Archaeologia Polona vol. 63: 2025, 79–105
PL ISSN 066-5924
DOI: 10.23858/APa63.2025.4133

Location, Location, Location: The Equivocal Interpretation of Spatial Patterns of the Corded Ware Culture in Northern Germany

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This paper examines the economic activities of Corded Ware Culture (CWC) communities in the region of Schleswig-Holstein (SH), Germany. It contextualises them within the concept of taskscapes as well as current discussions on mobility and migration. As a novel approach, it considers whether the spatial variation in battle axe deposition strategies – graves predominating in the west, and isolated finds in the east – may reflect the practices of mobile groups with distinct taskscapes, rather than entirely separate or differently behaving populations, as previously suggested. It is argued that the western part of SH functioned as a ritual core in a long durée, while the eastern regions functioned as economic zones. The known settlements take a position between the ritual and economic zones. The argument is made that the human groups were not static; instead, they continuously formed new and flexible social configurations. Ultimately, this mobile and dynamic spatial system is interpreted as a catalyst for the integration of individuals from diverse backgrounds, giving tangible form to the migrations associated with the CWC phenomenon.

KEY-WORDS: Funnel Beaker Culture, Corded Ware Culture, mobility, taskscapes, settlements, battle axe depositions

INTRODUCTION

This paper examines the spatial organisation of the Corded Ware Culture (CWC) in the German federal state of Schleswig-Holstein (hereafter SH) in northern Germany. While the occurrence of migrations in this period is now broadly acknowledged,

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Received 13 May 2025; Received in revised form 30 September 2025; Accepted 12 October 2025

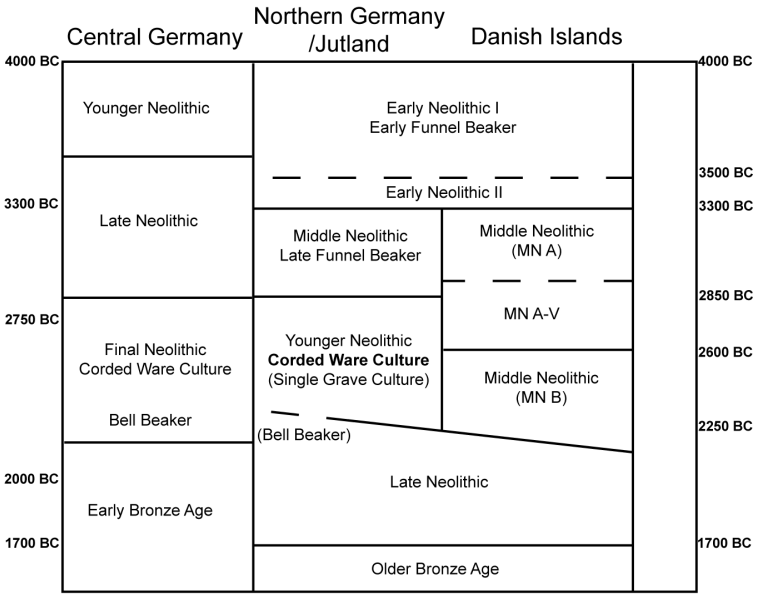

Fig. 1. Periodisation and main archaeological terminologies of the Neolithic of northern Germany in comparison to neighbouring regions.

the present challenge lies in uncovering region-specific dynamics and moving beyond oversimplified, culture-historical models in the tradition of Gustaf Kossinna (e.g., 1911; cf., Furholt 2021; Hofmann *et al.*, 2025: 13–15). For this, regional studies are crucial. For instance, Luka Papac *et al.*, (2021) have demonstrated from a genetic perspective the intricate interactions between newcomers and local populations during the initial formation of the CWC in Bohemia. In the Lower Rhine area, parallel societies have been proposed as a likely scenario (Kroon 2024; Bourgeois *et al.*, 2025), with similar suggestions emerging from Switzerland (Furtwängler *et al.*, 2019: 4–7) and eastern Denmark (Iversen 2015). At sites like Burgerroth in Bavaria, CWC material culture appears within contexts rooted in earlier Late Neolithic (central German terminology, cf., Fig. 1) traditions (Link 2025: 153). For Jutland and SH, recent research has proposed diverse local scenarios, reflecting varying interactions between newcomers and established populations, as well as differing degrees of adoption of new symbols versus adherence to older traditions (Schultrich 2023a; Madsen 2024; Nielsen 2024; Nielsen and Johannsen 2024). Moreover, an observation from Martin Furholt's study (2019) is noteworthy. He demonstrates from

a supra-regional perspective that early CWC-related symbols appear in highly diverse contexts: (category 1) in formal single graves, and (category 2) in settlements or re-used megalithic structures. Notably, category 1 appears to be more closely associated with steppe ancestry than category 2 (Furholt 2019: 118–120; cf., Haak *et al.*, 2023).

As such, a growing body of research explores the diversity of mechanisms, motivations, and consequences of human mobility in this period. All of these studies point to a level of complexity far exceeding that suggested by the pioneering ancient DNA analyses (e.g., Haak *et al.*, 2015; Kristiansen *et al.*, 2017). They underscore that each region followed its own historical trajectory and emphasise the central role of mobility in both the formation and further development of CWC societies.

Taskscapes

This paper engages with the concept of taskscapes, introduced by Ingold (1993) and subsequently adopted by many archaeologists (cf., Conneller 2010; Rajala and Mills 2017). In brief, taskscapes are dynamic social spaces shaped both consciously and unconsciously through human activities. These spaces are continuously redefined, thereby maintaining, but also enhancing and potentially altering their meanings over time. The surrounding landscape is also imbued with significance, as activities and movement extend into it and are, in part, dependent upon it (Conneller 2010: 185). To access taskscapes, therefore, it is essential to investigate the site level, its immediate surroundings, its relationship to the wider landscape, and its connections with other sites. Following critiques that the concept of taskscapes was "too romantic", later studies have shifted their focus toward political constraints (such as access and the display of power) that influence the shaping of both taskscapes and taskscape–landscape relations (Conneller 2010: 188). Because the concept of taskscapes acknowledges the character of different arenas of cultural reproduction and their interrelations within the broader landscape, it holds considerable potential for contextualising the spatial organisation of CWC communities in SH within broader debates on migration and mobility.

