The dog motif in the Corded Ware Culture: The practice of placing dog remains with human remains in burial context in relation to the dog-human relationship in third millennium BC Central Europe

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Image reference:

Left: Müller, U. (2011). Gräber der Schnurkeramiker. In H. Meller (Ed.), *Kultur in Schichten: Archäologie in Autobahnreieck Südharz (A71)* (p. 94). Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt.

Right: Meller, H., Muhl, A., & Reichenberger, A. (2008). *Lebenswandel: Früh- und Mittelneolithikum. Begleithefte zur Dauerausstellung im Landesmuseum für Vorgeschichte Halle Band 3* (p. 208). Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt.

Title page

The dog motif in the Corded Ware Culture

The practice of placing dog remains with human remains in burial context in relation to the dog-human relationship in third millennium BC Central Europe.

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1 Introduction

1.1 Changing animal burial practices: Mesolithic to Eneolithic Europe

“Burial traditions express the economic, social and cultural characteristics of the society and reflect its worldview” (Zagorska, 2016, p. 227). Burial traditions can differ geographically and change over time. Remains of dogs in the archaeological record have been given different labels based on its context. Examples of contexts are, in a sedentary pit, within its own burial pit or coburied with a human, at a ritual site, or at a different/unknown site altogether. As Angela Perri (2017) lists, the deposition of dog remains in burial contexts is an old practice with the example of a solitary burial in Mesolithic Skateholm and a co-burial in Upper Paleolithic Bonn-Oberkasel.

As can be seen in Figure 1, pendants made from dog’s teeth are not found within Mesolithic burial complexes but appear in human burials during the Early Neolithic and continue to be used, predominantly, during the Middle Neolithic. The emergence of this practice coincides with the Early Neolithic migration event (6500-4000BC) into Europe (Furholt, 2021, p. 481). Mesolithic Megasites started to diminish once European regions adopted the Neolithic system (Furholt, 2021, p. 513).

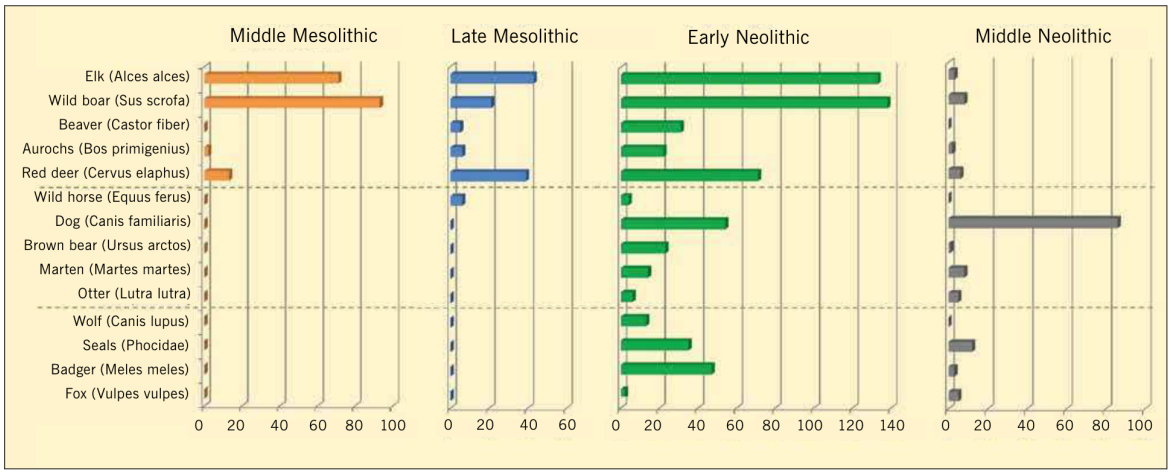


Fig. 10 Tooth pendants made from teeth of various animals in different periods of the Stone Age.

Figure 1: During the Middle and Late Mesolithic tooth pendants are made from large forest animals. This changed during the Early Neolithic, because the known sources are used more extensively, and other animals are added to the practice. Lastly, this practice changed again during the Middle Neolithic to almost exclusively dog (Zagorska, 2016, p. 236).

What change from pendants made from all kinds of animals to almost exclusively dog teeth show a change in the socioeconomical and -cultural dimension. In addition, it shows the growing significance of at least dog remains, if not, the significance of dog itself. Burial practices focus on the transition marked by the death of an individual (Conneller, 2013, p. 353).

Grave goods could have been linked to the identity of the person as viewed during their time in the world of the living. The identity of the animal could also have functioned as a guide in the afterlife, or as meat supplier (Conneller, 2013, p. 353). During the Mesolithic, wild animals lived in the same sphere as the hunter-gatherers. Their ideas of the afterlife are linked to the experiences in the physical world. With the migration of farmers into Europe, their experiences change. Over thousands of years Neolithic farmers came to value control of space and spatial stability (Furholt, 2021, p. 493). To be able to become successful farmers in Europe, new values of sharing and communality were added. Over time, contact with local hunter-gatherer communities became stronger. In addition, with the influx of third millennium BC immigrants from the east, symbolism and traditions might have changed all over again.

1.2 Problems

The deposition of canine remains in burial context connect dogs to either deceased humans and/or symbolically to death. Published papers on the subject give an overview of the details at specific sites dating to the third millennium BC. When comparing these case studies, the researchers appear to have separately reached different conclusions about why dog remains have been deposited at these burial sites. The social structure of communities in Europe in the third millennium BC is difficult to identify. Interactions within and between communities could be traced through evidence of rites and other traditions using their material culture. In this section, the cultural expressions surpass the names based on pottery types, such as Corded Ware Culture (CWC). Examples highlighted in this section show a variety of contexts at different sites in Central Europe in which the remains of dogs occur.

Kyselý (2021) observes that in Late Eneolithic Bohemia, Czech Republic, the teeth of a smaller breed of dogs were used as necklaces for the deceased human. During the Neolithic, Bronze Age and Iron Age, the dogs chosen for this purpose slowly got larger, only to go back to using the teeth of smaller dogs in the Late Iron Age. The question is whether the dogs were chosen for their small stature or that the dogs surrounding communities were all relatively small. There is no indication of dog bred for their size in the Late Eneolithic or Neolithic. Because the usefulness of smaller dogs is diverse, it makes it difficult to understand the purpose of the placement of dog remains in human graves and cemeteries during this period (Kyselý, 2021, p. 503).

As the previous examples shows, the dogs of which the teeth originated from show similarities. Similarities function as anchors to research the past. At the site of Oechlitz, the discovery of the perforated teeth of dogs within human burials show use of similar rows of teeth. However, its placement differs. They seem to have been part of an elaborated headdress instead of a necklace. These types of ornaments, dog tooth pendants, are common in female

single burials (Frînculeasa et al., 2020). At Esperstedt a similar headdress was found in a grave of an adult female. At both Oechlitz and Esperstedt some of the ‘teeth’ were either shaped out of bone and in one case a fox’s tooth (Leinthaler et al., 2006; Menke et al., 2017). In addition, Kyselý et al. (2019) concluded that the imitations at Březiněves in Czech Republic are ‘merely’ substitutes.

The teeth of the dogs, their placement within the burial and their possible use have been discussed in the corresponding articles. Unfortunately, a bigger thesis overlooking the burial rite in a larger database has been lacking. Therefore, the different conclusions about the teeth’s occurrence as part of the third millennium BC burial rite are varied. It also focusses on the position of the human in the burial where the dog teeth are secondary.

The teeth at Oechlitz have been interpreted as markers of social or economic status of the individual when alive (Menke et al., 2017, p. 227). Other markers are not discussed, even though dog teeth do not occur in every burial. Dog teeth are rather exception than rule. If the exclusions are taken into consideration the interpretation is rather broad and can be rephrased as: “The items or the full headdress could have been linked to what the person represented in their community when they were alive”.

Leinthaler et al. (2006) remarks that the teeth at Esperstedt were chosen based on availability in nature or could have been amulets holding magical powers. Therefore, their use is not focused on what the teeth express to the outside, but their intended use is to heal or protect the inside of the individual wearing the pendants. The shape or representation of the teeth of dogs may have held more significance than whether the teeth were actual dogs’ teeth. Therefore, contradictorily, the dog does have something to express. The shape matters and is linked to one or more trait(s) of dogs.

What makes the interpretation of dog remains in the third millennium BC burial even more complex is the placement of complete dogs placed within burial contexts. The example from Niederröblingen in central-Germany shows us a single grave of an adult male buried with two adult dogs at his feet. Müller (2011) concludes the dogs were placed inside the grave of a man of stature. The size of these dogs is common in relation to wild dogs and wolves at the time. The individual dogs could have been important to the community, to the deceased or both. The dogs could also be a representative of the complete species of dog, and their significance to the human community. The question is whether the ritual of placing a complete dog and a row of teeth had the same function and symbolism, and, if not, what are the differences?

What can be concluded based on the examples is, that dog remains are part of a CWC burial ritual. However, different interpretations have been brought forward based on only one or a few sites. In addition, interpretations have also been made from the point of view of humans. This also applies to the interpretation of the dog-human relationship and how it might

have changed over millennia, acknowledging the long relationship between the species dating back to the Pleistocene. In the aforementioned examples, the agency of the dogs is not addressed. Was the dog seen as an assistant, or were they seen as equals, and could this have differed in life and death, or would both species kept their initial status? Did the dog motif change due to its transformation in the burial rite, or did they retain their initial qualities? In most instances, the articles written about the subject presume it is the human that is the instigator of the relationship between the species, and therefore *the* integral part of the burial. Dogs and their remains are interpreted in a 'lower' rank, or 'just' as adornments. Whereas the associated form is often marked as something symbolic, drilled teeth are classified as 'just' a headdress, a necklace, or decorations on a cape, thus downplaying the inherent trait(s) of the animal the tooth belonged to (Marciniak et al., 2017, p. 196).

1.3 Research questions and thesis overview

The aim of this thesis is to elevate the practice of dog remains in CWC burials, and therefor dogs and the dog motif, to a high representation than 'just ornamental'. To achieve this, I will try to formulate an answer to the question: How do patterns in the deposition of dog remains in third millennium BC burial sites in Central Europe inform us about the representation of dogs in Corded Ware Culture communities? A sample data set of dog remains in burial contexts dating third millennium BC in Central Europe will be drafted to construct a base.

With the data set the following sub-questions can be tackled:

- To what extent do the patterns reflect the dog-human relationships in the third millennium BC, and what does this suggest about the symbolic role in these burial practices, or even the agency of dogs?
- Which remains of dogs are part of the third millennium BC burial rite, what is the context of the finalization of the burial ritual, and which patterns could be drafted from this data?
- How does the arrangement and the type of dog remains in third millennium BC burial sites in Central Europe relate to other features of the burial, such as the placement of human remains, the age and sex of the human and other burial goods?

To answer these questions the thesis is outlined as follows. Chapter 2 delves into the use of Europe's landscape during the third millennium BC and symbolic role of dogs explored through the (Proto-)Indo-European mythology. Chapter 3 continues with the theoretical framework built with the practical role of the dog and the dog-human relationship in prehistoric

societies. Chapter 4 delineates the methodology employed, which forms the foundation for the database analysis. The thesis continues with Chapter 5 in which the results of the sample data set analysis are presented, highlighting discernible patterns within the gathered information. Chapter 6 engages in a discussion and Chapter 7 in a conclusion with further recommendations for research, synthesizing the findings from the previous chapters and contextualizing them within broader archaeological and anthropological perspectives, thereby contributing to a deeper understanding of the relationship between dogs and humans in Central Europe during the third millennium BC.

2 Background

2.1 Europe in the third millennium BC

At the start of the third millennium BC a second migration pattern appears. Simultaneously, ideology and the social model of communities in Europe seem to change. The burial rite and use of dog remains is one example of those changes. The deposition of dogs and dog teeth by CWC finds some parallels between the rituals of the Post-Eneolithic and Eastern tradition of the late fourth and third millennium BC. Both traditions of depositing carcasses and teeth occur, but the tradition of which species to place within or near the burial can differ. For associated depositions by the more eastern located barrow communities, such as the Yamnaya Culture, complete remains of an array of wild animals and cattle are deposited, while the CWC peoples of Central Europe seem to exclusively choose dogs for this ritual (Marciniak et al., 2017, p. 217).

These third millennium BC social connections were categorized by archaeologists based on their pottery type, such as Corded Ware and Bell Beaker (Figure 2). Since the rise of aDNA-research archaeologists discussed the implications of both cultural homogeneity and regional differences in third millennium BC Europe. In short, the emerging pottery cultures in Europe (Figure 3) show many similarities with the Yamnaya culture of the Russian steppes (Furholt, 2014; Kristiansen et al., 2017). The shape and decoration of pottery, the use of battle-axes and creation of burial mounds were spreading all-over Europe. In addition, Kristiansen et al. (2017) argues the steppe-immigrants burnt down forests to create a similar open, steppe-like grazing grounds for their herds. They state in their article that Yamnaya-males entered Europe to form new settlements. New technologies made this mobility over vast distances possible, traced through aDNA-research. In their interpretation of changing social structures men were the instigators of the spread of the pastoral economy and ideology. Exogamy was traced through aDNA; females were of local Neolithic origin who married into Yamnaya settlements which were dominated by men descendant from the first-generation migrants (Kristiansen et al., 2017). This might have resulted in a new paternal-focused ideology of manhood, dominance, and violence. However, not everyone agrees with this hypothesis.

