraction, decoration, messages. Tagungen des landesmuseum für Vorgeschichte Halle 26*, eds. Judith M. Grünberg, Bernhard Gramsch, Erik Brinch Petersen, Tomasz Plonka and Harald Meller, (Landesmuseum für Vorgeschichte Halle, 2023), 236.

ancestor-related rituals⁶⁴. The tradition to cover a dead person's eyes or face can be found in Comb Ware burials on the eastern coast of the Baltic Sea⁶⁵ and even more broadly⁶⁶. However, interpretations along the death culture discourse are far too common in archaeology and should not be taken for granted in every context. There are other possibilities of interpretation, such as associating the anthropomorphic figurines with healing magic⁶⁷, which have only been briefly touched upon.

While the figurines in Tamula can be grouped into two categories, their contexts and appearance suggest they were used simultaneously and may have held similar symbolic meaning. Most of the anthropomorphic figurines were discovered within the occupation layer of the site, with excavation reports offering little additional data for interpretation. Only four figurines were found in burial contexts. Three head/face figurines (AI 4118: 557, 575, and 576) were found together at the knee of burial VIII, and a fragmented figurine (AI 4118: 1746–1748) was discovered beneath the skull of burial X. These placements suggest that the figurines were originally attached to clothing, an apron, or headpiece of the deceased. The unpolished backsides of the full-body figurines further indicate that they were likely affixed to a soft surface, such as clothing or leather, rather than used as free-hanging pendants. This interpretation may also apply to other figurines found at the site and indicate that and were once attached to clothing that has not been preserved. Considering the long timespan over which the Tamula site was used for burials, very few inhumations have been found⁶⁸. It is most likely that many more individuals were buried at the site but not as underground inhumations. Foragers' burial practices were probably highly variable and possibly included above-ground burial. Loose human bones

64 Елена А. Костылёва and Александр В. Уткин, “Восточноприбалтийский след в оформлении ритуальной маски из святилища могильника Сахтыш Па (Центр Русской равнины)”, *Тверской археологический сборник* 21 (2021): 299–308.

65 Torsten Edgren, “Honkilahden Kolmhaaran ensimmäiset punamultahaudat. Muistoja 50 vuoden takaa ja uusia tulkintoja”, *Hiisi* 1 (2009): 17–21; Ilga Zagorska, *Secrets of ancient Lake Burtnieks. Stone Age sites by the shore of Lake Burtnieks* (Zinātne, 2017), 68, Fig. 46.

66 Tünde Horvath, “Human depictions in the Age of Transformation, between 4000 and 2000 BC”, in *Anthropomorphism and symbolic behaviour in the Neolithic and Copper Age communities of South-Eastern Europe*, eds. C.-E. Ursu and S. Țerna (Editura Karl A. Romstorfer, 2014), 507–544.

67 Jaanits, “Jooni kivijaja”.

68 Törv, *Persistent Practices*.

and flat figurines, either anthropomorphic or representing any other creatures, may be inherited from these practices, which must be considered as at least one possibility.

The carving quality of the figurines has been very different. There are objects which have been executed carefully with high skill and with multiple details. At the same time, some objects suggest poor craftsmanship – the design has failed, drills have been misplaced, lines carved in the wrong location, etc. Such a variety of different skills can be interpreted as the figurines being carved by different individuals, possibly by the owners themselves. The rare cases – like the female inhumation VIII in Tamula, where three face-pendants were found at the knee area, possibly all of them produced from bone of the same species, with similar designs, and carved with even skill – support the interpretation that the figurines were prepared either by the owners themselves or ordered from a special craftsman. Unfortunately, the majority of the figurines have been found in the occupation layer, which does not provide good context for further interpretations.