Approach and research questions

In light of the recent developments concerning regional differentiation outlined above, this paper re-evaluates the economic activities and modes of spatial organisation of CWC communities in SH, situating them within broader discussions on taskscapes, mobility, and migration. The analysis is structured around two central themes: (1) the high mobility of human groups, and (2) the regional diversity of processes associated with the transition to CWC societies. In particular, the paper revisits earlier observations (cf., Schultrich 2018a; 2023a) regarding

a distinctive spatial pattern: throughout the entire CWC phase in SH, graves – often containing battle axes – are concentrated in the western and central regions, whereas in the easternmost areas battle axes occur almost exclusively as isolated finds. The study poses the following questions: Are taskscapes discernible? Do spatial differences reflect the practices of mobile groups with distinct taskscapes rather than those of separate, locally bound populations? Moreover, what perspectives does this approach offer for understanding the transition from Funnel Beaker Culture (FBC) to CWC societies in SH?

CONTRASTS WITHIN THE CORDED WARE CULTURE IN SCHLESWIG-HOLSTEIN

The Role of Natural Factors

The landscape of SH can be broadly divided into three natural zones: the tidal flats in the west, the *Geest* in the centre, and the Young Moraine Drift region in the east. Each of these zones is characterised by distinct soil types and varying agricultural potentials.[1] Particularly relevant for this study is the difference in soil quality between the *Geest* and the Young Moraine Drift: the former, shaped by the Saale glaciation in the western part of SH, contains more heavily degraded soils, whereas the latter in the east offers more fertile conditions, which are favourable for modern agricultural use.

For a long time, the apparent absence of CWC houses and other settlement indicators led scholars to characterise CWC societies as mobile pastoralists, primarily engaged in cattle, sheep, or goat herding (cf., Hecht 2007: 193). The concentration of single graves in western SH – on the acidic, nutrient-poor soils of the Saale glaciation – seemed to support this interpretation. In this context, scholars argued that CWC groups had "contented themselves with the barren regions" (Schwantes 1939: 237), thus reinforcing the idea of an extensive, grazing-based economy. This narrative, however, emerged at a time when the chronological relationship between the FBC and the CWC was poorly understood. These two cultures were often viewed as contemporary but distinct, with minimal interaction. However, the known CWC settlements predominantly appear in the east (Fig. 2; see below). Moreover, the frequent appearance of FBC megalithic tombs in the same western regions shows the inconsistency inherent in this line of arguments.

Archaeobotanical evidence shows a decline in cereal diversity across many regions during this period, with barley (*Hordeum vulgare*) often emerging as the dominant

1 A recent summary of the formation and attributes of the landscapes see Feeser and Dörfler 2024; Wolters *et al.,* 2024a; 2024b.

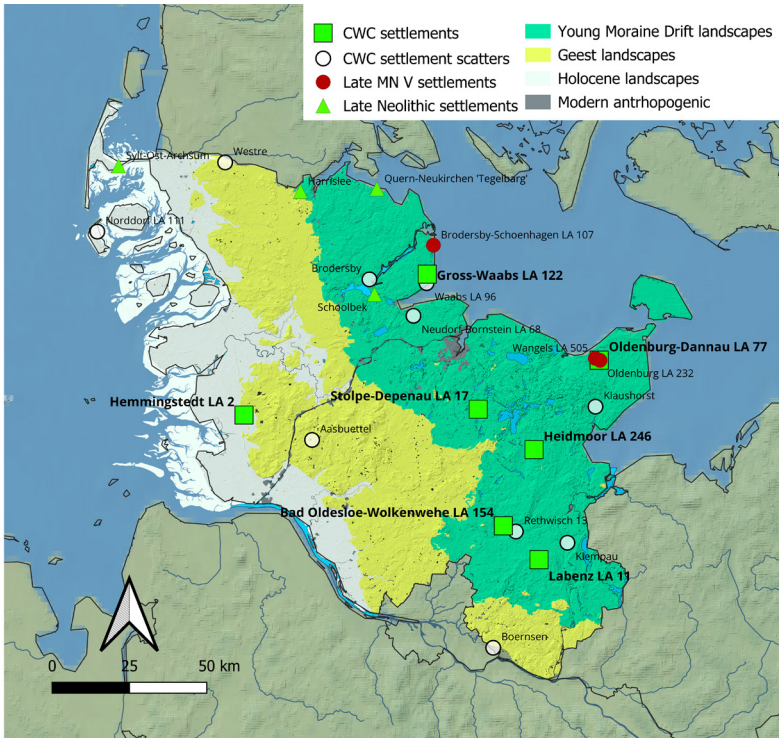

Fig. 2. Main geomorphological units and settlements in SH. Settlements CWC acc. Schultrich 2018a; and LN acc. Kleijne *et al.*, 2020. Geomorphology acc. Data licence Germany – Landesamt für Umwelt Schleswig-Holstein, Jan Willer – Version 2.0; https://umweltgeodienste.schleswig-holstein.de/WFS_OberflaechennaheGeologie?SERVICE=WFS&REQUEST=GetCapabilities

crop (see below). Since barley is more resilient and less demanding than wheat, it thrives even under harsh climatic conditions and on poor soils (Kirleis *et al.*, 2012: 230). This shift further supports the idea that environmental and economic factors played a key role in shaping CWC settlement patterns – especially in the less fertile western zones of SH. However, in recent decades, an increasing number of CWC settlements and house structures have been identified across Central and Northern Europe, indicating a more diversified economic base than previously thought (Hecht 2007: 193). Nevertheless, the image of CWC communities as primarily engaged in mobile livestock farming persists. The present paper provides a regional study-based perspective on this narrative by evaluating persisting spatial structures in the region of SH.