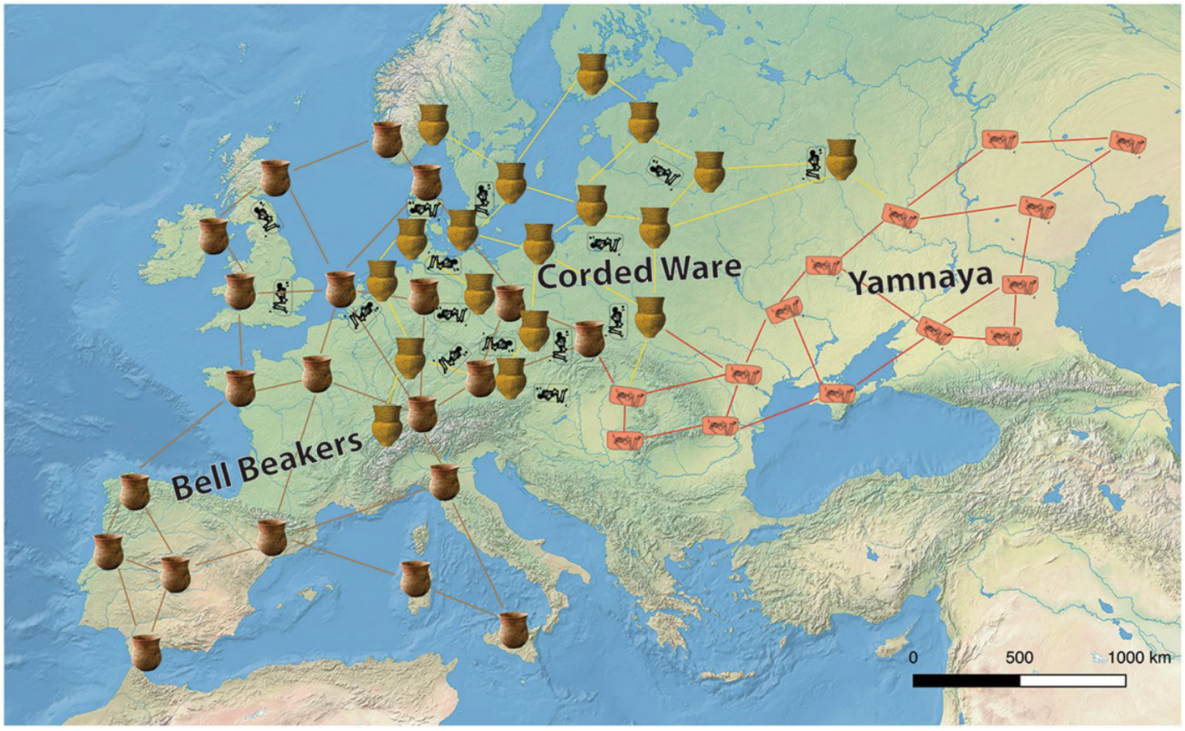


Figure 2: This map shows the three main archaeological units in third millennium BC Europe, namely Bell Beaker, Corded Ware and Yamnaya culture (Furholt, 2021, p. 500).

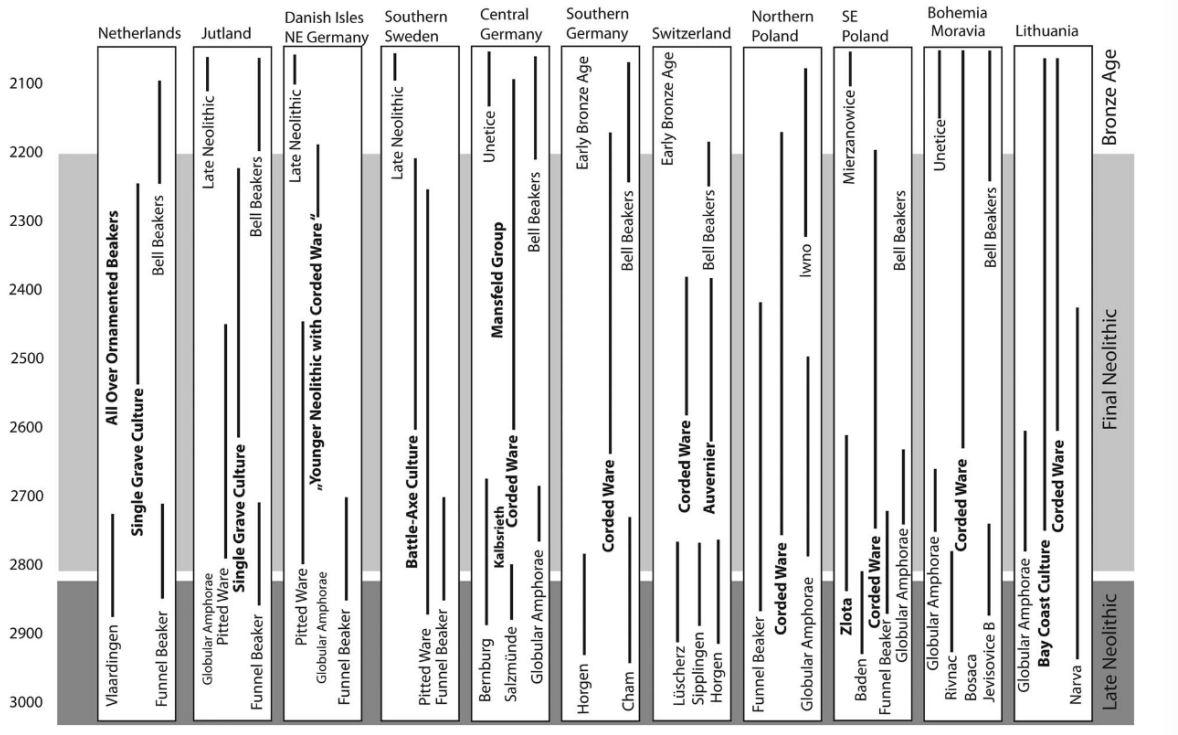


Figure 3: Chronological positions of pottery cultures in Europe (3000-2100 BC) (Furholt, 2014, p. 68).

In recent years the hypothesis of one standardized, invasive third millennium BC ideology spreading into Europe is nuanced by archaeologists. Before, the significant east-to-

west migrant invasion by the Yamnaya-culture took hold with the early aDNA study. Recently, the discussion of regional and local diversity has brought attention to subtle variations in material culture, burial customs, social structures, and ideologies (Furholt, 2021).

First, the narrow monothetic view that material culture equals cultural societies. 20th century research on the Eneolithic (roughly 2800-2200 BC) resulted in the grouping of societies in material culture groups, such as pre-Corded Ware, Baden and Globular Amphora (GAC), Corded Ware, Bell Beaker and Early Bronze Age Únětice (Papac et al., 2021, p. 2; Sjögren et al., 2016, p. 1). Furholt (2019, p. 117) renames this burial practice (Figure 4) as 'Late Neolithic and Early Bronze Age Single Grave Burial Ritual Complex' (SGBR). This burial practice would be one of many overlapping 'spheres' between different culture groups (Kolář, 2020, p. 1180). What is missing in this standardized grave inventory are objects made from perishable materials, such as bones, teeth, antler, mollusk shells, amber and plant seeds (Petzold, 2005, p. 1). In addition, a fundamental characteristic of the SGBR is its variation within the grave set (Wentink, 2020, p. 226). Therefore, the local or regional burial rite is a representation of the local or regional community, who could have had contact outside their social territory.

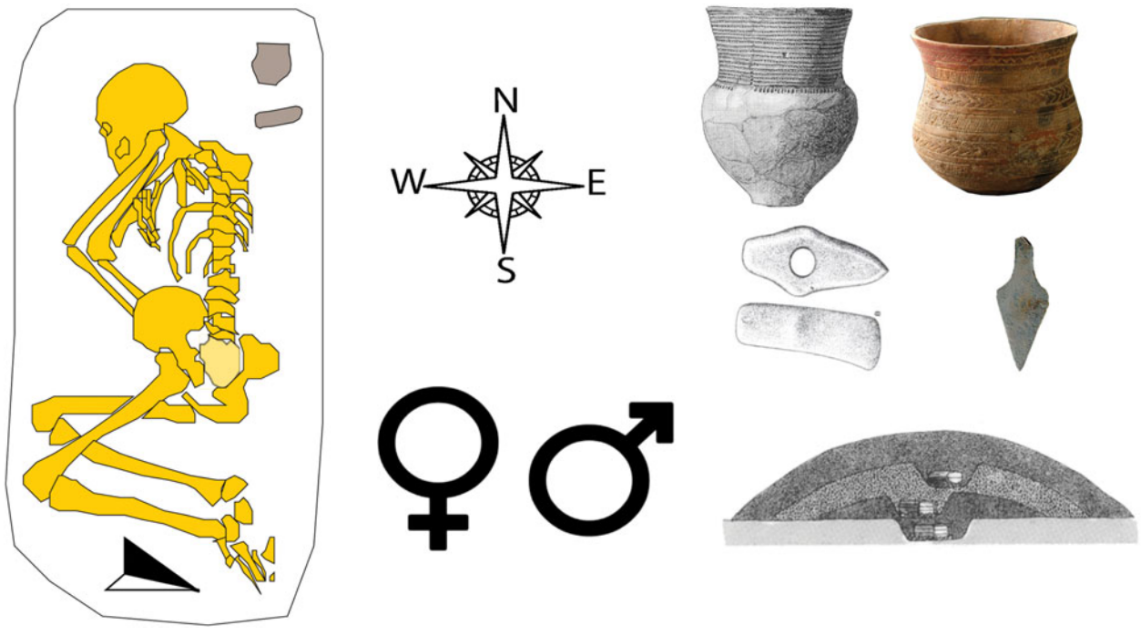


Figure 4: Main elements of Late Neolithic and Early Bronze Age Single Grave Burial Ritual Comples (SGBR): Single burial in crouched or flexed position, strict orientation rules, gender differentiation by body placement, burial mound, prominence of drinking vessels, prominence of weapons in male graves (Furholt, 2019, p. 118).

Secondly, the male-oriented ideology might be the result on a bias in the archaeological record. Based on the aDNA of individuals in graves underneath burial mounds many of them are of the male sex which heritage in the Yamnaya-region or are descentant from Yamnaya-males. In addition, Furholt (2021) argues that the markers of a changing culture (there is no causality

between *yersinia pestis* in human remains and a plague taking place during the third millennium BC, violence is a rare occurrence rather than standard practice, the reduction of y-haplogroups in males is a worldwide phenomenon, and the archaeological evidence for the patrilocal marriage practice, where the migrating male kills the local males and takes their wives, is weak) are incorrectly interpreted.

Furthermore, the regional differences suggest a different pattern of interaction. Continuing with the aforementioned 'spheres', the exchange of cultural characteristics might not be unidirectional. Through the view of the anthropological concept of translocality the regional differences can be explained (Furholt, 2021, p. 511). People migrate in different directions, bringing with them their local customs. The process of migration is infinite. It can also build upon each other, such as reusing a site not only for its physical properties, but also its mythical past (Ahola, 2020, pp. 122–123). Together with the technological development in the fourth millennium BC, innovations, practices, traditions, and ideology could spread relatively rapidly over the European continent (Furholt, 2021, p. 510).

The translocality theory is also supported by the genetic diversity. Based on the case study of 271 human genomes dated ~4900 to 1600 BCE from the European heartland, Bohemia. Papac et al. (2021) argues that the researched individuals do not show exclusively one type of genome linking them to one migration phase of Yamnaya males leaving their region of origin. Genetics show a large diversity between individuals, where some show relations to, for example, Yamnaya or Baden and Globular Amphora (GAC), and others show changes in not yet researched Central-European genetics. People in Central-Europe were probably, therefore, highly mobile communities. At the same time, traveling communities took their practices and ideologies with them, and assimilated with local traditions. This results in regionally diverse communities.

Moreover, as with the change in material culture and burial practices a change in social structure can be traced through the DNA as well. The research by Papac et al. (2021, p. 10) shows that diverse Early Bronze Age communities of central Europe have female-bias lines from both local as migrating women. Late Corded Ware and Bell Beaker show however a patrilineality through the Y-chromosome. The genetic diversity is more diverse than material culture. The more diverse the genetic makeup, the more diverse regional kinships could have been. Kinship is more than DNA. The numerous studied sites yielded evidence of the rather exceptional than standard practice of family ties passed on through DNA (Furholt, 2021, p. 511). This makes it harder to connect social structures to ideology. Although the cultural group could have stayed the same, their ideological set of values could be changing through translocal interactions, of which the emergence of the SGBR-complex is an example (Furholt, 2021, p. 510).

Not only the material culture and social structures were taken along by the migrants from East into Western Europe, but also their ideology. Comparative research can provide new perspectives on the daily lives of prehistoric people by looking into both the archaeological record and linguistic paleontology linking semantics to the environment the words originated in (F. Mallory, 2021). Against this background, Ahola (2020) argues it was necessary for the Early Bronze Age migrants to hold onto their ideology. She goes even further by stating that the appeal of this steppe-originated religion might have been its core of "merging past, present, new land and homeland together" (Ahola, 2020, p. 130). Arguably, the word "homeland" suggests a homogenous culture group originating from one place at a certain time (F. Mallory, 2021). Within archaeology, a certain datapoint is regarded as part of a process of change, instead of the ultimate beginning or end of phase. However, the ideas about the homeland can be passed on. This ideology is preserved in practices and goods the archaeological record because religion cannot exist without things, places, and moving bodies (Ahola, 2020, pp. 116–117). Therefore, exploring dog remains at CW burial sites might show light on what the agency of dogs was in the past.