While there are many similarities with the anthropomorphic figurines from Tamula, there is a significant difference – all full-body figurines are broken and face/masks are intact, with only rare exceptions. As this practice is so common and the detailed analysis suggests that the damaging of full-body figurines has been a deliberate act, it probably relates to the deposition practice. Such an interpretation has been suggested mostly about the ceramic figurines⁶⁹, but deliberate breaking is apparent here as well. However, even if many full-body figurines are broken – in addition to Tamula, also at Korsnäs in Sweden, Ivanovo in Russia, etc. – not all the full-body figurines are damaged in the distribution area of anthropomorphic flat figurines. The figurines from Zvejnieki or the multiple amber figurines of full-body from Juodkrantė, etc., are all intact without any sign of deliberate damage. This may indicate local customs inside a broader cultural area about how to give meaning and handle anthropomorphic figurines. In this context, it is interesting to note that face/masks rarely bear the signs of deliberate damage (like VK 50 A 7:65), in Tamula as well as elsewhere. This can be partly because face figurines are more solid pieces and difficult to break, but it may also indicate some differences in semantics.

69 Krusthaleva and Kriiska, “Inside the dwelling”.

The use-wear signs of the figurines are slightly controversial – all figurines have smooth, polished edges and drilled piercings, which indicate short-term usage. On the other hand, the same figurines also have signs of usage – fine or rough scratches, which indicate intensive practice. This seems to suggest that the figurines were well handled after production and used only rarely, but some intensive practice was involved in these cases, resulting in occasional scratches to heavy cuts. This can be interpreted as the figurines were not meant for everyday decoration and they were probably involved in some special activity together with special pieces of costume, to which the figurines were attached.

Considering the technological data, find contexts and the broader cultural context of the 5th–2nd millennium BC in the Northern and Eastern European forest zone, it seems likely to suggest that the figurines were used in some sort of ritual practice. The connection between the Tamula figurines and a possible shamanistic worldview has been pointed out already by Lembit Jaanits⁷⁰. There is a rich research and interpretation tradition in using the concept of shamanism in archaeology globally⁷¹, and the term may be considered the most used and abused. Also, in anthropology, there are very different spiritual and ritual traditions labelled under this term, making the meaning of shamanism even more obscure. In our case, it seems likely to interpret the small figurines as analogies to representations of aid-spirits of shamans, the creatures so essential in Eurasian shamanism⁷². In many Eurasian shamanistic traditions, the main purpose of a shaman was to perform spiritual travels and, during these, solve the problems either for a person or for the whole community⁷³. The aid-spirits followed and assisted the spirit of the shaman during these travels. To control the spirits, there are material representations of them, attached to the ritual dress or costume. After the

70 Jaanits, “Jooni kiviaja”.

71 Neil S. Price (ed.), *The archaeology of shamanism* (Routledge, 2001).

72 Roy L. Carlson, “Sacred sites on the Northwest Coast of North America”, in *Bog bodies, sacred sites and wetland archaeology*, eds Bryony Coles, John Coles and Mogens Schou Jørgensen (Department of Archaeology, University of Exeter, 1999), 39–46; Ekaterina Devlet, “Rock art and the material culture of Siberian and Central Asian shamanism”, in *The archaeology of shamanism*, ed. Neil S. Price (Routledge, 2001), 51; Lahelma, *A touch of red*, 52.

73 Caroline Humphrey, “Shamanic practices and the state in the Northern Asia: views from the center and periphery”, in *Shamanism, history, and the state*, eds Nicholas Thomas and Caroline Humphrey (The University of Michigan Press, 1996), 191–228.

death of a shaman, the figurines of aid-spirits were damaged in many shamanistic traditions⁷⁴. This symbolic killing of the aid-spirits was caused by the understanding that otherwise the spirits would be left uncontrolled and could be dangerous to the rest of the community.

