

What is the motivation for the change? Comment on the article “Comb Ware cultures in the eastern Baltic” by Khrustaleva and Kriiska (2025)

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Introduction

Cultures dating to the Neolithic Stone Age have commonly been named after pottery types, which in turn typically derive their names from the location of their first discovery or from characteristic properties of the pottery (e.g., decoration, temper used in the clay paste, shape of the pots). Naming serves the need to distinguish particular material traits from the broader archaeological record and to enable the perception and analysis of larger cultural entities.

Many proposed names for pottery types have been short-lived, forgotten, or replaced by more suitable ones over time. Often, these names were originally intended as preliminary or ad hoc suggestions based on distinctive characteristics of the material. Only a few have become widely accepted and deeply rooted in research history. Typical Comb Ware is one such traditional pottery type, with a history of a century and multiple layers of meaning attached to it (Nordqvist & Mökkönen 2015).

The network discussed by Khrustaleva and Kriiska (2025) dating to the 4th millennium cal BC and beyond was active both in the Baltic States and in the northern part of the Typical Comb Ware distribution in Finland. It produced remarkably similar expressions of material culture across vast areas. In the article, the authors argue that the “porous wares” and associated material culture from the late 4th millennium cal BC onward should be included in the Comb Ware cultures. In this brief contribution, I present my assessment from a northern perspective.

Comb Ceramics in Finland

Although the term “Comb Ceramics” was introduced early on, Aarne Äyräpää’s (Europaeus-Äyräpää 1930) work on the typo-chronological division of Finnish Comb Ceramics found at different shore elevations had a groundbreaking effect on Stone Age archaeology. His classification of Comb Ware pottery into sequential styles is still largely valid. The Early Comb Wares (also called Sperrings 1 and 2 Wares, 5300–3900 cal BC; Nordqvist & Mökkönen 2016; Nordqvist 2018, table 1; see also Pesonen 2021), with their older and younger substyles, have remained relatively unchanged in interpretation (notably, Early Comb Wares are not found in the Baltic countries). Meanwhile, the chronological placement of the later Comb Wares – Typical and Late Comb Wares – has been both challenged and refined using radiocarbon dating.

Initially, individual radiocarbon dates from birch bark tar and crusts on sherds indicated substantial temporal overlap between Typical and Late Comb Wares in Finland (Leskinen 2003). However, recent Bayesian modeling suggests that the phases were sequential and did not significantly overlap (Pesonen 2021, 71, 90–94). It is worth noting that in Finland, Late Comb Ware is defined by its decoration, style, and organic temper in the clay paste, whereas in Estonia, the definition concentrates on the presence of organic temper.

Pottery types always exhibit some regional variation. While Typical Comb Ware is arguably the most coherent of the Comb Ware types, it still shows considerable regional differences (see Nordqvist & Mökkönen 2015; Mökkönen & Nordqvist 2017), such as in decorative tools and clay paste tempers. For example, in the northern Lake Saimaa area in Finland, potters incorporated asbestos into the clay paste and adopted vertebral impressions in decoration from the preceding Early Asbestos Ware tradition. In southwestern Finland, the use of organic temper in Typical Comb Ware likely reflects influence from the earlier and partly contemporaneous organic-tempered Jäkärlä Ware. Thus, the implementation of Typical Comb Ware was partly shaped by prior local traditions. Similar local influences have also been noted in regional variations within the widespread Corded Ware cultures (Furholt 2014).

Dating of Typical and Late Comb Wares

According to Bayesian modeling, Typical Comb Ware in Finland dates to 3820–3474 cal BC, and Late Comb Ware to 3540–3195 cal BC (Pesonen 2021, 71, 90–94). While numerous late radiocarbon dates are associated with Comb Wares in Estonia, Finland has only two unusually late radiocarbon dates from crusts and birch bark tar on Typical Comb Ware sherds. The younger of these, from the southern Lake Saimaa area, dates to 3300–2900 cal BC (Nordqvist 2018, 61, table 2; Pesonen 2021, 92).