2.2 Dogs in Indo-European mythology

2.2.1 Archaeolinguistic research of dogs and their motifs in PIE mythology

To understand all aspects of Corded Ware life we look to the changes in material culture and practices. As explored in the introductory chapter, the amount of dog remains in burial contexts goes from non-existent in the Mesolithic, to the most exclusively found mammal in the Middle Neolithic burials, next to humans. This shift might coincide with other social changes and the spread of a new ideology, as explored in Chapter 2.1. How do dogs fit into this equitation?

To explore this question, archaeological research of third millennium BC Europe works dialectically with science-based archaeogenetics and humanistic/historical archaeolinguistics (Kristiansen & Guus Kroonen, 2023). There is broad consensus that the PIE-language spread into Europe simultaneously with the steppe-migration. Within this chapter the archaeolinguistic will add dimension to the archaeological research of this thesis. Whereas archaeology and archaeogenetics serve as a dating tool and context giver for the linguists, the research of historical PIE-linguists can serve as reference to clues for changes in social structures (*ibid*.). On the other hand, by tracing the path of dogs throughout history back to the third millennium, consistencies will guide us to possible canine motif(s) held by the changing communities. Change could lead to holding onto older values, symbolisms and traditions.

The first possible dog motif is linked to an initiation rite for young boys. Anthony & Brown (2017) discuss dogs to be this Indo-European symbols of rite-of-passage (i.e., initiation) of youthful males in war. First, they argue the institutionalization of the ritual because of its

repetition. Secondly, the cold seasons symbolize that one could withstand the harsh conditions of war, whereas bones of other animals are discarded throughout the year. Thirdly, common are the remains of well-treated older male dogs which symbolize a male-oriented rite. Lastly, the passage is symbolized by the butchering, cooking, and therefore consuming of the dogs. By comparing this hypothesis to the PIE-literature, similar rites of boys sent into the wild to act like wolves or dogs are described in Greek, Latin, Germanic, Celtic, Iranian, and Vedic texts (Kaliff & Østigård, 2022, p. 43). In addition, the arguments by Anthony & Brown (2017) arguments seem to correspond with the aforementioned theory by Pierotti & Fogg (2017) that the traits of the wild dog/wolf are valued as inheritable traits for humans, in which their teacher is their surrounding nature. Adding up the arguments, the location, assemblage, and practices do not correspond with other canine-related Indo-European myths and rituals, such as dogs as guardians of the afterlife, dogs representing death, dogs associated with healing by absorbing illnesses from humans (Anthony & Brown, 2017, p. 146). In the latter, dog remains would have been found at burial complexes and would not have been consumed.

Continuing with this theme of comparing the archaeological record to rites and traditions, written stories come into play. The dog has been given a place in mythology. The (PIE) word for dog (*ḱ*won*) can be dated back to the Mesolithic (J. P. Mallory, 1976, p. 46). Dogs appear both in texts and depictions from later Indo-European cultures. The animal is often associated with, or represented as a companion of, the deity of the underworld, but can also be found to be associated with fertility and the elements (Chevalier & Gheerbrant, 1990, pp. 238–245; Talarczyk-Andrałojć, 1993, p. 29). Examples of Indo-European watchdogs of the Underworld are the Greek dog *Kérberos* of Hades, the Nordic Garm of Odin, the Vedic dogs *śábala* and Cyama of Sarameyan (De Grossi Mazzorin & Minnit, 2006, p. 62). A specific role for dogs is with the association with the Ancient Greek Hekate. Not only are some early depictions of Hekate accompanied by canine symbolism, in the realm of the living dogs are also offered to the goddess in sacrificial rites. De Grossi Mazzorin and Minnit (2006, p. 65) state that these types of Ancient Greek practices link dogs “to a number of divinities directly connected to the idea of passage from one stage to another, be they divinities of the earthly world related to the principle of procreation and development, or divinities that watch over a line that distinguishes two diverse and contrasting worlds of wild and urban, life and death.”

The well-known foundation myth of king Romulus and brother Remus features a female wolf nursing the twin into adolescence. The events which are part of the passage of the twins show two important wolf motifs. Pierotti & Fogg (2017) describe wolves as friendly predators. In the Roman foundation myth, the male twins display predatory behavior during several events in their childhood, such as hunting and cattle raiding (Vuković, 2022, pp. 59–60). During the Roman festival of Lupercalia this part of the myth is displayed by men running, clothed in only their loincloth, receiving blows of whips which were offered by women. While the men display

the ‘wild’ side of wolves, the women believed the whipping would increase their fertility and would help with the delivery (Vuković, 2022, p. 62). The friendly side of the wolf is characterized by the nursing of the she-wolf and nourishment of her milk. If a wolf is willing, this nursing could be part of the natural behaviour of the animal taking part in the socialization process (Pierotti & Fogg, 2017, pp. 99–100). In both representations, the character of and symbolism surrounding the wolf functions as a guide from children to adolescence.

Eftimovski (2022, p. 220) concludes the summary of canine motifs as liminal. The dog is a symbol of the movement, or journey, in between two extremes. The motif can also be found in one of the oldest known Indo-European myths of the Great or Wild Hunt. Here, the dog helps the hunter to cross boundaries beyond material reality and other limitations of humans. An attribute of dogs is the ability to sense the world differently from humans (Fowler, 2004, p. 79). Its task is therefore to extend the hunter’s sensory capabilities on the one hand and guide the hunter away from chaos into success on the other. In other words, the dog represents both ‘selfhood’ and ‘otherness’ (Afshar, 1990, pp. 16–17). Chaos, and anger, can also be represented by the wild dog or wolf. In the Old Norse myths, warriors, also called *úlfheðnar* (wolf-skinned), fought with the fury of a wolf (Vuković, 2022, p. 146). This behaviour could have been part of several passage rites during festivals, such as the Lupercalia festival where events of the Romulus and Remus myth are performed. As mentioned above, the males took part bare-chested. This ancient characteristic of the rite might have evolved into the English word *berserk*, a word now associated with Viking raids (Vuković, 2022, pp. 146–147). This wolf (PIE: $*wl̥k^{w}os$) can be seen as an enemy or threat (J. P. Mallory, 1976, p. 47). The ritual associated is the one of the werewolf in which a human transforms into a rampaging wolf. This ritual can be seen as part of the initiation of boys into youthful warriors (Kaliff & Østigård, 2022). In most, if not all, of these male passages, the rite is executed in groups, thus emphasizing a bond or ‘pack’ (Vuković, 2022, pp. 146–147).

These warriors can be deployed for the Great or Wild Hunt. However, this myth could be related to female deities of nature and fertility, which are associated with agriculture and society in general. The set of rituals, including the Great or Wild, is preformed surrounding the changing of the seasons, marking a successful hunt in autumn, surviving (mid-)winter and starting over in spring (Kaliff & Østigård, 2022, pp. 135–137).

The myth of the Great of Wild Hunt has been altered by changing societies to reflect their developing values. To explore the changing third millennium BC communities in Central Europe through the practice of placing dog remains in their burials, the following chapter will outline the theoretical framework for this thesis by delving into the role of dogs and the dog-human relationship in prehistoric societies.

3 Theoretical framework

3.1 The role of dogs in European prehistory

3.1.1 Canine skills and the utilization by humans and their communities

Throughout history the human-dog relationship has become increasingly complex. The first established relationships started with another species, namely wolves. To when this domestication dates is a topic of discussion (Galeta et al., 2021, pp. 42–43). Why this process started can be explained in the evolving cooperation between humans and wolves in ecological and social contexts. The tasks of wolves, and later dogs, can be classified as offensive (during the hunt) and defensive (at the campsite) (Schnitzler & Patou-Mathis, 2017, p. 150). The forming of this mutually beneficial relationship develops while the animal is still alive. This relationship might be reflected in the archaeological evidence.

First, the tasks of dogs as subjects to humans in a community. From this point of view, the synchronicities of the development of the dog-human relationship can be compared. As Russell (2020) sketches in her research of dogs in the Neolithic Near East that they utilized surrounding dogs for food acquisition. The dogs were utilized either as hunting props or as meat themselves. With the development of domestication, a new role for the dogs within the community was added to the list in the activity of herding cattle. As farming communities became more complex, so did the list of utilities of dogs to humans (Russell, 2020, pp. 151–152). The diverse qualities of dogs are displayed in Figure 5.

Use of the animal	Archaeo-zoological sources	Literal sources (ancient authors)
Tracking partner, help in hunting		yes
Waste disposal and coprophagy	yes	
Sociability, company, bilateral commensality	yes	yes
Protection of people and belongings		yes
Living heating system		
Help at war		yes
Dog fights		
Carrying or drawing loads –pack and draft animals		
Guarding and driving herds		
Supplying raw materials (droppings, hair)		
Therapeutic source		yes
Meat, fat, marrow (?)	yes	
Hides, pelts	yes	
Bones	yes	
Ritual functions in cultural contexts	yes	yes
Sacrifice in a burial context	yes	
Offering in a burial context	yes	

Figure 5: Potential uses of the qualities of dogs (Horard-Herbin et al., 2014, p. 27).

However, this list does not regard the possible symbolic function(s) of a dog. The hunting or herding partner, housekeeper or even family member might be transformed into a new motif when the remains of the animal are deposited into the ground (Prummel, 2006, p. 75). As Morey & Jeger (2022, pp. 2–8) showed in their article, the practice of burying dogs and humans together is a practice spread across continents and millennia, dating from ca. 14,000 BP to 900-600 BP. Frînculeasa et al. (2020, p. 11) lists a widespread area, "from Armenia (…) to the Causasus, Ukraine, Bulgaria or Romania (…) to Central Europe", where perforated dog molars are found in human burial contexts dating to the third millennium BC.

Only the final use of the dog, namely the practice with its remains, has been preserved in the archaeological record. Humans ate the flesh and organs of dogs, wore their skins and pelts, and made jewelry out of the teeth and bones of dogs (Horard-Herbin et al., 2014, p. 28). Russell theorizes (2011) processing (parts of) animals other than daily tasks ask for can be classified as the ritualization of animal remains. She continues, finding traces of feasting might suggest the chosen meat at the burial site can mirror the life of the deceased. In addition, the processing and consuming of meat could be seen as trophies showing respect to the animal or ecosystem it resides in, but also to empower the ritualized task. To evoke the represented power of the animal or guard against evil powers, amulets can be worn, either reusing the animal as a material or depicting (a part) of the animal. Sacrificial animals are often shown to be messengers to the gods. Both wild and domesticated animals are used by people all over the world of specific tasks. A special place is reserved for the dog. Russell (Russell, 2011, pp. 279–296) summarizes the role of dogs as companions, hunters, herders, guards, scavengers, laborers, food and fur resources, symbols, and pariahs.

The remains of dogs also followed humans into their burials. These depositions might point to a special place for dogs in their community or belief system (Frînculeasa et al., 2020, p. 212). The traits of the species might have been thought to be locked inside its remains to be called on during daily tasks, or in the afterlife. The remains could also have functioned as an animal metaphor where human traits are depicted onto the animal for a better understanding of oneself or the social construct of a group (Russell, 2011, pp. 11–12). However, the dog might have (almost) had as much agency as the deceased human.

3.1.2 The agency of dogs in the dog-human relationship

More uncommon than processed dog bones are the depositions of a complete dog or multiple of dogs at gravesites. As suggested by the animal connection hypothesis (Shipman, 2010) dogs entered the symbolic realm of humans as the relationship in the day-to-day tasks became more co-dependent. Dogs are classified as domesticated animals. Remains of wild animals are also found, though decreasingly with hunter-gatherer groups becoming less mobile farming communities (Dittrich, 2021, p. 6).

The early stage of the animal connection hypothesis (Shipman, 2010) is the tool-making phase whereas humans act as both predator and scavenger. In the following transitional phase wild animals enter the symbolic realm of humans, as represented in prehistoric art, by classifying their distinguished characteristic traits. Eventually, the domestication process reaped the benefits of these traits to make us of the animals as living tools.

What is missing in the animal connection hypothesis is the reasoning, or agency, of wild animals entering the domestication process. According to Dittrich (2021, p. 17) domestication is the social construct of commitment to which animals and humans are actors in both directions, instead of the aforementioned dominance. Animal remains in the archaeological record have been researched through the eyes of a universal-historical perspective where human-animal relations are merely metaphors of human control and dominance over nature (Dittrich, 2021, p. 10). This is a rather capitalistic and materialistic approach of the past. All non-human things surrounding humans are not necessarily practical objects to enhance the day-to-day living conditions. Humans of the past do not simply 'take' from nature to produce anything to their liking. Not all inanimate objects are dead, and therewith, the dead are not inanimate (Dittrich, 2021, p. 11). Humans are not the producers in nature, but enhancers [*assisteninnen*] and animals are contributors of the enhancements [*co-assisteninnen*] (Dittrich, 2021, p. 12).

This new perspective sees the representation of animals as a symbiotic relationship between humans, dogs, and herding animals. The animals are thanked for their features by humans feeding them. The representation of skills, morals, or cultural traits, including the agency of animals, is part of the concept of animism (Dittrich, 2021, p. 20). On the other hand, the dependency of the animals for human interaction can be seen as a gift. Later, the deity or nature is thanked in ritual and offerings which leave a mark in the archaeological record (Dittrich, 2021, pp. 9–10). These markings or totems, often characteristics of animals, are taken by humans and displayed in clothing and accessories (Dittrich, 2021, p. 20). The global spread practice of joint dog-human burials suggests dogs and humans have a long mutual history (Morey & Jeger, 2022, p. 9).