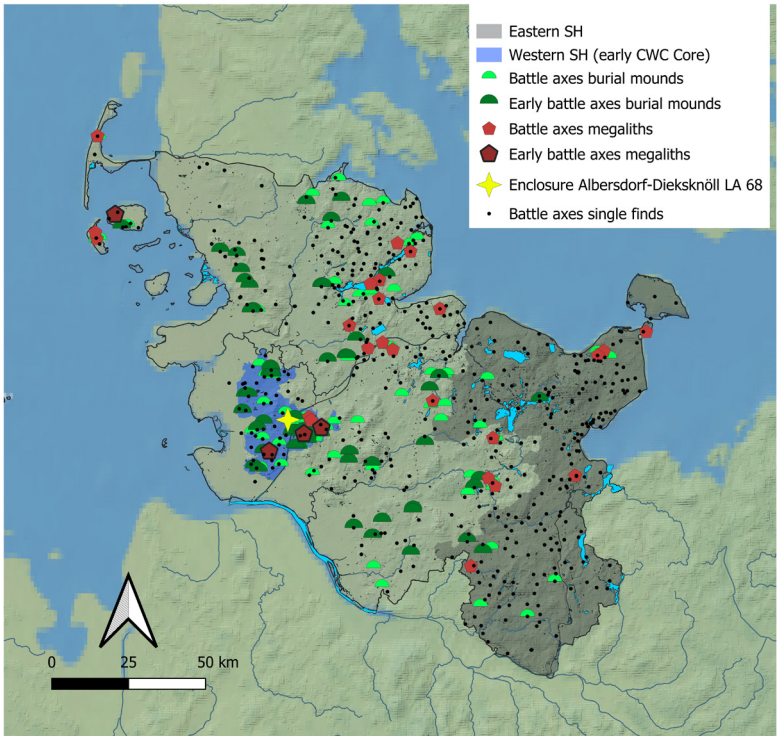

Fig. 3. CWC battle axes (*c*. 2850–2250 BC) from different contexts in Schleswig-Holstein. Two regions are marked: The southwest of the area, with many burials, single finds, and the enclosure; the easternmost parts (districts Ostholstein, Plön, Lübeck, Stormarn, and Duchy of Lauenburg).

Archaeological Phenomena in Western and Eastern Schleswig-Holstein

Recent maps illustrating the CWC on the Cimbrian Peninsula (Iversen 2015; 2016; Müller and Vandkilde 2020: 35, fig. 2: 3) distinguish two phases of CWC expansion, based on the distribution of early and later single-grave burials. These maps reveal a clear concentration of single graves in the western part of SH, a sparser distribution in the central zone – in the western part of the Young Moraine regions – and only a handful of graves in the easternmost areas (Fig. 3). Importantly, the much more even distribution of Bronze Age burial mounds across these same regions indicates that the observed CWC burial pattern is not simply a result of research biases.[2] However, the maps may inadvertently suggest that eastern SH was largely uninhabited during

2 Based on the unpublished database from the Archaeological State Office Schleswig-Holstein (cf., Kneisel *et al.*, 2023: 49).

Fig. 4. To the left, the relation of the number of battle axes from diverse contexts in the west and east of Denmark. Data for Jutland were calculated based on Hübner (2005) and Schultrich (2018), while the data for the Danish Islands are according to Iversen (2016). To the right, the proportions of early, middle and late battle axes found in the eastern parts of Denmark (acc. to Iversen 2016).

both the early and late phases of the CWC period. This impression arises because single finds – especially of iconic CWC artefacts, such as battle axes – were excluded from the datasets and explanatory models. Moreover, observations on the situation in Denmark prompted the interpretation in SH. In Denmark, much more CWC-related material appears in Jutland to the west, and very few finds have been made on the Danish islands (Fig. 4). Most of this material dates to the late CWC phase, implying a late expansion to the east (Iversen 2015; 2016). This idea was suggested for SH without checking the local situation in detail. The fact that megaliths were reused more often in the late CWC period and more often in the east (cf., Hübner 2005: 605; Schultrich 2018a: 36, 215) contributes to such a scenario.

However, as demonstrated in Figures 3 and 5, numerous battle axes (mainly single finds) are documented in the eastern and easternmost parts of SH, particularly in the district of Ostholstein. These findings clearly indicate that eastern SH was not a cultural void, neither in the late CWC period nor in the early CWC period. Instead, the lack of formal CWC single burials in this region requires an alternative explanation.

Both western and eastern SH witnessed the construction of megalithic tombs during the late Early and Middle Neolithic (*c.* 3650–3100 BC). However, as Ingo Feeser and Martin Furholt (2014) have shown, the patterns of land use during this period differed significantly between the two regions. In the east, megalithic construction is linked to pronounced land-use indicators in pollen records – especially the presence of *Plantago lanceolata* – suggesting intensive agricultural activity and, according to the authors, collective forms of organisation and production

Fig. 5. To the left, the relation of the number of battle axes from diverse contexts in the west and east of Schleswig-Holstein (west: Districts Dithmarschen, Steinburg, and Pinneberg, east: District Ostholstein). To the right, the proportions of early, middle and late battle axes found in the eastern part of Schleswig-Holstein (acc. to Schultrich 2018a).

(Feeser and Furholt 2014: 129–131). In contrast, this correlation is absent in the west, implying that while megalithic tombs were constructed there as well, they were not accompanied by a corresponding intensification in land use or collective action (Feeser and Furholt 2014: 133). Building on this, earlier interpretations (Schultrich 2018a; 2023a) proposed that the spatial differences observed during the CWC period reflected enduring divergences in social organisation. In this view, eastern communities, which refrained from using battle axes as grave goods and instead deposited them as isolated objects in the landscape, may have retained collective traditions rooted in earlier FBC practices (cf., Brozio 2025: 267). In contrast, western groups were interpreted as more receptive to innovation and inclined toward individualising burial customs.

However, this interpretation presupposes that the human groups remained geographically fixed and socially distinct for centuries. Such an assumption appears to contradict current models emphasising the high mobility and heterogeneity of CWC societies.

SPATIALLY DIFFERENT BEHAVIOURS?

What if the spatial differences observed in CWC practices in SH do not reflect distinct, tradition-bound groups, but instead point to mobile populations who used different taskscapes for different social or ritual practices? To explore this alternative, the following sections provide a brief outline of key lines of evidence related to mobility, environmental conditions, settlement patterns, and deposition strategies.

Mobility patterns during the 3rd millennium BC

The emergence of the CWC around 2900 BC is closely associated with large-scale migrations, as evidenced by the sudden appearance of novel genome variants in central European populations (Papac *et al.*, 2021; Haak *et al.*, 2023). In addition, multiple lines of evidence – ranging from strontium isotope analyses and ancient DNA to widespread material culture patterns – point to sustained supra-regional interaction and mobility across vast areas (cf., Furholt 2014; Sjögren *et al.*, 2016; Papac *et al.*, 2021).