Such an anthropological analogy provides an interpretation of the flat figurines of the forager's tradition of the forest zone. The anthropomorphic figurines could have been the aid-spirits of the ritual specialists, who acquired the spirits personally and either crafted the figurines themselves or had them made. The depictions of spirits were most likely attached to special pieces of costume, whether it was a headpiece, apron, or even a full dress⁷⁵. As such ritual dress was only necessary at certain times, the figurines are well-preserved, without any substantial use-wear. However, during rituals, the figurines were used, and as demonstrated by AI 4118:575, some were handled very roughly or may have even been intentionally injured in the course of communication with the spirit. Such rituals could have taken place at special sites, like rock outcrops marked with Stone Age rock paintings, associated with shamanistic practices in Southern Finland⁷⁶. However, there is no evidence yet to speculate about such ritual sites in Estonia. Some of the possible aid-spirits figurines were made of exotic animal bones, either goat or reindeer, and possibly the exotic origin of the figurine material added some extra value to the object itself. There is also other data demonstrating that exotic animal bones and teeth have been used, like the pendants of marmot teeth in burial contexts in Sakhtysh IIa⁷⁷. The bodies of the ritual specialists were buried at the site in Tamula, some possibly also left above the ground, and some of the figurines were deliberately damaged – most likely on purpose to kill or make the spirits incapable of affecting society. This practice, however, did not involve all the figurines.

74 Natalie Mikhailova, "The cult of the deer and „shamans“ in deer hunting society", *Archaeologia Baltica* 7 (2006): 187–198.

75 Jonuks, "The archaeology".

76 Antti Lahelma, "Between the worlds. Rock art, landscape and shamanism in Subneolithic Finland", *Norwegian Archaeological Review* 38, no. 1 (2005): 29–47, <https://doi.org/10.1080/09018320510032402>

77 Aija Macâne, Kerkko Nordqvist and Elena Kostyleva, "Marmot incisors and bear tooth pendants in Volosovo hunter-gatherer burials. New radiocarbon and stable isotope data from the Sakhtysh complex, Upper-Volga region", *Journal of Archaeological Science: Reports* 26 (2019): 101908, <https://doi.org/10.1016/j.jasrep.2019.101908>

By such an interpretation we do not wish to suggest that the foragers' shamanism has been preserved from the 5th millennium to the present day in Eurasia. The anthropological descriptions of shamanistic practices since the 18th century provide us with vocabulary and certain concepts of how to understand cultures, dependent on hunting-fishing livelihoods, to whom communication with nature spirits is existentially important. Still, the foragers' communities during the Stone Age were different from the modern analogies that can be used from anthropological records and represented their own unique worldviews. Even if we use the concept of shamanism and terminology from shamanistic cultures, the Stone Age foragers' material culture signals features which do not have any analogy in anthropological descriptions. The spatial distribution of small figurines, either representing anthropomorphic creatures or any other species as aid-spirits, thus signals the similar worldview across the Stone Age forager communities in the Northern and Eastern European forest zone. This most likely disappeared during the second millennium BC, with one of the very late examples being the Kretuonas site in eastern Lithuania, in the course of the distribution of a new worldview, where nature spirits did not have such a position anymore.

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Akmens amžiaus plokščios antropomorfinės figūrėlės iš Tamulos, Estija

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Reikšminiai žodžiai: Antropomorfinės figūrėlės, Tamula, Rytų Baltijos regionas, ZooMS, nusidėvėjimo tyrimai, priešistorės dvasingumas.

Antropomorfinės figūrėlės iš Tamulos (Estija), pirmą kartą publikuojamos kaip pilnas rinkinys, atspindi svarbų priešistorinės ritualinės kultūros Rytų Baltijos regione aspektą. Figūrėlių daugiausia rasta kultūriniuose sluoksniuose ir tik pavienės yra iš palaidojimų kontekstų. Kadaise figūrėlės galimai buvo tvirtinamos prie drabužių, galvos apdangalų ar kostiumų ir greičiausiai nebuvo naudojamos kaip laisvai kabantys pakabukai. Panašių antropomorfinių objektų rasta didžiulėje Šiaurės ir Rytų Europos miškų zonos teritorijoje, nuo Švedijos ir Pietų Suomijos iki Šiaurės Vakarų Rusijos, Rytų Baltijos regiono ir Šiaurės Baltarusijos.