This human-dog codevelopment has been suggested to date back to up to 32,000 years ago to a time where protodogs assisted Neanderthals during the hunt (Perri, 2020, p. 8). The basis of the relationship between humans and dogs, or even wolves, could be traced back to the development of what Vogt & Kotrschal (2023) call the "social toolbox". One of the oldest systems of vertebrates is the social behaviour network located in seven nuclear areas in the brain and brainstem where the basics of social behaviour can be traced back to. More complex is the thalamic/striatal systems of forebrain affectivity in which approach (in sociopositive contexts) or avoid (in fearfull or stressfull contexts) responses are activated. Essential is the

brain-body-connecting oxytocin system which supports corporation and trust within groups. These systems are vital to the “communication of affects and emotions”, which “are at the core of any social relationship, including those between humans and canines (Vogt & Kotrschal, 2023, p. 7).

Both wolves and dogs can cooperate with humans. The difference between wolves and dogs in relation to human communications is hierarchy. Wolves corporate at the same level or have even shown to take the lead in, inter alia, teaching and learning. Eventually, this trait led to the selection of tame pups evolving into the following dogs we know today (Figure 6).

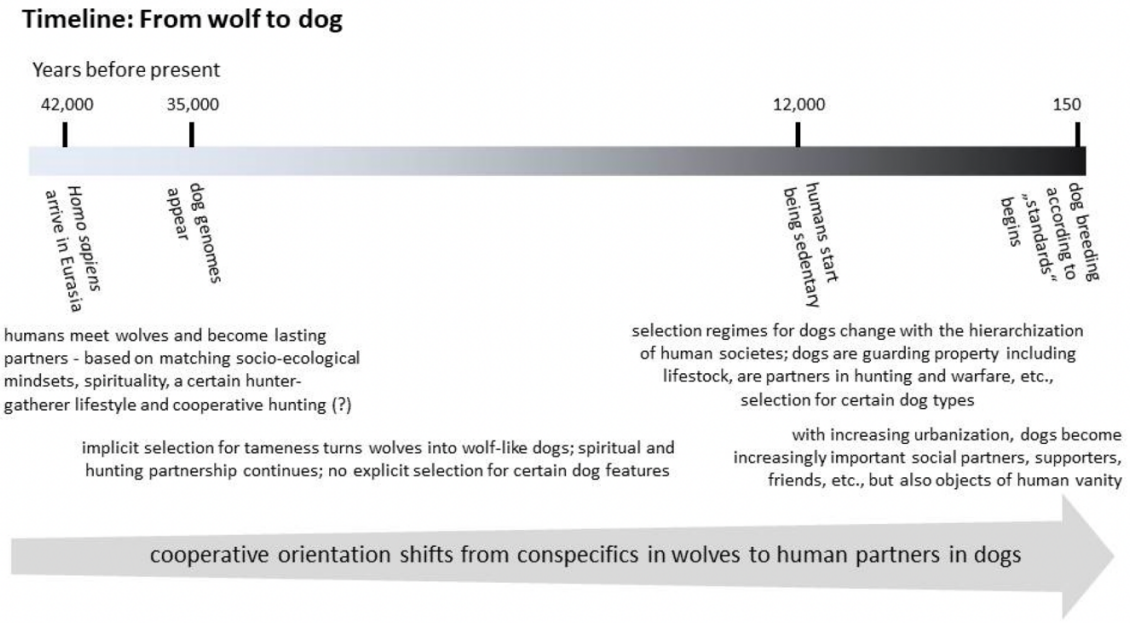


Figure 6: Timeline from wolf to dog by Vogt & Kotrschal (2023, p. 11).

The previous hypothesis where humans might have taken cubs to raise them as part of their community or family is also known as the Pinocchio-hypothesis. This hypothesis completely disregards the agency of the wolf. Pierotti & Fogg (2017, p. 100) therefore suggest an alternative. Instead of seeing wolves and humans as competitors for food in the same ecosystem, both species could have had agency to act on the mutual benefit of learning from and working with each other; wolves actively taught humans hunting skills and the humans taught scavenger skills. The natural behaviour of this intelligent and social species added to its domestication process, or even initiating it (*ibid.*).

In addition, the concept of “wild” and “domesticated” is not as black-and-white and opposing as it seems in the context of human-animal relationships (Dittrich, 2021, p. 14). Cattle did not only function as consumption of proteins and calories. Their “edibility” can be constructed in more than just their meat, hides and production of milk, namely as the display

of the concepts of gender, prestige, and performance (Dittrich, 2021, p. 23). Sparrows, rats, and elephants do not have morphological changes, but the relationship these animals have with humans irrefutable. In which category do they then fall into? (Dittrich, 2021, p. 14). By giving animals a role in social structures and ideology, the bond between humans and animals is strengthened (Dittrich, 2021, p. 16).

This role of animals in social structures and ideology can be found in the archaeological record as an object. This object can be made from different materials and can be either complete or partial. However, the value of this object for the people who used the object is kept within its *substance* (Fowler, 2004, pp. 61–62). The coherence between the object and the substance are the qualities of the object. For instance, a metal object is made of a transformative material. Its substance might suggest transformation, or passage. This substance can also be seen in the quality of liquids, which are held in and distributed by vessels.

Rites are often expressions of these transformations, such as the burial of a deceased person to re-enter a society (Fowler, 2004, pp. 44–45). People, their bodies and their surroundings are part of the community and communal activities (Fowler, 2004, p. 42). Recurring grave goods suggest the item is linked to their values, which might have an ancestral origin, instead of being interpreted as goods reflecting the personal identity of the dead (Van de Beek, 2004). This ancestral origin could be human but could also have been extracted from other 'beings' with which (or: who) they interact with in their surroundings. Humans who share space with animals interpret their role and agency differently, depending on whether they subscribe to a multi-cultural or multi-natural world view (Fowler, 2004, p. 65). According to the first worldview, people only consider themselves to be equal, identifying cultural differences that one can exchange. According to the latter, humans and their environment are equal, whereby everyone and everything is part of the same culture. These differences are even further distinguished with the addition of totemism in between as shown in Figure 7.

	Animism (multi-natural)	*Totemism*	*Naturalism (multi-cultural)*
The nature of identity	Status of beings is negotiable; the relation between people, animals and things is dialogic	Animals, people and things are essentially 'what they are', but can communicate with one another	Identity is fixed by species
Life energies	No fixed source of life energy; energy is circulated and generated through relationships	Ancestors are the source of energy and shaped the form of the world. Living beings gain their energy from the land.	Life as an energy comes from God, nature of biochemical processes

The transmission of form	Transformation of forms is vital to interaction between beings – each takes on a form appropriate to the relationship they are currently engaged in	Maintenance of forms through the faithful reproduction of traditional practices, and above all the custodianship of the land, its vital to ensuring the transmission of energies to living things	Forms are reproduced identically by natural reproduction from one generation to another
Sense of community	Non-human persons are part of the human social world: nature is society, and species constitute different social groups. However, species may appear in forms that are not their own	Human persons along with other beings live together in the land, which is the trace of ancestral presence. Human society draws on natural forms for making social distinctions	The human world *is* the social world, and human society or cultural is a part of nature
The attainment of personhood	Animals, objects, places and plants can all potentially be persons, and parts of persons	Animals, objects, places and plants are *like* persons, and share ancestral energies with persons through their shared connection to place and descent from the ancestral being of that place	Only human beings can be fully persons; and animals, objects, places and plants can only be thought of as persons in whimsical or fantastic contexts. Any metaphor between human and non-human is thought to be simply representational

Figure 7: Animism, totemism and naturalism (Fowler, 2004, p. 68). The difference between these world views has its roots in the identification of humans by themselves, and in the identification in comparison to their direct environment. In animistic relations humans engage with all kinds of entities, whereas with totemism hold substance in ancestral energies linked to specific places. In naturalism, humans find substance in only human interactions within or across cultures (Fowler, 2004, pp. 66–69).

Reflecting upon this chapter, actions related to the dog-human relationship do not necessarily correlate to one specific gender or to hierarchy between the species. Tasks of dogs within a community are numerous and are not focused on one spot in the physical realm. These tasks with their representation and its symbolic interpretation change as communities change. Dogs stay domesticated throughout different time periods, although the list of their tasks is growing. What does the dog get in return? Dogs and the dog motif could be reflections of the world view of communities in the third millennium BC. The practice of placing dog remains in CWC burials could be an act of representation of (parts of) the world view and ideas of the afterlife by mourners (Oestigaard & Goldhahn, 2006 in Bourgeios & Kroon, 2023).

4 Methodology

4.1 Dog depositions in the archaeological record

Canines have been lending their characteristics to the benefit of humans and human communities. As discussed above, these characteristics are numerous and widely applicable. To broaden the discussion about the position of the dog as 'just' taking part in the male warrior hypothesis, every excavated burial detail extracted from the literature has been given a category in the sample data base. These categories are placed in one of five segments.

The first segment contains geographical information about the burial from the modern region to site context to burial context. This segment continues with the site reference or reference number as in the literature, then the number of individuals within one burial (single or multiple) and, lastly, the type of burial (burial mound, flat burial, stone coffin).

The second segment contains information about the individual, namely their sex (female or male), flexing (left, right and on the back), orientation (points of the compass and corresponding degrees), directional facing and age (mature, mature/adult, adult, adolescent, child/infant and adult+subadult). Included in the sample database are depositions of dog remains in relation to humans. As mentioned in Chapter 2, the flexing positions and orientation of buried humans was a deliberate part of the burial rite. Therefore, the information about the human is as essential as the information about the dog remains.

The third segment contains information about the skeletal remains of a dog, namely the type of placement within the burial pit, the type of remains that are deposited, further information about the dog teeth and processing of the teeth, and material origin of the object.

The fourth segment lists grave goods made from other materials than dog, which are included in the same burial pit. The fifth and last segments contains other information from referenced literature (Feustel et al., 1966; Fischer, 1956; Frînculeasa et al., 2020; Kern & Lobisser, 2010; Kyselý et al., 2019; Leinthaler et al., 2006; Matthias, 1974, 1982, 1987; Meller et al., 2008; Menke et al., 2017; Müller, 2011; von Rauchhaupt & Schunke, 2010). From this literature, examples of the different burial types, remains and placements are clarified in 4.1.4. Lastly, unknown information is marked with a question mark (?). In this case, the question mark signifies that the data is not mentioned in the literature that is cited.

4.1.1 Types of depositions

In the archaeological record the skeletal remains of dogs can be encountered numerous different in contexts. Morey & Jeger (2022, p. 2) created a typology based on the research of Angela Perri (2017), here illustrated in Figure 8. The types of deposition are based on the context of the dog deposition in relation to human remains, and on the deliberate choice of depositing certain dog remains.

Type of deposition	*Description*
Isolated	full articulation, no co-deposition, may be clustered in collective dog burial sites
Associated	one or more dogs with human interment(s)
Component	may be partially articulated, sometimes with other animals, beyond any collective dog burial area
Elemental	individual dog skeletal element(s) with human interment(s)
Expedient	miscellaneous deposition, apparent absence of care, as in refuse disposal

Figure 8: "Typology of dog depositions in archaeological contexts" (Angela Perri, 2017, p. 89)

Firstly, dogs are encountered as Isolated depositions, where a dog has undergone the burial rite similar to that of humans of the same community, without being part of a human burial context. If the dog's burial is related to a human burial, the depositions is marked as Associated. In both instances, the dog is buried intact, with no evidence of the body or skeleton undergoing permanent physical transformation during or after the initial practice.

The Component deposition type refers to the remains of a dog that are part of the burial site, where the completeness of the body is not integral to the rite, but the heritage of the animal holds significance This differs from the Elemental deposition type, where specific remains of the dog are extracted before or during the burial rite. In all these instances, the decision to deposit dog remains is valued higher than, at least, as waste. Instances the remains are discarded without signs of care, they are marked as Expedient. This type, however, is not included in the thesis' sample data base, because all remains have been put through a certain level of care, because they are part of a burial context.

4.1.2 Types of placement

One major group of skeletal elements of dogs in this database are their teeth. The dental types are split into three categories: canines, incisors, and molars (Figure 9). Commonly, an adult dog has four canines, twelve incisors, sixteen premolars and ten molars. Within this thesis, premolars and molars are categorized as Molars. Based on their mentioned shape in the literature, other categories of imitation canines and undefined teeth are added. Within this segment it is included whether the teeth have processing and/or use-wear marks.