The list of radiocarbon dates presented in Khrustaleva and Kriiska (2025, table 1) is somewhat perplexing. The dates span 3900–2400 cal BC and are described as “more or less reliably associated with the Comb Ware cultural context.” Only two dates from organic crusts attached to pottery are definitively linked to Comb Ware and both fall into the Typical Comb Ware phase dating to c. 3950–3660 cal BC. However, contextual information is lacking – there is no description of what kind of pottery is present in the dated contexts – making it difficult to evaluate the relevance of these dates to the broader discussion.

In coastal southern and southwestern Finland, Pyheensilta Ware (3200–2650 cal BC; Soisalo 2025) emerged just as Late Comb Ware was declining. Initially regarded as the final phase of Finnish Comb Wares, it is now considered a separate pottery type (Vikkula 1984). Pyheensilta Ware shares more traits with external influences than with preceding Comb Ware types.

“Pottery cultures”

Reliable chronological control is essential in archaeology. For a long time, Neolithic pottery types were key markers for dating sites and associated finds. Today, with radiocarbon dating providing more precise chronology, pottery has somewhat lost its dating role but remains vital for understanding cultural traditions. Pottery is a product of inherited craft traditions, and elements such as shaping, clay preparation, decoration, and tools used are all subject to change at varying rates. Regional variation or continuity within and between pottery types reflects the practices learned by potters.

The dominance of Typical and Late Comb Wares across their distribution areas was a relatively brief interruption in a longer continuum of regional ceramic traditions. In Finland’s lake district, the Ostrobothnian coast, and the eastern Gulf of Finland, asbestos- and organic-tempered potteries reappeared early: Kierikki Ware from 3650 cal BC (Mökkönen & Nordqvist 2017; Pesonen 2021, 94–95), and Pöljä Ware from 3300 cal BC (Nordqvist & Mökkönen 2021). After Typical Comb Ware, high variability in pottery became the norm in Finland, too. These later potteries show considerable regional variation in temper and decoration. For instance, by the Iijoki River in northern Ostrobothnia, Finland, the interaction between Typical Comb Ware and Kierikki Ware produced a local variant of organic-tempered Comb Ware (Mökkönen & Nordqvist 2017). Especially between 3500–3000 cal BC, many sites feature pottery that defies classification within known types (Pesonen & Leskinen 2009; Mökkönen & Nordqvist 2017, 97–98; Nordqvist 2018, table 2; Pesonen 2021, appendices I–II).

Typical Comb Ware is the one pottery type that fits well with the concept of a “pottery culture” – a broadly distributed pottery style seen as representative of an archaeological culture. Given the aim of Khrustaleva and Kriiska’s paper to revisit the criteria for defining Comb Ware cultures, pottery typology, however, cannot be excluded from the discussion.

Conclusion

All Neolithic cultures along the eastern shores of the Baltic Sea have been named after pottery types. Changing these established cultural labels is no simple task, especially in the case of Typical and Late Comb Wares, which are exceptionally rich in material culture. The typology – the very basis on which these concepts were originally constructed – cannot be ignored, particularly if the proposed redefinition includes new material categories and a revised chronological framework. It seems that typology was intentionally set aside in Khrustaleva and Kriiska's proposal, as it is likely that the inclusion of "porous wares" within Typical Comb Ware cannot be well justified based on pottery characteristics.

The terminological diversity used to describe Southern Baltic porous wares, as compiled by the authors, reflects a real need to differentiate "hybrid," "organic-tempered," or heavily Comb Ware-influenced wares from genuine Comb Wares. The use of terms such as "porous ware" and "Estonian Late Comb Ware" for the same materials highlights some similarities but does not justify classifying them as equivalent expressions of the same cultural phenomenon. Although this is not explicitly stated in the article, it can be inferred in this way.

The Typical Comb Ware period is marked by stylistic homogeneity and widespread use of flint. After this period, flint becomes scarcer and pottery more regionally varied – a point also acknowledged in the paper. However, too many non-contemporary phenomena – such as the Karelian wood-chopping tools, which are barely contemporaneous with Typical Comb Ware – are grouped under a single concept. While the paper's observations on flint distribution are useful, their significance depends on contemporaneity. Eastern sites rich in flint date to the Typical Comb Ware phase (prior to 3800–3650 cal BC), whereas western sites with little flint date to later periods (after 3500 cal BC). This contrast highlights the distinctiveness of the Typical Comb Ware period from what followed – underlining the difference between Typical Comb Ware and the later periods, and raising questions about what should be merged under a broad "Comb Ware" label.