As Claudia Gerling (2015: 230–241) has shown, even in earlier cultural contexts, such as the Globular Amphora Culture (GAC), individuals could traverse distances of up to 50 km as part of herding routines (cf., Müller 2023: 265). Janusz Czebreszuk and Marzena Szmyt (2011) further highlight the particularly high mobility of CWC-associated populations in the Polish Lowlands. One notable distinction from GAC societies lies in the absence of fixed burial grounds for the CWC, suggesting a more fluid and possibly seasonal pattern of movement among small, kin-based groups.

Beyond herding and economic necessity, social practices such as exogamy, child exchange, and other forms of interpersonal connectivity – driven by both "push" and "pull" factors – played key roles in shaping mobility patterns (see Hofmann *et al.*, 2024; Stockhammer 2025; Högberg *et al.*, 2025). These dynamics challenge models that rely on stable, localised communities. In this context, Furholt's (2016; 2017) conceptual model of mobile societies becomes particularly relevant. Drawing on spatial sociology (especially Hillier and Hanson 1984), Furholt argues that residential and social groups need not be identical. Instead of sedentary, kin-based village structures, individuals may have moved between loosely connected, temporary communities, maintaining far-reaching social ties across regions. This translocal organisation, he proposes, was especially pronounced during the 3rd millennium BC. Such a model helps explain the striking homogeneity of the CWC's material and symbolic repertoire across Europe. When social networks span long distances, social proximity can be maintained even over geographic separation. People across the vast CWC distribution may have been linked through just a few intermediary contacts ("knots"), which facilitated the circulation of ideas, practices, and technologies. Shared symbols – such as pottery styles, burial practices, and tools – would have served to reinforce a sense of cultural connectedness and mutual understanding across these networks. Furthermore, processes such as exogamy, wet nursing, child mobility, trade relations, and even conflict (cf., Stockhammer 2023; 2025; Hofmann *et al.*, 2024) are all consistent with Furholt's translocal community model. These various mobility patterns open

the door to considering differentiated behaviours among individuals and groups. Some may have travelled over large distances, while others may have remained within smaller, seasonally used territories, as also indicated by the study of Bourgeois and Kroon (2023). Periodic long-distance gatherings – perhaps for funerary or ritual activities – may also have played a role in maintaining cultural cohesion across regions.

Pollendiagrams and land-use patterns

Pollen archives provide insights into landscape use over the long durée and, consequently, into the development of spatial practices during the transition to and throughout the CWC period. In SH, however, these archives are unevenly distributed, with significantly more profiles available in the east than in the west (Feeser *et al.*, 2019: 1589, fig. 1), which complicates direct comparison. Alongside the proportion of distinct wood species, the proportion of *Plantago lanceolata* is a reasonable estimate for reconstructing land-use and its changes. It grows on open lands, and its increasing presence indicates open lands for animal grazing and crop growing (as it grows on wastelands).

In the western region, where most CWC burials are found, only one relevant profile from Horstenmoor is available. It shows no interruption in open-land use between the latest FBC and early CWC period. However, a local minimum of *Plantago lanceolata* is observed at approximately 3200/3100 BC, with subsequent increases in values. From around 2400 BC, cereal pollen increased, suggesting intensified or altered land use (Feeser and Furholt 2014: 128; 2016: 24).

Based on a few lakes and bogs, there is a standard diagram for the Young Moraine landscape of eastern SH and western Mecklenburg (Feeser and Dörfler 2024). Between *c*. 3150–3000 BC, it shows a brief phase of forest regeneration, followed by a renewed increase in open-land indicators like *Plantago lanceolata*, which persist until about 2400 BC – suggesting small-scale, varied land use throughout the CWC period – with different local anomalies. In the profiles of the lakes Poggensee and Seefelder See, along with the increasing open land from 3000 BC, *Cerealia* also appears, indicating an increase in land use and crop growing (Feeser and Dörfler 2012: 178; 2024). Especially in the southern part of the study area, signs of more intensive land use emerge at the onset of the CWC period (Feeser *et al.*, 2012: 187; cf., Feeser and Dörfler 2024). In the on-site profile from Bad Oldesloe-Wolkenwehe LA 154, cereal pollen (as indicative of processing at the site) drops around 3000 BC, while *Plantago lanceolata* (possibly a regional signal) increases sharply after 2800 BC (Fig. 6) – alongside high charcoal values, possibly indicating slash-and-burn activities (Feeser and Dörfler 2019: 202; Brozio 2025: 265). This coincides with hut

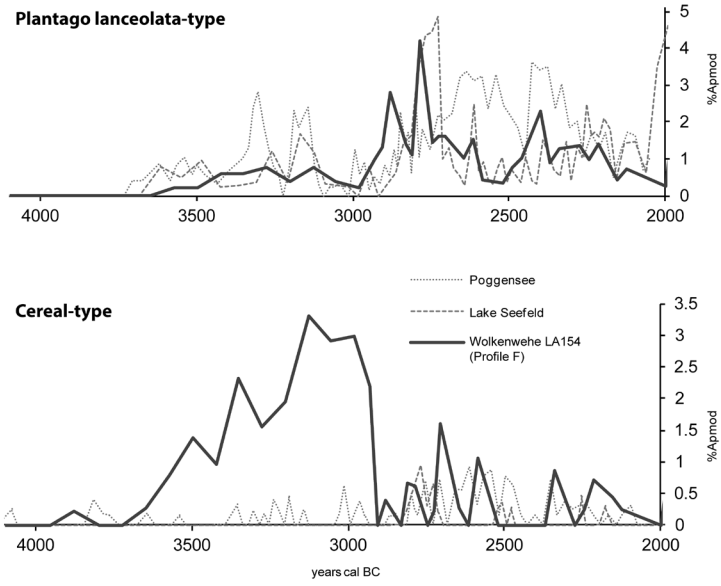

Fig. 6. The relative abundance of *Plantago lanceolata*-type and cereal-type pollen from Bad Oldesloe-Wolkenwehe LA 154 and the pollen profiles of Lake Seefeld and Poggensee (Feeser and Dörfler 2019: fig. 23; Brozio 2025: 265).

constructions in the area (*c.* 2750 calBC[3]; Mischka *et al.*, 2007: 40), pointing to significant shifts in settlement and land use. However, it is unclear whether the land use is associated with grazing or agriculture in the surroundings, as indicators of animal dung are lacking. Such an indicator – *Coprophilous fungi* – has been observed at Poggensee during the entire CWC period, clearly pointing to ongoing grazing activities there (Feeser *et al.*, 2012: 185).