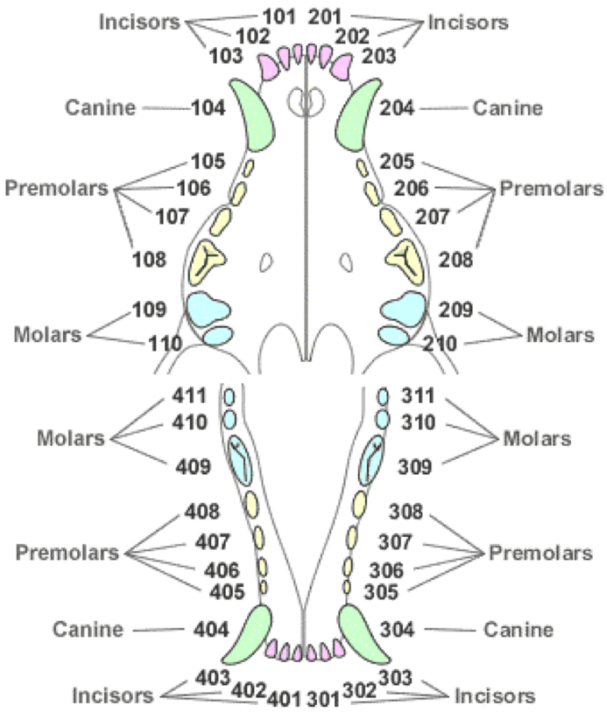


Figure 9: Canine dental chart. Note. From Vetinary Dentistry*, by N. Jonhston, 2002 (https://www.rvc.ac.uk/review/dentistry/Basics/triadan/dog.html).*

The remains can be found spread randomly or grouped on/near the human body. In this database, the main category 'grouped' is only used for rows of teeth, whereas the other types of placements are for all dog remnant excluding teeth. Grouped is split into the subcategories head, neck/shoulder, torso/arm/hip/leg, mix [of subcategories] and unknown. The placement of these rows of teeth might correlate to garments or accessories. The main category 'Mix' is used for burials contexts in with both teeth and at least one other type of dog remain has been deposited. Other placements are skeletal remains of dogs at the Feet/legs of the human and Other. As can be read in the sample database, remains are found in the walls or right outside the walls of the burial. Aforementioned types of placements are found in Figure 10.

Type of placement	*Subcategory*	*Description*
Grouped	Unknown	At least two teeth mark a row of teeth, placement unknown
	Head	At least two teeth mark a row of teeth near or around the human head
	Neck/shoulder	At least two teeth mark a row of teeth near or around the human neck and/or shoulder

	Torso/arm/hip/leg	At least two teeth mark a row of teeth near or around the human torso, arm(s), hip(s) and/or leg(s)
	Mix	Combination of rows on, around or near different body parts
Mix		Combination of one or multiple Grouped rows and Random teeth
Feet/legs		Dog skeleton is placed at the feet of the human
Other		Dog skeletal remains found in other types of placements then grouped as a row of teeth or as a skeleton at the feet of the human.

Figure 10: Type of placement of skeletal remains of a dog within a human burial. A Distinction is made between teeth and other skeletal material.

4.1.3 Grave goods of other materials

In the above cited literature, teeth are often marked as decoration, whereas other remains of dogs have been mentioned to have a more symbolic meaning. These 'decorations' can be classified by the typology of Kyselý (2021) as drilled objects, either made from real teeth or imitations made in bone of other mammals. Types of grave goods, categorized by material group, have been marked in section four in the database.

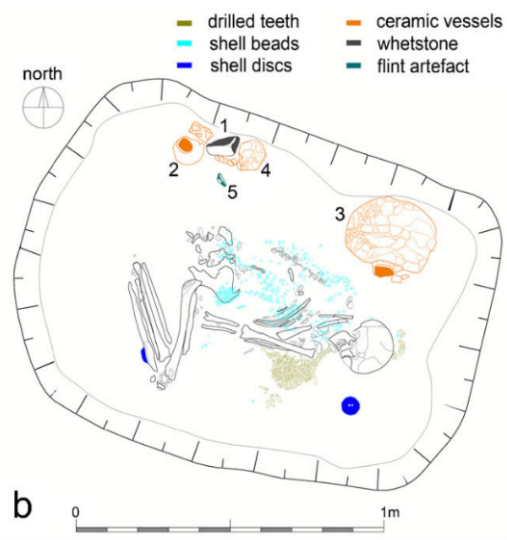
The other category of drilled objects with perforation holes are made from shell. This material group is split into discs and beads/buttons/other. Other burial goods can be classified on either their determination, such as pottery is differentiated between amphorae, beakers and other pottery, and flint in flint blades and other flint artefacts. Artefacts made of stone are either marked as stone axe or put under 'Other'. More sporadically are artefacts made of bone of other animals than dog, copper and amber, getting their own category.

4.1.4 Examples of human burials containing dog remains

Based on the deposition and placement typology the following examples illustrate what can be encountered at an excavation site. Using the first and second segment of the database, dog remains seem to have been part of the burial rite across other characteristics, such as different flexing positions, orientations, age groups and types of placements. The examples are listed in Figure 11.

Figure 11 (below): Examples of Corded Ware human burials containing dog remains.

Examples	**Description**



A: Burial 10 at Březiněves, Chech Republic (Kyselý et al., 2019, p. 90).

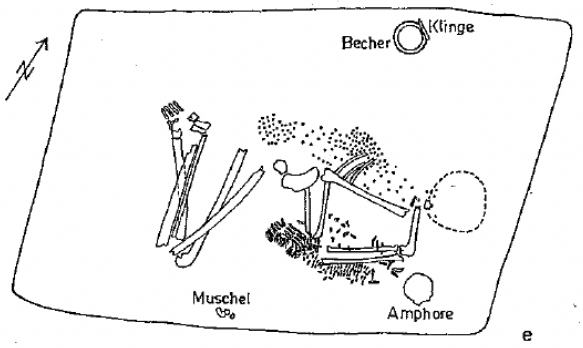
Firstly, rows of grouped teeth are found in several specific locations around the human body. Figure 11A shows an east-west orientated, left-flexed female adult. Drilled dog teeth can be on or near the head, neck and torso. The placement of these groups suggest that the objects were fastened to each other, to a deteriorated material or both. The drilled teeth might have been sewn onto a headdress, cap, hood, cape, purse or other garment. The rows in front of the body might have been part of a cape or necklace, possibly sewn onto the same garment as the shell beads. Additionally, grave goods made out of shell, pottery and stone/flint were given to the person.

B: Burial 6236 at Esperstedt, Germany (Leinthaler et al., 2006, p. 78).

In addition, Figure 11B shows another example of grouping near the head and across the legs in this east-west orientated, left-flexed adult. The individual has been found together with two pottery vessels, one flint blade and one stone axe.

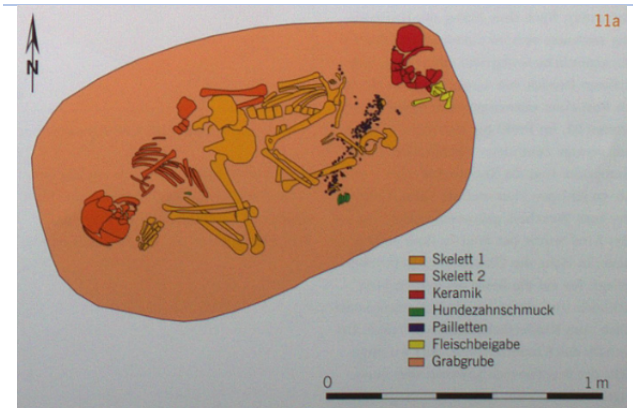
C: Burial 3925 at Niederroblingen, Germany (Müller, 2011, p. 94).

However, teeth are not the only remains found in burials. Figure 11C shows a west-east orientated, right-flexed adult male. At the feet of the person two adult dogs (aged 3-5 years old) are placed. These dogs mirror the flexing and orientation of the human. Other materials gifted are two pottery vessels, one flint blade and one stone axe. This burial is part of a large burial sites at Niederroblingen, Germany.



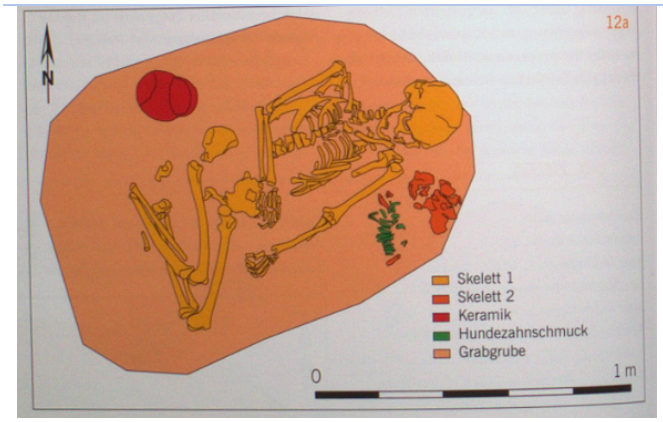
D: Burial 2 at Wohnblock 34 (1963), Braunsbedra, Germany (Matthias, 1982, p. 15).

Moreover, the use of dog remains is spread through different age groups, sexes and burial positions. Figure 11D shows a northeast-southwest orientated, left-flexed child. Rows of drilled teeth are also placed in front of the individual. Additionally, over 550 shell discs were found on top of and around the torso. Arguably, the shell discs and teeth were either not part of the same garment, or accessory, or sewn onto different panels of the garment. Not only shell discs were found, also one shell button, pottery and a flint blade have been gifted to the person.



E: Burial 20266 at Oechlitz, Germany (Menke et al., 2017, p. 289).

Lastly, human-canine contexts are not limited to single burials. Figure 11E shows a double burial of an northeast-southwest orientated, left-flexed adult-mature individual and an southwest-northeast orientated right-flexed infant(?). Within the database, burials with at least one child/infant and/or adolescent have been categorized as adult+subadult. Some drilled dog teeth are found in front of the arms of the left-flexed individual. The teeth of a young adult dog were used. These teeth might have been sewn onto a garment, together with the shell discs. Other goods are a pottery vessel, remnants of flesh gifts and one bone bead.



F: Burial 21827 at Oechlitz, Germany (Menke et al., 2017, p. 290).

It is unclear from each burial if the dog remains were buried closer to one person than another. Figure 11F shows a northeast-southwest orientated, left-flexed mature female and the degraded body of an infant in allegedly the same orientation. The row of teeth is either in front of the upper torso of the mature female, or on top of the body of the infant. Again, these teeth have been extracted from a young adult dog.

The figures above illustrate the diversity of dog remains in CWC burials. Dog teeth frequently appear in rows, although their placement on the body varies, ranging from the head to the knee. Shells and east-to-west left-flexing positions are recurring features associated with dog teeth, though not exclusively. The age groups represented are also varied, encompassing infants, children, adolescents, adults, and matures, as well as combinations of these age groups. The database includes burials with at least one human present. This suggests dog

remains are not exclusively related to single human burials. In relation to the question of the agency of dogs, to what extend could single human burials be marked as single burials with the remains of dogs?

In the following Chapter 5, the analysis of the sample data set will proceed to delineate the patterns of the human burials including dog remains. This analysis will encompass a comparative examination of various aspects including deposition types, associated remains, as well as supplementary factors such as burial goods, orientation, flexing positions, and demographic indicators. Through these systematic comparisons, patterns, or the lack of, will evolve to be discussed in Chapter 6.

5 Results

5.1 Orientation and flexing positions

The sample data set consist of 123 burials, which have been extracted from the referenced literature (Feustel et al., 1966; Fischer, 1956; Frînculeasa et al., 2020; Kern & Lobisser, 2010; Kyselý et al., 2019; Leinthaler et al., 2006; Matthias, 1974, 1982, 1987; Meller et al., 2008; Menke et al., 2017; Müller, 2011; von Rauchhaupt & Schunke, 2010). Out of the original sample data set of 123 burials the flexing position is distributed as follows: 51 of these burials are left-flexed, 10 are right-flexed, one is on its back and 61 have an unknown flexing position.

Some of the studied burials (N = 70) also have a reported orientation: the most common orientation is the E-W orientation with 30 burials, followed by the NE-SW orientation (with 18 reported burials) and W-E (with only 8 reported burials). Other less frequent orientations are ENE-WSW (4 burials), N-S (3 burials), ESE-WNW (2 burials), WSW-ENE (2 burials), S-N (1 burial), SW-NE (1 burial) and WNW-ESE (1 burial).

Figure 13 contains a table, where columns denote the found types of remains (Perri, Zoological) and the different rows denote the orientation grouped per flexing. As expected, the vast majority of CWC burial contexts containing dog remains have dental artefacts. According to the classification in Figure 8 in Chapter 4, these CWC burials are categorized as Elemental depositions. Based on the provided data, only a fraction of the total depositions (in total 7 burials) is categorized as Associated. Distinctions between Associated and Elemental burials specifically are analyzed and highlighted in subsequent subchapters. Type of deposition is one of the categories compared to other segments. From these comparisons follow patterns which will provide insight into the use of dog remains during the finalization of the burial rite, and possibly motifs.

Type of remains (Perri) and (zoological) vs. flexed/orientation	Type of remains (Perri) and (zoological)										
	associated		Total associated	Component	Total Component	elemental		Total elemental	isolated	Total isolated	Total
Orientation and flexed	bone	skeleton		bone		bone	tooth/teeth		skeleton		
?	**1**	**5**	**6**	**1**	**1**		**53**	**53**	**1**	**1**	**61**
N-S							1	1			1
NE-SW							1	1			1
E-W		2	2				5	5			7
W-E		1	1				2	2			3
?	1	2	3	1	1		44	44	1	1	49
left		**1**	**1**	**1**	**1**	**1**	**48**	**49**			**51**
N-S							2	2			2
NE-SW		1	1				16	16			17
ENE-WSW							3	3			3
E-W				1	1	1	20	21			22
ESE-WNW							2	2			2
SW-NE							1	1			1
?							4	4			4
on back							**1**	**1**			**1**
E-W							1	1			1
right		**1**	**1**			**1**	**8**	**9**			**10**
ENE-WSW							1	1			1
S-N							1	1			1
WSW-ENE							2	2			2
W-E		1	1			1	3	4			5
WNW-ESE							1	1			1
Total	**1**	**7**	**8**	**2**	**2**	**2**	**110**	**112**	**1**	**1**	**123**

Figure 12: This table shows the relationship between on the Y-axis the flexing positions and orientations and Type of remains (both Perri, 2017 and zoological typology). Of the total of 123 burials containing dog remains only 62 have been referenced with a flexing position and orientation. Most of the burials are classified as elemental (112 burials) with only teeth (110 burials). Associated and Component burials are with respectively 8 and 2 burials out of 123 quite rare.