It seems that Khrustaleva and Kriiska equate a contact network with a culture and downplay the variation in material culture to support this view. But why merge a relatively well-defined cultural entity with a collection of non-simultaneous material traditions? The motivation for redefining what is included in the Comb Ware cultures is not clearly articulated. Whatever the rationale, the discussion on Typical and Late Comb Wares is timely and welcome. In the future, rather than broad conceptual overviews, we need a series of well-dated regional studies that examine ceramic traditions, lithic production, and imported materials to illuminate the regional nuances behind these cultural developments.

DATA AVAILABILITY STATEMENT

All data are included within the article.

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References

Europaeus-Äyräpää, A. 1930. Die relative Chronologie der steinzeitliche Keramik in Finnland I-II. – *Acta archaeologica*, 1, 165–190, 205–220.

Furholt, M. 2014. Upending a ‘totality’: re-evaluating Corded Ware variability in Late Neolithic Europe. – *Proceedings of the Prehistoric Society*, 80, 67–86. <https://doi.org/10.1017/ppr.2013.20>

Khrustaleva, I. & Kriiska, A. 2025. Comb Ware cultures in the Eastern Baltic. – *Estonia Journal of Archaeology*, 29: 1, 72–105. <https://doi.org/10.3176/arch.2025.1.03>

Leskinen, S. 2003. On the dating and function of the Comb Ceramics from Maarinkunnas. – *Finskt Museum*, 1995, 102, 5–43.

Mökkönen, T. & Nordqvist, K. 2017. Kierikki Ware and the contemporary Neolithic asbestos- and organic-tempered potteries in north-east Europe. – *Fennoscandia archaeologica*, XXXIV, 83–116.

Nordqvist, K. 2018. The Stone Age of Northeastern Europe 5500–1800 calBC. Bridging the Gap Between the East and the West. (*Acta Universitatis Ouluensis B Humaniora*, 160.) University of Oulu, Oulu.

Nordqvist, K. & Mökkönen, T. 2015. Äyräpää’s Typical Comb Ware: an umbrella term for the early 4th millennium BC pottery in Northeastern Europe? – *Fennoscandia archaeologica*, XXXII, 151–158.

Nordqvist, K. & Mökkönen, T. 2016. New radiocarbon dates for early pottery in north-eastern Europe. – Traditions and Innovations in the Study of Earliest Pottery. Materials of the International Conference, St. Petersburg, Russia, May 24–27, 2016. Eds O. V. Lozovskaya, A. N. Mazurkevich & E. V. Dolbunova. Russian Academy of Sciences, Institute for the History of Material Culture, The State Hermitage Museum, Samara State Academy of Social Sciences and Humanities, St. Petersburg.

Nordqvist, K. & Mökkönen, T. 2021. Pöljä Ware: properties, dating and regional variation. – *Fennoscandia archaeologica*, XXXVIII, 29–58.

Pesonen, P. 2021. Continuity and Discontinuity in Early, Middle and Late Neolithic Pottery Types of Eastern Fennoscandia – Reflections from Bayesian Chronologies. *Unigrafia*, Helsinki.

Pesonen, P. & Leskinen, S. 2009. Pottery of the Stone Age hunter-gatherers in Finland. – *Ceramics Before Farming. The Dispersal of Pottery Among Prehistoric Eurasian Hunter-Gatherers*. Eds P. Jordan & M. Zvelebil. Left Coast Press, Walnut Creek, 299–318.

Pesonen, P. & Oinonen, M. 2019. The chronology of Jäkärlä Ware – Bayesian interpretation of the old and new radiocarbon dates from Early and Middle Neolithic southwest Finland. – *Documenta Praehistorica*, XLVI, 246–267. <https://doi.org/10.4312/dp.46.15>

Soisalo, J. 2025. The chronology of the Pyheensilta Group and Kiukainen Culture in Finland based on radiocarbon datings. – *Fennoscandia archaeologica*, XLII. <https://doi.org/10.61258/fa.160868>

Vikkula, A. 1984. Pyheensilta Ceramics – facts and theories. – *Fenno-Ugri et Slavi* 1983. Ed. T. Edgren. (Iskos, 4.) Suomen muinaismuistoyhdistys, Helsinki, 51–59.