Summing up, despite the limited number of available archives, it is possible to identify different patterns of landscape use, including their alterations, which may be understood as indicative of taskscapes. The general line is that everywhere pollen profiles are available, open land for grazing and crop growing can be documented for the CWC period. In the east, a short interruption of activities is documented for the late FBC period, which ends, however, before the CWC potentially emerges. As

3 KIA-30915: 4150+-29 (*Alnus*), 2870–2670 cal. BC. KIA30914: 4188+-38 (*Alnus*), 2890–2690 cal. BC (Mischka *et al.*, 2007).

such, the FBC-CWC transition is relatively continuous everywhere. This point becomes more apparent when examining settlements and economic activities.

Settlements

Notwithstanding the potential for bias arising from the probability of finding, Figure 3 provides compelling evidence that the eastern region of SH was subject to significantly more intensive settlement activity compared to the western region. A juxtaposition of the distribution of burial sites (Fig. 3) with the settlement patterns reveals an interesting phenomenon. The settlements appear to be situated at the periphery of the primary burial areas. The only striking exception to this is the area of the Oldenburg ditch (Oldenburg-Dannau LA 77 on Fig. 2). While multiple contemporaneous houses characterise the late FBC in SH at several sites (Brozio 2016; Hage 2016; Müller 2019), evidence for multiple structures during the CWC period has so far only been documented at Bad Oldesloe-Wolkenwehe LA 154. Additional indications of huts come from Labenz LA 11 and Heidmoor LA 246 (Fig. 1), while a single house structure was found at Stolpe-Depenau LA 17. Beyond these, proper two-aisled longhouses appear in the Late Neolithic from *c*. 2200 BC (cf., Kleijne *et al.*, 2020). This scarcity of settlement evidence is paralleled across the North European Plain. For instance, in Jutland, only a few tent-like structures dating to the early and middle CWC are known. As in SH, post-built houses become more common towards the Late Neolithic; however, this process starts slightly earlier than in SH in a late CWC context (Sarauw 2006; Siemen 2008). A similar developmental trajectory is observed in the Polish Lowlands and southeastern Poland (Czebreszuk and Szmyt 2011: 262; Włodarczak 2017: 289). The small size of house structures may be directly related to the small size of the groups. While many construction steps can be performed by a few individuals, erecting large façade posts requires a larger group. Paula Dieck (2014) calculated that constructing the FBC house from Rastorf, SH (3500–3300 BC), required 28 participants, whereas a smaller house from Hornstaad-Hörnle, Switzerland (3912/3911 BC), could be built by only two people (2014: 271). Accordingly, the absence of substantial house structures in SH during the CWC period can be interpreted as a further indicator of small-sized groups. In this context, the numerous scatter finds in SH are particularly noteworthy (cf., Schultrich 2018a: 55–56), as they are not associated with permanent structures[4] and likely represent short-term

4 E.g., at the site of Westre, North Frisia, a private person collected many finds including diagnostic flint axes, but the excavation did not reveal anything (unpublished: https://www.archiv.sfb1266.uni-kiel.de/en/projects/cluster-c-horticulturalists/c1-neolithic-transformations-1/research-activities-2016-2020?set_language=en, accessed April 24, 2025.)

occupations involving lightweight constructions – a parallel to observations from the Polish Lowlands (Czebreszuk and Szmyt 2011).

The situation in Lower Saxony shows some variation. Only a few settlements are known, but the sites of Heede (Emsland) and Hunte 1 (Dümmer) feature post-built longhouses measuring up to 10 meters in length (Hecht 2007: 130–133), implying the involvement of larger construction groups (cf., Dieck 2014). Both sites have yielded material from the late FBC and the CWC (Hecht 2007: 130–133). Notably, the settlement at Hunte 1 is also associated with a palisade.[5] In contrast, the nearby site of Hunte 4 – located 2.5 km from Hunte 1 and containing CWC and Bell Beaker material – shows no evidence of permanent structures and is likely to have been a repeatedly visited temporary site. Together, these sites indicate a broader settlement system composed of one or more permanent locations surrounded by ephemeral activity sites (Brozio *et al.*, 2023). In the Netherlands, the number of documented CWC contexts is significantly higher. Here too, evidence suggests a system of settlements used for different purposes, including specialised hunting or fishing camps (Nobles 2015: 306–308). Gary Nobles (2015) proposes that individual households operated multiple camps for distinct tasks. To evaluate whether such a system is plausible for SH, it is necessary first to introduce the economic practices attested at the settlements.

Economy

Diverse structures and practices characterise the settlements. The data indicate that, in addition to flint tool production – which is present at nearly all sites – both domesticated and wild animals and plants were utilized (Table 1). Consistent with data from Denmark, the CWC period appears to be associated with a narrower crop spectrum compared to the FBC period and the subsequent Late Neolithic period (Møbjerg *et al.*, 2007; Kirleis *et al.*, 2012: fig. 3). At some Danish sites, an increasing significance of barley (*Hordeum vulgare*) has been documented starting in the late FBC (MN V; Andersen 1997: 123; Rasmussen 2016: 152) and continuing into the CWC period (Møbjerg *et al.*, 2007; Kirleis *et al.*, 2012). Both in Denmark and SH, Emmer (*Triticum dicoccum*) was the second most common cereal. At the same time, common wheat (*Triticum aestivum*) and pea (*Pisum sativum*) also appear in minor quantities (Kirleis *et al.*, 2012: fig. 4). The use of wild plants is evident, for instance, at the settlement of Bad Oldesloe-Wolkenwehe LA 154, where charred seeds of water lily (*Nymphaea*), yellow pond lily (*Nuphar*), and club rush (*Schoenoplectus*) were found (Kirleis *et al.*, 2012). At Labenz LA 11, a range of wild plant species typical of the surrounding bog environment was identified (Brozio *et al.*, 2021). Among domesticated animals, cattle,

5 The palisade around the settlement was built between 2837 and 2744 BCE (Brozio *et al.*, 2023).

Table 1. The settlement sites of the CWC period of SH. Economic activities are indicated with 1–7. 1 – Flint tool production / 1.1 specialised tools (daggers). 2 – Keeping domesticated animals / 2.1 processing, 2.2 stockbreeding in the surroundings. 3 – Processing of wild animals / 3.1 hunting (arrowheads). 4 – Cereal production / 4.1 direct / 4.2 indirect / 4.3 cereal processing. 5 – Gathering and use of wild plants. 6 – Fishing fish / processing mammals. 7 – Salt production.