Figure 12 shows a polar plot, where the comparative flexing positions (marked by colour) are distributed against the orientation (visualized over degrees). The figure contains three subfigures based on deposition type: Associated (A), Component (B) and Elemental (C). The Associated burials, where one or more dogs along with human interment(s) is found (Figure 13A), see a spread of three different flexing positions. Furthermore, the Component burials, which may be partially articulated, sometimes with other animals, beyond any collective dog burial area (Figure 13B), has a sample size of 1 and occurs as left-flexed. The Elemental burials, where only elements of skeletal remains of dogs are found with human interment(s) (Figure 13C) contain three different flexing positions. More notably, the Elemental burials is the only type of burial with the sample data set to contain orientations outside 45º to 90º. There do appear to be dogs that are found in burials with a W-E orientation and where the body is right-flexed (Figure 13A and C). Moreover, this W-E orientated burial is the same burial as used in the example of Figure 11C. Burial DE_ST_2 in the sample data set, excavated in 1930 in a multiple burial at Köthen (Fischer, 1956, p. 134), is the single NE-SW orientated, left-flexed burial in Figure 12A. However small, the sample data hits towards a right-flexed preference in relation to placing complete dogs within the same burial contexts, although not exclusively.

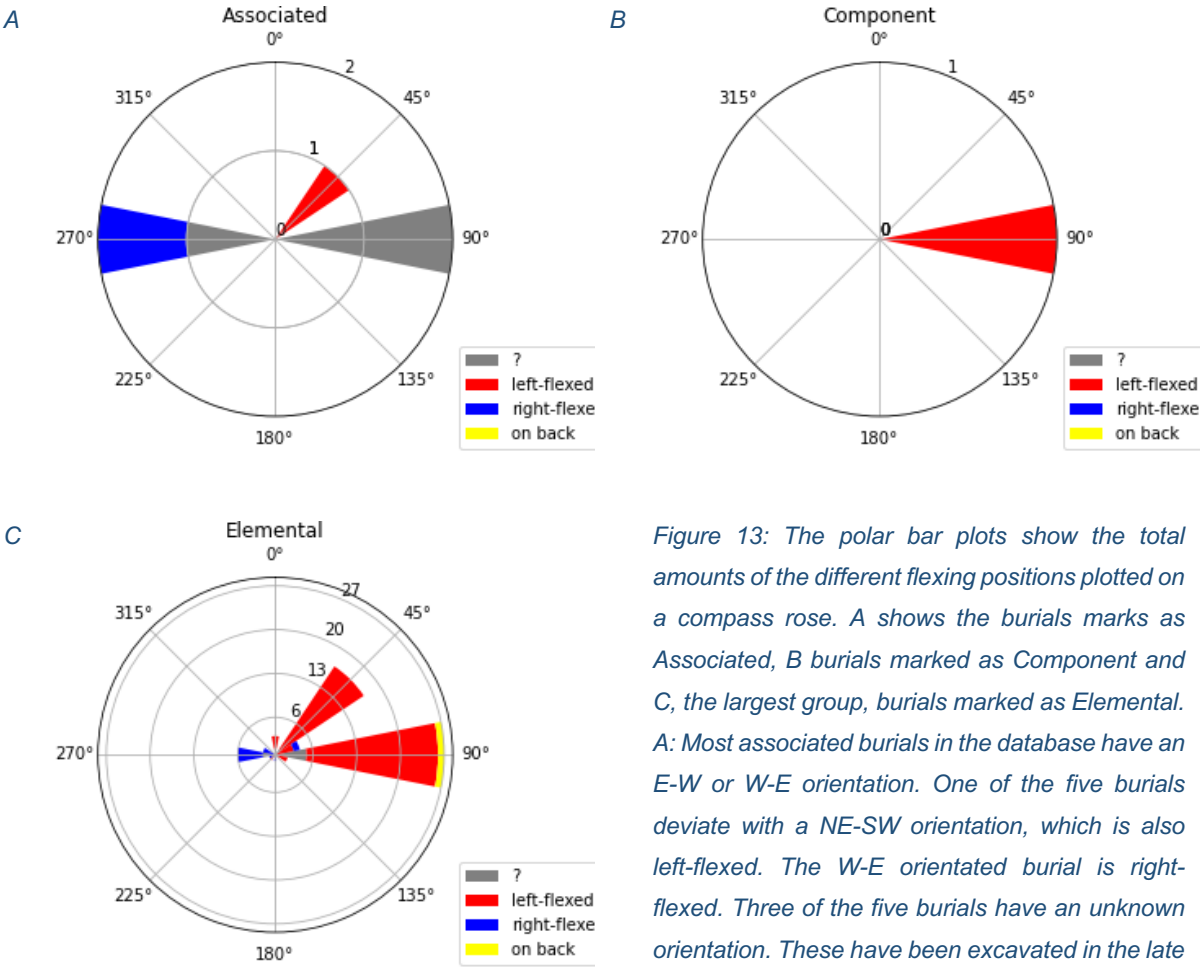


Figure 13: The polar bar plots show the total amounts of the different flexing positions plotted on a compass rose. A shows the burials marks as Associated, B burials marked as Component and C, the largest group, burials marked as Elemental. A: Most associated burials in the database have an E-W or W-E orientation. One of the five burials deviate with a NE-SW orientation, which is also left-flexed. The W-E orientated burial is right-flexed. Three of the five burials have an unknown orientation. These have been excavated in the late 1800s. B: Only one burial is marked as Component, which is a E-W orientated, left-flexed burial. C: Most Elemental burials are left-flexed and E-W orientated (21 burials) or NE-SW orientated (16 burials. The unique individual placed on the back is also E-W orientated. As opposed to A, the category of W-E orientated burials is far smaller with only 4 burials. These are all right flexed.

5.2 Type of placement, deposition and remains

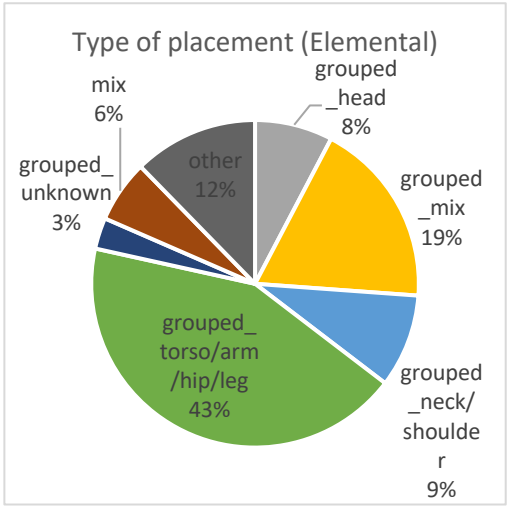
As noted above in Figure 12, most burials are Elemental burials. Out of the total number of Elemental burial (59), in only two of these burials dog bones are found, compared to the other 110 burials which contain at least one dog tooth. Figure 14 shows the distribution of the placemen to dog teeth for burials where dog remains were found. From Figure 14A can be concluded that most (grouped) teeth are located on or near the torso, arm, hip and/lor leg of the human inside the burial. From Figure 14B however can be concluded that complete dogs are, in most burials, placed at either the feet (most commonly, in total 4 out of 7), or near the feet and legs. The other burial (in total 3), markes as other, are of dogs found within human

burial complexes. Notably, two of these dogs were buried together with a horse (or potentially a bovine) (Fischer, 1956, pp. 276–277).

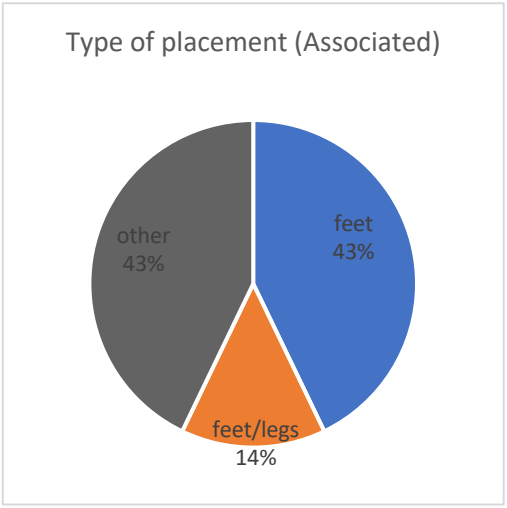
When comparing the type of placement with orientation and flexing positions (Figure 14C), single/multiple burials (Figure 14D) and age groups (Figure 14E), a similar distribution is found like that in Figure 14A. For the latter two, roughly 42% (single/multiple burials) and 33% (age groups) of the toal found teeth are found on or near the torso, arm, hip and/or leg of the human individual. This trend is commonly followed by placement on or near the head and neck/shoulder. Other placements of teeth, bones and complete skeletons of dogs are rather rare given the burials in the sample data set.

When considering the types of found dental remains (Figure 14F), again, canines are the most abundant category and occur the most frequent. Together with molars, canines are used in several placements, namely on or near the head, the neck and/or shoulder, and torso, arm, hip and/or leg. On the contrary, incisors are exclusively placed on or near the torso, arm, hip and/or leg. Canines and molars are typically used for several garments and accessories, while incisors are more selectively chosen to be sewn onto a piece or to be threaded.

A



B



C

placement Flexed/Orientation	feet	feet/legs	grouped_head	grouped_mix	grouped_neck/shoulder	grouped_torso/arm/hip/leg	grouped_unknown	mix	other	total
left	**1**	**1**	**3**	**9**	**2**	**21**	**2**	**4**	**3**	**46**
?						1	1	1		3
E-W		1	2	6	1	5	1	2	1	19
ENE-WSW				1		1		1		3
ESE-WNW						1			1	2
N-S					1	1				2
NE-SW	1		1	2		12			1	17
on back				**1**						**1**
E-W				1						1
right	**1**		**1**	**1**	**2**	**3**			**1**	**9**
ENE-WSW					1					1
S-N						1				1
W-E	1		1	1					1	4
WNW-ESE						1				1
WSW-ENE					1	1				2
total	**2**	**1**	**4**	**11**	**4**	**24**	**2**	**4**	**4**	**56**

D

.	placement									
single/multiple	feet	feet/legs	grouped_head	grouped_mix	grouped_neck/shoulder	grouped_torso/arm/hip/leg	grouped_unknown	mix	other	Total
single	2	2	3	8	4	23	1	3	9	55
multiple	1		2	3	1	5		1		13
Total	**3**	**2**	**5**	**11**	**5**	**28**	**1**	**4**	**9**	**68**

E

.	placement									
Age (category)	?	feet	feet/legs	grouped_head	grouped_mix	grouped_neck/shoulder	grouped_torso/arm/hip/leg	grouped_unknown	mix	other	Total
mature	1					1				2
mature/adult				1	1	2				4
adult	6	1	1	2	5	1	10	1	2	2	31
adolescent							1			1	2
child/infant	4		1		2	1	2		1	1	12
adult+subadult	3				2		4				9
Total	**14**	**1**	**2**	**3**	**10**	**2**	**20**	**1**	**3**	**4**	**60**

F

Type of placement	canine	canine imitation	incisor	molar	undefined teeth	undefined imitation
feet						
feet/legs						
grouped_head	2			1	3	1
grouped_mix	6	3	3	5	4	2
grouped_neck/shoulder	3			1	1	
grouped_torso/arm/hip/leg	14	4	8	5	18	4
grouped_unknown					1	1
mix			1		4	2
other	3	1	1	1	2	
Total	**28**	**8**	**13**	**13**	**33**	**10**

Figure 14: The following data illustrates the relationships between the types of placement of dog remains and other categories, namely, type of deposition, compass points, single/multiple burial and age groups. A: Graph showing the types of placements of dog remains within Elemental human burials. Almost half of the grouped rows of teeth are found on or near the body of the human. Combinations of groups occur 19% of the time, followed by the neck/shoulder and head (8%). B: Graph showing the types of placements of dog remains within Associated human burials. 57% of the dogs are placed at or near the feet of the human individual. The 'other' category included dog burials in within a human burial complex. C, D and E: These table shows a similar spread of types of placement of dog remains as A. The largest group is with 42% (C), 41% (D) and 33% (E) the grouped rows of teeth on or near the body of the human individual. This time followed by a mixed placement of the rows of teeth and, again, head and neck/shoulder. F shows that canines occur the most often and the most abundant, followed by incisors and molars. Incisors are placed on or near the torso, arm, hip and/or leg of the human and are included in the mix. Canines and molars occur in all types of placements, namely, on or near the head, the neck/shoulders and the torso, arm, leg and/or hip.