Priklausomai nuo interpretacijos, Tamuloje rasta 13 arba 14 figūrėlių, kurios skirstomos į dvi pagrindines grupes: galvos ir veido figūrėlės ir viso kūno figūrėlės. Figūrėlės pasižymi įvairiu meistriškumu: kai kurios iš jų yra puikiai pagamintos, o kitos turi prasto meistriškumo požymių, o tai gali reikšti, kad šie daiktai nebuvo masinės gamybos, o veikiau asmeniniai, galbūt sukurti pačių savininkų arba užsakyti pas specialistus. Įdomu tai, kad dauguma viso kūno figūrėlių yra sąmoningai sulaužytos – ši praktika dažnai siejama su ritualiniu deponavimu, kuris pastebėtas ir kitose archeologinėse vietovėse. Šis sąmoningas pažeidimas greičiausiai atspindi simbolinį veiksmą, susijusį su manipuliavimu jose vaizduojamomis dvasiomis, atitinkantį šamanistines tradicijas, pagal kurias dvasių figūrėlių sudaužymas galėjo reikšti dvasių kontrolę arba „nužudymą“, neleidžiant joms daryti žalos. Tačiau tokia praktika nebuvo taikoma galvos/veidų figūrėlėms. Be to, platesniame Rytų Baltijos regione su visomis figūrėlėmis elgiamasi panašiai – kai kurios jų sąmoningai sudaužomos, o kitos paliekamos nepažeistos.

Figūrėlių nusidėvėjimo analizė parodė, kad figūrėlės yra labai geros būklės, be žymesnių nusidėvėjimo požymių. Kartu kai kurie objektai turi aiškių tyčinių įpjovimų

ar stiprių įbrėžimų požymių, rodančių įvairią veiklą. Buvo sudėtinga nustatyti rūšis, kurios buvo naudojamos kaip žaliava figūrėlėms gaminti. Dažniausiai buvo naudojami patys paprasčiausi gyvūnai – briedis, taurusis elnias, šernas ir kt. Tačiau viena figūrėlė buvo pagaminta iš laukinio arklio kaulo, o trys, gal net keturios – iš ožkos ar šiaurės elnio kaulo. Arklys tuo metu Estijoje tikriausiai buvo retas, tačiau ožkos ir šiauriniai elniai tuo metu buvo už šimtų kilometrų. Galbūt egzotiška medžiaga šioms figūrėlėms suteikė papildomos vertės ar reikšmės.

Atsižvelgiant į radinių kontekstą, naudojimo ir nusidėvėjimo analizę ir kultūrinę aplinką, figūrėlės interpretuojamos kaip materialios pagalbos dvasių arba šamanų pagalbininkų, dalyvaujančių perėjime tarp gyvųjų ir mirusiųjų pasaulių, formos. Tikėtina, kad šie objektai buvo pridedami prie ritualinių drabužių ar apeiginės aprangos, taip pabrėžiant jų svarbą dvasiniuose ir atminimo ritualuose.

Nors toks Tamulos figūrėlių, kaip šamanistinių dvasinių pagalbininkų, aiškinimas suteikia vertingų įžvalgų apie priešistorinių laikų dvasinius tikėjimus, svarbu pripažinti, kad šios interpretacijos pagrįstos antropologinėmis analogijomis, kurios, nors ir svarios, gali neviseiškai atspindėti unikalų priešistorinių visuomenių kultūrinį kontekstą. Tikėtina, kad akmens amžiaus medžiotojų-rankiotųjų dvasinė pasaulėžiūra gerokai skyrėsi nuo šiuolaikinių šamaniškų kultūrų dvasinės pasaulėžiūros, o Tamuloje rasta materialinė kultūra leidžia pažvelgti į tikėjimo sistemą, kuri greičiausiai buvo platesnės tradicijos, apėmusios didžiąją Šiaurės ir Rytų Europos dalį, dalis.