NAME	DATING	ACTIVITIES	HOUSES	INFORMATION	REFERENCES
Labenz LA 11 (Wohnplatz 15)	2700–2500 BC	1, 2.1, 2.2, 3, 3.1, 4.3, 5	Light huts (indirectly)	Especially sheep/ goat. Wildplants typical taxa from boggy areas.	Brozio *et al.*, 2021
Bad Oldesloe--Wolkenwehe LA 154	4000–1000 BC). CWC phase 2900–2500 BC (peak 2800–2750 calBC)	1, 2 (2.1+2.2), 3, 3.1, 6, 7?,	Light huts/ tent-like structures	Not all activities are to be differentiated chronologically.	Schwabedissen 1958; Mischka *et al.*, 2007; Hinz 2014; Brozio 2016
Heidmoor LA 246	Late Mesolithic to Late Neoltihc (>4000 BC–1900 BC).	1, 3.1 (2, 3, 6)	Light huts/ tent-like structures	Many activities indicated, but unclear chronologically (and many probably Meso- or early Neolithic). A lot of 'Heidmoor pottery' (wave mould beakers).	Schwabedissen 1958; Clausen 1996
Stolpe-Depenau LA 17	2800–2200 BC, peak 2500 – 2200 BC.	3.1, 4.1, 5	Rectangular house 8.4 x 5.4 m. Wall trench with splitted woods: "*Schwellen-balkenbau*".	House similar to FBC houses of Flögeln and MN-V houses on Bornholm (cf. Mennenga 2017).	Harten *et al.*, 2011; Schultrich 2018a: cat. 817
Oldenburg LA 77	Main occupation 3200–2900 BC, re-visited in middle/late CWC.	2. Many activities, but unclear for the CWC phase.	Unclear for CWC	Stone-clubhead with preserved shaft (^{14}C: 2470–2341 calBC).	Brozio 2016

NAME	DATING	ACTIVITIES	HOUSES	INFORMATION	REFERENCES
Groß-Waabs LA 122	Transition CWC to LN (*c.* 25/2400 – 2300 BC)	1, 1.1, 3.1	Scatter	Pseudo-Grand--Pressigny dagger production site	Arnold 1985; Schultrich 2018a
Hemming-stedt LA 2	Middle to Younger Neoltihc (^{14}C: 2890–2470 calBC)	1	Houses and ard-marks however FBC-phase.		Krause-Kyora 2008; Schultrich 2018a
Wangels LA 505	Transition FBC/CWC (2900–2600 BC)	1, 2.1, 3, 3.1, 4.1, 5, 6	Indication of a massive house.	Almost no diagnostic CWC finds, only a sherd of wave mould beaker. ^{14}C indicate an early CWC--period date.	Klooß 2008
Brodersby--Schönhagen LA 107	Late FBC (overlapping with early CWC)	1	Scatter (no structures)		Brozio *et al.*, 2019a
Oldenburg LA 232		3.1	Various activites earlier phase, but CWC only few indications		Brozio *et al.*, 2019b

sheep/goats, and pigs were all present in significant numbers. Notably, by the end of the 4th millennium BC, domesticated animals accounted for approximately 90% of all faunal remains at the sites. Around 3000/2900 BC, this proportion declined to about 60% (Brozio 2025: 266). Moreover, at three sites located near lakes or the sea, the processing of fish and/or marine mammals is documented (Table 1). Some sites stand out due to their specific functions. Bad Oldesloe-Wolkenwehe LA 154 was a seasonally occupied, non-permanent site with a specialised role within a broader settlement network. Because the River Trave seasonally flooded the area, it was only inhabitable at certain times (Mischka *et al.*, 2007). After an initial phase of intensive grain cultivation near the site – indirectly indicated by pollen data – there is no further

evidence of grain production or processing from around 2900 BC. In contrast, land openness values increase markedly from circa 3000 BC, indicating a significant shift in land use (Feeser and Dörfler 2019: 202; Brozio 2025: 264–266). The proportion of domesticated animal bones is around 65%. Interestingly, pigs (*Sus scrofa*) dominate among the domestic species (Mischka *et al.*, 2007: 61), a pattern also observed at sites in Central Germany and Switzerland (Hecht 2007: 229), and generally interpreted as indicative of more permanent settlement patterns (Hecht 2007: 193). The presence of unexplained ditch structures further suggests that the site served a special function (Mischka *et al.*, 2007: 61). In this context, the nearby brine springs are noteworthy, potentially indicating salt extraction activities, although definitive evidence is lacking (Brozio 2016: 202). Another noteworthy site is Groß-Waabs LA 122, a specialised camp for the production of Pseudo-Grand-Pressigny flint daggers (Arnold 1985; Fig. 1). This site is located near the Baltic coast, where large flint nodules are still scattered across the stony beach (cf., Hughes *et al.*, 2012).

The simplistic notion that CWC-related groups exclusively settled in western regions due to soil suitability for their subsistence strategies must be reconsidered. Firstly, most settlements appear in the east. Secondly, the alleged focus of pastoral activities must be questioned, as the number of wild animal taxa increases at the onset of the CWC period (Brozio 2025: 265). Thirdly, the pollen profiles indicate that during the CWC period, cereals were grown both in the west and the east (see above). In this regard, also the assumed correlation between poor soils and barley cultivation does not hold under closer scrutiny, as both CWC and FBC contexts exhibit a preference for sandy soils, likely due to their ease of cultivation (Sherratt 2004: 422; Hecht 2007: 98; Hinz 2014: 65). As noted above, in the CWC contexts of Lower Saxony and the Netherlands, a spatial pattern emerges in which camps with differing architecture, economic activities, and durations can be identified. This has been interpreted as evidence that individual households operated multiple camps for distinct tasks (Nobles 2015: 306–308). A similar system is suggested by the limited but diverse dataset from SH: settlements with house features and short-lived scatters coexisted, and individual sites appear to have been specialised. In addition, several pollen records indicate the presence of extensive open land suitable for grazing and cereal cultivation. Taken together, these observations suggest the existence of multiple taskscapes, interconnected within a broader taskscape-landscape. A key question is whether such a system was also subject to political restrictions. The deposition of battle axes may offer a critical perspective for investigating this issue, serving as potential evidence of practices related to access, control, or the display of power within and between taskscapes.