Back to bones. Skeletal remains of dogs do occur in CWC burials, though rarely, compared to the dental remains of dogs. Figure 15 visualizes the occurrence of skeletal remains on the y-axis against the orientation (Figure 15A), single/multiple burial (Figure 15B) and age classification (Figure 15C). In addition, the difference between bones (blue) and skeleton (orange) are color coded. Out of the 123 burials, only eight[1] contained a skeleton and

[1] Respectively, burial DE_ST_2, DE_ST_20, DE_ST_30, DE_ST_39, DE_ST_46, DE_ST_47, DE_TH_16 and DE_TH_17 in the sample data set are noted to have skeletal remains of one or more dogs.

five[2] have at least one bone with a deviant placement[3]. Notably, the E-W/W-E orientation of the human individual appears to have mattered for the burial rite of including canine bones, apart from one NE-SW orientation (Figure 15A). Contrarily, based on the limited sample data set, it is difficult to determine whether the flexing position had any influence on the practice of burying of the human individual. Individual seems to be the correct term, because what can be concluded is that skeletal remains of dogs occur in all but one exception in single burials (Figure 15B and C). Here, it must be noted, again, that the sample data set is too limited to conclusively show correlations between bones of dogs and burial rites in which they are used.

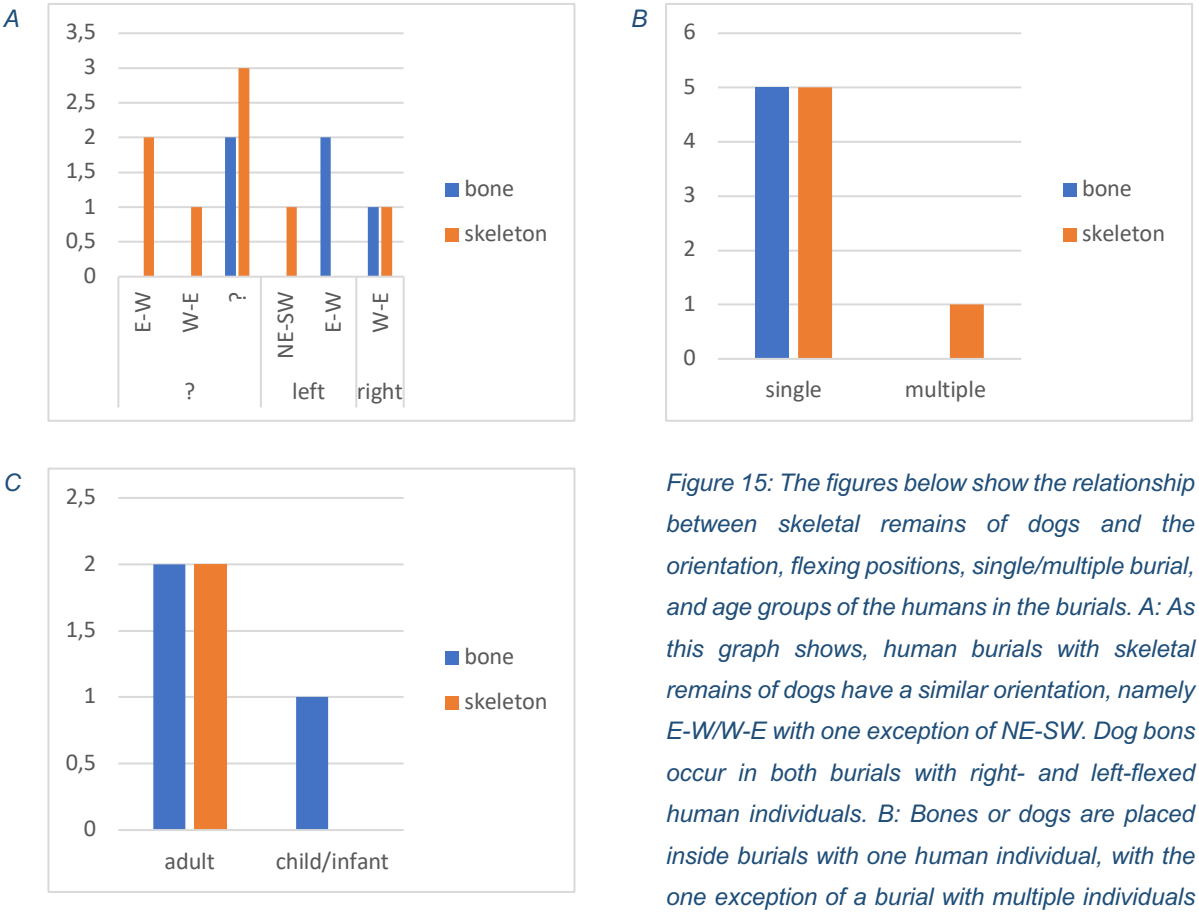
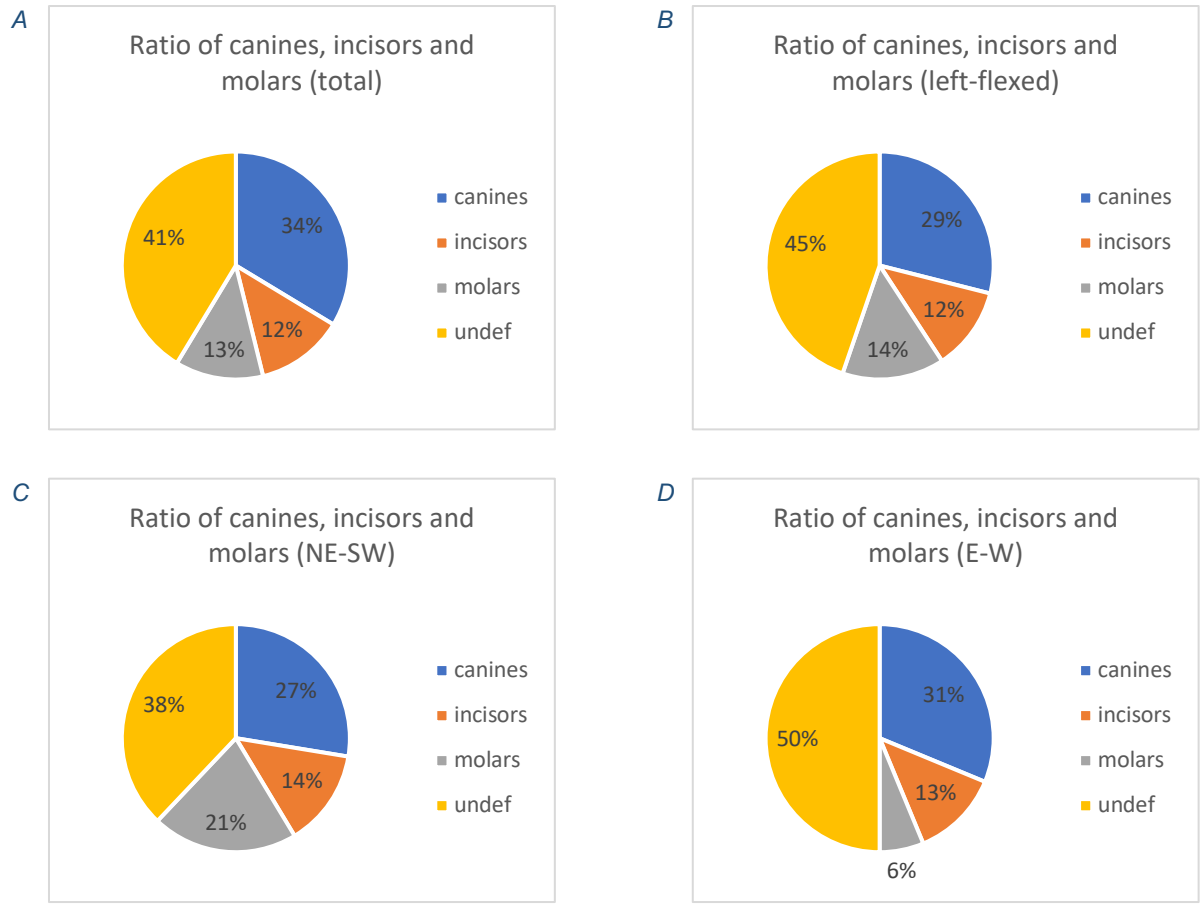


Figure 15: The figures below show the relationship between skeletal remains of dogs and the orientation, flexing positions, single/multiple burial, and age groups of the humans in the burials. A: As this graph shows, human burials with skeletal remains of dogs have a similar orientation, namely E-W/W-E with one exception of NE-SW. Dog bons occur in both burials with right- and left-flexed human individuals. B: Bones or dogs are placed inside burials with one human individual, with the one exception of a burial with multiple individuals at Köthen (DE_ST_1 and DE_ST_2 as mentioned in (Fischer, 1956, p. 134)). C: Only five burials have information about both the age group and bones of the dog. Of these five burials, skeletal remains only occur with adults and child/infants.

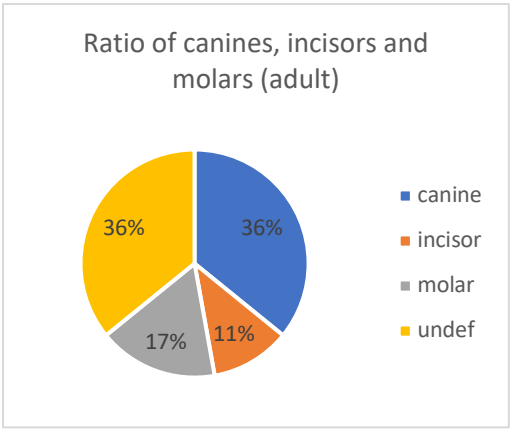
[2] Respectively burial AT_1, DE_ST_9, DE_ST_44 and DE_ST_57 DE_ST_69 in the sample data set contain one or more bones of a dog and are seemingly processed gifts, such as meat or perhaps a toy.
[3] In between the ribs of the human individual (DE_ST_57), as part of a deposition of animal bones and/or other artefacts (AT_1, DE_ST_9, DE_ST_44), right outside the wall of the burial (DE_ST_69).

As dental remains of dogs are most commonly found in the examined burials, Figure 16 visualizes the distribution of different categories of dental remains based on shape (i.e. canine, incisors, molars and undefined). These shapes include imitations, which will be discussed further. On an overall level, the most common category found in the examined burials are canines. This finding is surprising, given the dental composition of an adult dog consists of only four canines, as opposed to 12 incisors and 26 (pre) molars[4]. Regarding the latter two categories of teeth, the number of burials including molars and incisors is rather similar on an overall level, despite the number of molars in the dental composition being more than twice that of incisors. Only for burials orientated E-W and child/infant burials, molars were found to be less common than incisors. The abundant number of canine teeth suggests that these teeth were specifically chosen to be buried. In addition, for child/infant burials in the examined sample data set, canines were the most found teeth. Excluding fragments, a large group of the teeth is undefined based on their shape or low degree of preservation.

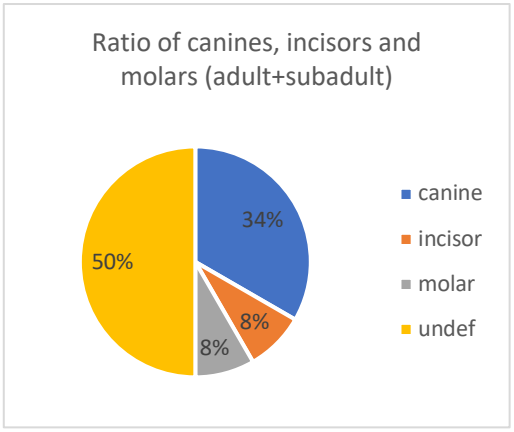


[4] Feustel et al., 1966; Kyselý et al., 2019; Menke et al., 2017; Müller, 2011; von Rauchhaupt & Schunke, 2010 all mention the age category of the dogs' teeth are extracted from is adult (specifically 3 to 5 years of age).

E



F



G

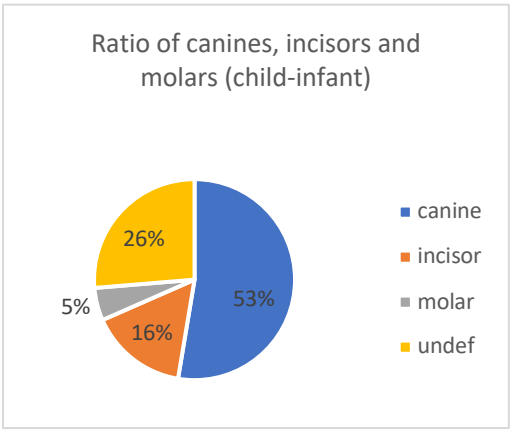


Figure 16: The graphs above show a similar occurrence of canines, incisors, and molars. Excluding the undefined teeth, canines are the largest group with 27% (C) up to 53% (G). Incisors and molars alternative for the second largest group and do occur almost equally. The only exception being the category of child/infant (G) with 53% canines, 16% incisors and 5% molars. Uncommonly, only 26% of the teeth are undefined, whereas the other groups a much larger amount of undefined teeth, up to even 50% undefined.

Most of the teeth are processed by drilling a hole through the root of the tooth. Whether these teeth were modified as part of the burial rite is a question which cannot be answered base on this sample data set. Only burials RO_1 and DE_TH_29[5] are mentioned to have use-wear marks and only DE_ST_24[6] is mentioned to have no use-wear marks. To complete this listing, only DE_ST_7 and DE_ST_64[7] contained unprocessed teeth. Altogether, this makes documentation of the excavations the sample data set is based on too limited to conclusively determine the use of dog teeth during the CW burials rites, and daily lives.

Figure 17 visualized the percentage of imitation teeth for different types of burials. Most type of burials are accompanied by imitation dog teeth, often made from bone of other animals than dog. On average, imitation teeth are found in up to 25% of the examined burials. However, significant deviations can be found (Figure 17D) in different orientations. For example, NE-SW orientated individuals receive relatively more real teeth in the burial than other orientations.