Battle axe depositions as a claim on pastoral land?

It is now widely accepted that single finds of Neolithic stone tools may represent intentional individual depositions (cf., Müller 2024), much like the single finds of copper and bronze artefacts from the Neolithic and Bronze Age (cf., Hansen 2002). Numerous interpretations have been proposed regarding the significance of such artefact depositions for various prehistoric societies (e.g., Müller 2024: 438–444). One particularly compelling idea is that these depositions served to mark the landscape or even to claim territory on behalf of specific groups. More broadly, they may be understood as symbolic expressions of political restrictions governing access to and use of taskscapes.

For example, Jeanette Varberg (2015) discusses this interpretation in relation to the deposition of flint daggers in southern Scandinavia and northern Germany. Such acts of marking the landscape are broadly linked to the phenomenon of prehistoric hoards, which may have structured the land by associating it with memory and meaning (cf., Ballmer 2010). Josef Winiger (1998) observed that from the 4th millennium BC onwards, individual finds of tools and weapons began to appear on grassy highland pastures above the forest line in the western Alpine region (1998: 224; cf., Guilbeau 2015 for the Italian Alps). At the same time, faunal and environmental data point to a shift in pastoral practices – becoming more intensive, more focused on cattle and sheep/goat, and increasingly mobile (cf., Gerling *et al.*, 2017). These higher altitudes were likely used more systematically for grazing, and Winiger (1998) interprets the associated artefact depositions as being directly linked to this new spatial-economic system. The objects were deposited in areas regularly used in everyday pastoral routines. In a similar vein, Robert Hoffmann (in prep.) has identified a rise in both the number and altitude of flint axe depositions in Michelsberg contexts (4400–3600 BC) in the Westliches Mittelgebirge region (Rhineland-Palatinate, North Rhine-Westphalia, Hesse). He likewise interprets these findings as evidence for intensified pastoralism and the expansion into previously unused areas for grazing.

Considering the location of the settlements and burial areas of SH, there is a kind of tripartite spatial system in the eastern part. The burials appear in the Geest and western Young Moraine Drift landscape, while the settlements are located at the eastern edge of the burial areas. East of that, numerous single finds have been discovered. Pollen profiles from several sites indicate the presence of open landscapes and suggestive indicators of pasturing and wastelands. The frequent single finds of battle axes throughout the region – some in proximity to settlements or burials, but many in isolated locations far from any known context – may likewise be interpreted as intentional depositions within a landscape actively used by CWC communities for their economic activities.

This interpretation contrasts with earlier views (Schultrich 2018a; 2018b; 2023a), which proposed a cultural taboo among eastern CWC groups concerning the inclusion of battle axes in graves. Instead, these objects may be understood as markers of pastoral use and territorial claims within an economically structured and symbolically charged landscape. In this sense, the depositions are linked to the political significance of the taskscape concept: they demarcate boundaries, signal rights, and potentially reflect unequal access to specific areas. The persistence of this pattern from the early to the late CWC, and beyond into the Late Neolithic (cf., Schultrich 2023b), demonstrates the longevity of taskscapes.

CONSEQUENCES

The spatial patterns observed during the CWC period in SH warrant a fundamental reinterpretation. Rather than indicating culturally distinct and independently acting groups in the west and east, the evidence supports a model in which the landscape was structured into overlapping taskscapes – spatial zones defined by their function within a shared socio-economic system.

Throughout this paper, various types of sites have been discussed: small, short-term camps, more substantial and repeatedly used locations, and highly specialised activity areas. These include sites for fish and mammal processing, pig keeping, flint dagger production, and possibly salt extraction. Individuals or small groups may have moved seasonally or according to specific tasks, while others remained at more permanent or semi-permanent settlements focused on cereal cultivation or husbandry. This mosaic of use implies flexible group compositions, changing in response to task, season, or socio-political context. Local de- and increases of human activity in the pollen profiles may be a consequence of mobile groups. Renate Ebersbach's (2010) model for lakeshore settlements in the western Alpine Foreland resonates with this interpretation. Her basic idea is that the local residence group is not fixed and there is a dynamic re-arrangement during the formation of short-lived settlements at different places with households forming the basic units (2010: 198–202). Similarly, Nobles (2015) has shown that mobile households in the Dutch CWC context used different camps with specialised functions. Furholt's (2016) suggestion to move beyond the household as a static social unit is particularly useful here. Instead, we might envisage short-lived groupings – sometimes even just individuals – mobilising for specific activities. Within this framework, mobility becomes a core principle of social organisation. This model aligns with other mobility aspects, such as exogamy, seasonal movement, childhood relocation, or travel linked to trade, alliance, or conflict.

The landscape was not divided by rigid group boundaries; rather, enduring taskscapes shaped it.

This interpretation also sheds new light on ritual behaviour. As shown earlier, the eastern SH enclosures were abandoned by the end of the 4th millennium BC, in line with many FBC enclosures elsewhere (Müller 2019: 60). In contrast, the western enclosure at Albersdorf-Diekskнöll LA 68 was re-used well into the 3rd millennium BC (Dibbern 2016: 49–50; Schultrich 2023a: 285–286). This persistence undermines previous interpretations of a cultural separation (Schultrich 2018a; 2023a), according to which the western groups were more open to innovation while eastern groups adhered to tradition. If the absence of burials in the east reflects conservatism, why then was a traditional enclosure maintained only in the supposedly "innovative" west? Rather, the distribution of settlements and ritual areas across SH suggests a high degree of spatial differentiation and mobility. In fact, the situation in SH, especially in the southwest, contrasts with that in the Polish Lowlands (cf., Czebreszuk and Szmyt 2011). In SH, we see fixed ritual centres revisited over generations, as attested by the density and continuity of burial mounds (Fig. 3; Hübner 2005: 468; Schultrich 2018a: 26). This suggests that, despite high mobility and functional diversity in daily life, ritual practices were tied to specific locations that retained long-term significance.

Within the concept of taskscapes, the landscape is understood as a space imbued with meaning (Ingold 1993; Conneller 2010). The repeated performance of tasks over generations contributes to the maintenance of specific activities in designated areas. As a result, a complex taskscape–landscape network emerges. In SH, this network includes the long-term ritual centre in the west, the sustained use of central-eastern areas for settlements, and extensive grazing areas – often associated with battle axe depositions – in the east.

It remains unclear whether political restrictions were in operation, although their presence is suggested by the distribution of battle axe depositions and the ritual centre. The latter is related to specific customs of the northern branch of the CWC. Particularly during the early and middle phases, it is characterised by a strong predominance of male graves (Hübner 2005: 632). Despite potential biases in the identification of female graves (cf., Furholt and Burmeister 2023: 221), the contrast with other CWC groups remains striking. The pattern provides a framework for the discussion of social differences, which may be linked to rights concerning burial in specific locations. Thus, the taskscape-landscape of SH provides significant potential for exploring issues of unequal rights at both the individual level (graves) and the group level (depositions within the economic landscape).

In summary, rather than distinct cultural entities, the archaeological record in SH points to a socially and spatially dynamic system of mobile groups using the entire

landscape for different tasks. The landscape is composed of different taskscapes, in which mobility, cooperation and political restriction, as well as memory, played crucial roles in shaping a complex spatial organisation.

CONCLUDING THOUGHTS: THE TRANSITION TO CWC SOCIETIES

The questions posed at the outset have been partially addressed: enduring taskscapes are discernible, and they likely reflect the practices of mobile groups rather than those of separate, sedentary populations. What remains to be explored is whether, and in what ways, the approach adopted in this paper can shed light on the transition from FBC to CWC societies in SH. When the late 29th century BC is taken as a chronological benchmark for the onset of the CWC, the evidence indicates that most major changes had already occurred before the formal onset. Fundamental shifts in settlement activities – characterised by a move towards more extensive land-use systems and more dispersed, short-lived, and mobile settlement systems, including a reduction in the number and size of sites and a decline in permanent house structures – already emerged during the late FBC period (cf., Brozio 2025). These developments temporally coincide with what has been referred to as the "Neolithic Decline" (cf., Hinz *et al.*, 2012: fig. 3; Feeser *et al.*, 2019: figs 5–6), for which climate change and the outbreak of plague (*Yersinia pestis*) have been proposed as potential drivers (Rascovan *et al.*, 2018). Currently, there are recent studies that both support the occurrence of such an outbreak in the Neolithic (Seersholm *et al.*, 2024) and studies that do not confirm this interpretation (Susat *et al.*, 2024). Anyway, palaeoenvironmental data from lakes and bogs – both near-site and off-site – suggest that, despite regional variability, a few centuries after the "Neolithic Decline", the transition to the CWC was marked by continuity rather than abrupt change. In line with recent aDNA research, the focus has shifted away from questioning whether migration occurred to examining how it occurred and how it interacted with local social dynamics (Nielsen 2024: 403; Bourgeois *et al.*, 2025). The archaeological and theoretical evidence presented here suggests a model in which incoming groups were integrated into already flexible, mobile, and socially dynamic communities.

Mobile societies are often characterised by flat hierarchies and open "membranes" – a greater receptiveness to new ideas and people (Rogers 1995: 289; Furholt 2016; 2017). Rather than a scenario of abrupt population replacement, the data from SH support a more nuanced process of cultural and demographic integration. Many FBC traditions were carried over into the CWC, such as flint axe production techniques and typological developments (cf., Iversen 2015; Schultrich 2018a). In southwestern SH, long-used path systems dating back to the Early Neolithic I (4000–3500 BC)

remained in use during both the FBC and CWC periods (Dibbern 2016: 163–165, 170). The same applies to ritual spaces such as the Albersdorf-Dieksknöll enclosure (LA 68), which continued to be used throughout the 3rd millennium BC (Dibbern 2016: 46–50). Even some megalithic graves were reused in the early CWC (Schultrich 2018a: 35–36), though the specific practices differ from those in the Lower Rhine area, where CWC pottery was deposited in accordance with FBC conventions (Bourgeois *et al.*, 2025: 297–298). In SH, CWC battle axes were integrated into earlier burial contexts (Schultrich 2018a: 35–36, 215), likely reflecting a selective adoption of new symbols within enduring ritual frameworks – similar to the syncretic dynamics described by Furholt (2020) for CWC groups in Mecklenburg-Western Pomerania. Consequently, the system of mobile and open societies facilitated the incorporation of new ideas and individuals of foreign descent, yet it also contributed to the visible continuities. The area under discussion thus demonstrates a distinct manifestation of syncretism, a phenomenon that stands in contrast to models of parallel societies, as evidenced in the Lower Rhine region (Kroon 2024; Bourgeois *et al.*, 2025).

In conclusion, the evidence strongly suggests that human mobility was high and that various areas within SH were utilised for a wide range of spatially and functionally distinct purposes – a landscape composed of interacting taskscapes. The western part of SH retained its character as a ritual core, while the eastern regions functioned more as economic zones, as evidenced by the widespread deposition of battle axes. The known settlements take a position between the ritual and economic zones (Figs 2 and 3). Due to ongoing social reproduction, the taskscapes-landscape remained largely unchanged for centuries. The observed regional differentiation persisted well beyond the CWC period, extending into the Late Neolithic (23/2250–1700 BC), when flint daggers and metal artefacts (especially flanged axes) were buried in western graves, while similar items appeared primarily as single or hoard finds in the east (Schultrich 2018b). Remarkably, this east-west pattern seems to have continued into the Early Bronze Age (Periods I and II, 1700–1300 BC), as seen in the distribution of bronze daggers, axes, and swords (Schultrich 2023b). Thus, we are not dealing with a cultural rupture but with a long-term continuity of spatial practice and symbolic taskscape-landscapes, largely unaffected by broader ideological or technological changes over the course of several centuries.

ACKNOWLEDGEMENTS

This article was written in the framework of the Excellence Cluster ROOTS – Social, Environmental and Cultural Connectivity in Past Societies, with funding from the Deutsche

Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2150–390870439 and the Collaborative Research Centre 1266 'Scales of Transformations' (DFG project number 2901391021 - SFB 1266). I would like to thank the two anonymous reviewers for their valuable feedback.

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