[5] RO_1 is mentioned in (Frînculeasa et al., 2020) and DE_TH_29 in (Feustel et al., 1966).

[6] DE_ST_24 is mentioned in (Matthias, 1982, p. 100)

[7] DE_ST_7 is mentioned in (Matthias, 1987, p. 151) and DE_ST_64 in (Matthias, 1982, p. 135).

More interestingly, imitation teeth seem to be found in up to half of the burials with an E-W orientation, deviating from the otherwise even distribution, suggesting a preference for using imitation teeth for specific orientations. In addition, imitation teeth are found exclusively in burials with left-flexed individuals. In total, eight right-flexed burials were examined. One would expect that out of these eight burials, up to two burials would be accompanied by imitation teeth. However, it seems from Figure 17D that imitation teeth were not found in any of the right-flexed burials. This suggests that for adding imitation teeth to a burial, there may be a preference for flexing, as well for orientation.

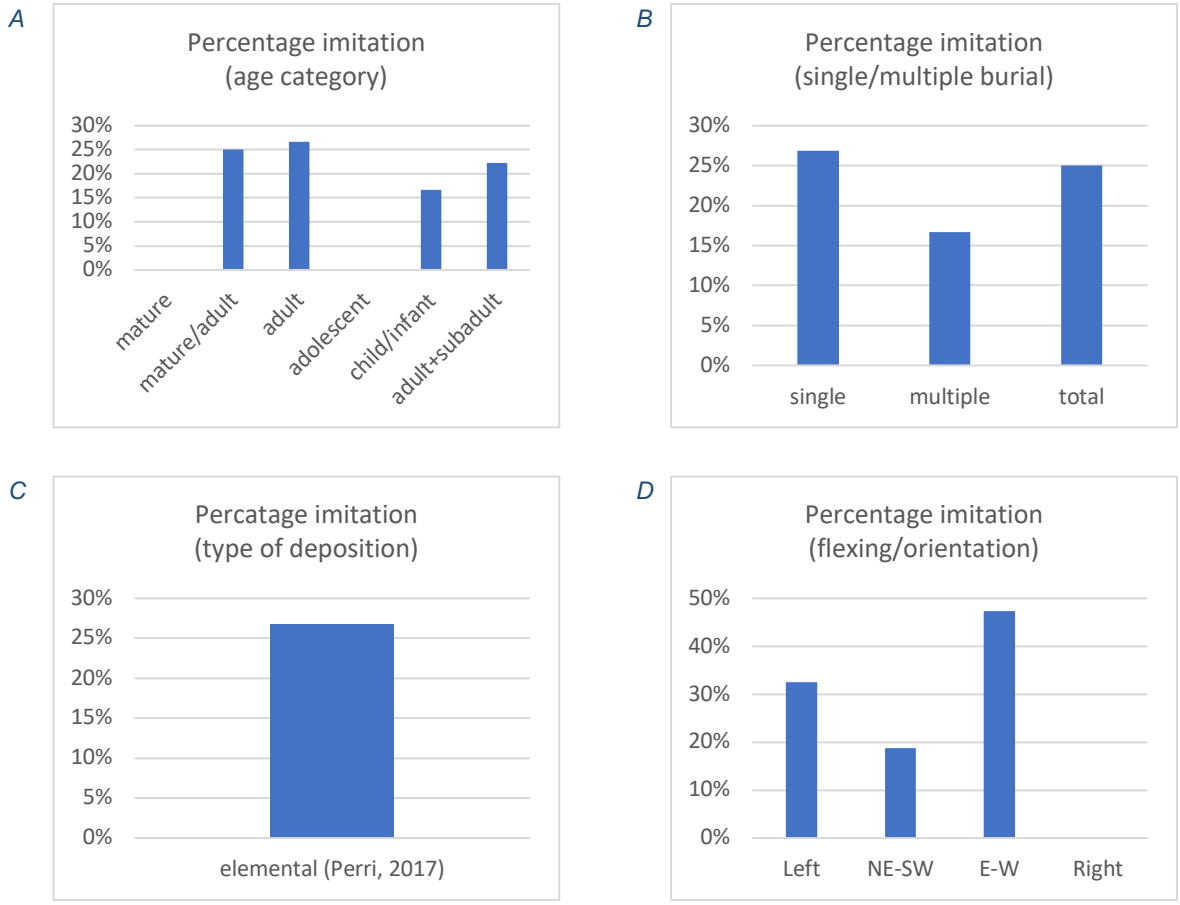


Figure 17: These graphs show the correlation between imitation teeth and age category (A), single/multiple burial (B), type of deposition (C) and flexing/orientation (D). In A matere and adolescent are with two burials too small to show the 25% of imitiation teeth. In B, only Elemental is categorized as a type of deposition, because teeth only occur within this type of deposition. In D, not all compass points have been considered. Again, other compass point are less than four burials.

5.3 Other material groups

Skeletal and dental remains of animals are not the only category of goods to be encountered in Corded Ware burials. Figure 18 shows the breakdown as well as distribution of other goods encountered in the examined burials in the sample data set. As mentioned in Chapter 4, shell

occurs often in burials with dog remains (Figure 18A and D). Other materials are pottery (which occurs in almost every burial but has also been used to date and categorized the burials as CWC), flint, stone axes, bones of other animals, copper, amber and miscellaneous. Figure 18C shows the amount of different material groups found together within one burial. The most common combination of goods is shell and pottery, although only eight burials had this combination. While shell and pottery often co-occur with dog teeth (Figure 18C), it is not significant enough to determine a standardized set of grave goods. In addition, nearing in mind that shell and pottery are the largest groups of materials in human burials with dog remains, this pairing also occurs often in combination with other goods. What can be said about the combinations is that human burials with dog remains are quite 'richly' decorated with at least one artefact of another material origin. Only 37 out of 123 burials contained purely dog remains. It is to be noted the term 'richly' is used loosely here to not imply third millennium BC peoples valued one material group over another. The term 'richly' here means that over half of the human graves contained more artefacts of other origins than dog remains within their burial.

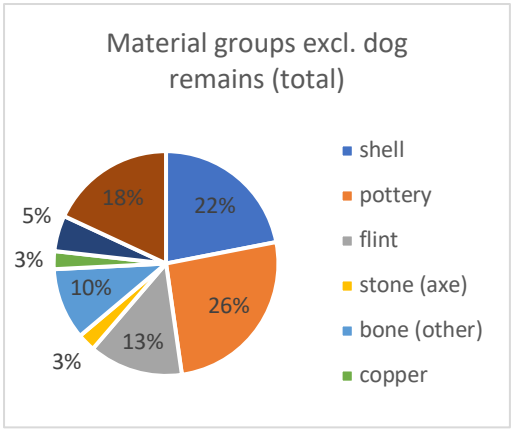
A

Material group shell	pottery	flint	stone (axe)	bone (other)	copper	amber	misc.	
associated	**1**	**3**	**2**	**4**	**0**	**0**	**0**	**3**
bone	0	1	0	1	0	0	0	0
skeleton	1	2	2	3	0	0	0	3
Component	**0**	**2**	**0**	**1**	**1**	**0**	**0**	**1**
bone	0	2	0	1	1	0	0	1
elemental	**55**	**65**	**27**	**9**	**23**	**9**	**12**	**43**
bone	0	1	0	0	1	0	0	0
tooth/tee	55	64	27	9	22	9	12	43
isolated	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**
skeleton	1	1	0	0	1	0	0	1
Eindtotaal	**57**	**71**	**29**	**14**	**25**	**9**	**12**	**48**

B

Number of different materials	Quantity
0	21
1	37
2	21
3	16
4	18
5	8
6	2
Eindtotaal	**123**

D



C

Combinations of burial goods	Number
shell,pottery,flint,copper,amber,other	1
shell,pottery,flint,copper,other	1
pottery,flint,other	1
pottery,flint,bone (other),other	1
shell,pottery,flint,other	1
shell,amber,other	1
pottery,other	1
shell,bone (other),other	1
shell,flint,copper,amber,other	1
shell,pottery,copper,other	1
shell,pottery,flint,amber,bone (other),oth	1
shell,pottery,copper,amber,other	1
shell,copper,bone (other),other	1
flint,other	1
shell,amber,bone (other),other	1
shell,pottery,other	2
shell,pottery,flint,bone (other),other	2
shell,pottery,flint,amber,other	2
pottery,copper,bone (other),other	2
pottery,bone (other)	2
shell,pottery,amber,other	2
shell,pottery,flint	4
pottery,bone (other),other	5
pottery,flint	6
shell,pottery,bone (other),other	7
shell,pottery	8
Total	**57**

Figure 18: Table A shows the correlation between types of deposition plus type of zoological remains on the Y-axis and other material groups on the X-axis. Table B shows how many combinations of different material groups occur in the database including dog remains. Table C shows which combinations of goods, excluding dog remains, occur and how many times they occur.

Figure 19 visualizes the distribution of other burial goods for different flexing positions (A and B), orientations (C and D) and age (E and F). Again, for all the types of burials, shell and pottery seem to be the preferred selection, despite not being a standard decoration. The share of found shells is significantly lower for right-flexed burials (where also no imitation teeth were found). Both shell and pottery take up about half or more of the found grave goods in any of the burial type, with child/infant burials having the largest share of shell and pottery goods. Other material groups (for example flint) occur in similar ratio compared to the totals (Figure 18C). more interestingly, copper goods are exclusively found in left-flexed burials (not in right-flexed burials) as well as adult burials, indicating a preference for left-flexed adults as opposed to children/infants or right-flexed burials. While a small percentual difference, amber was found more commonly in NE-SW orientation, as opposed to E-W orientation.

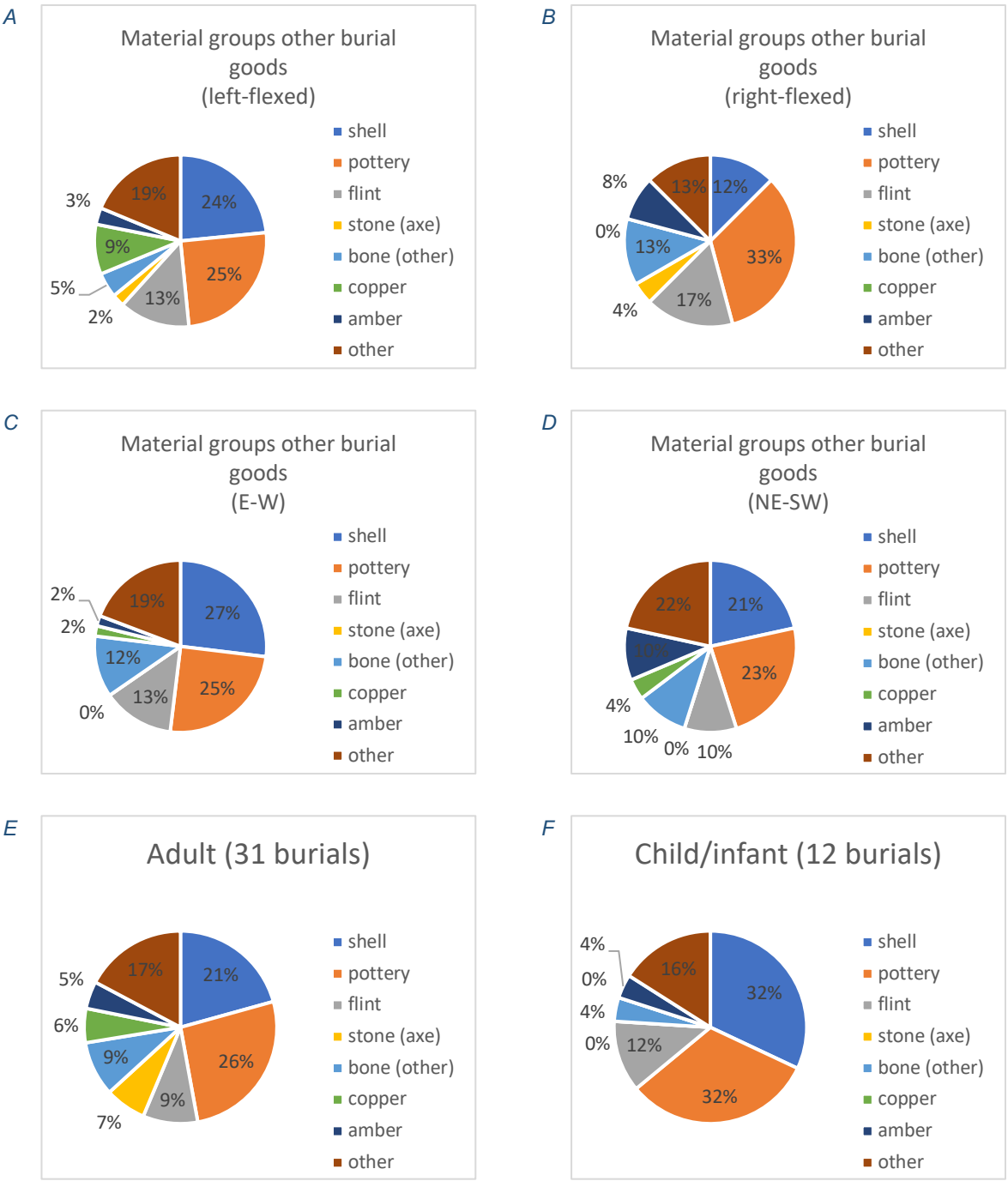


Figure 19: Only burials with other goods than dog remains are used for these graphs. Graph A and B show the correlation between different material groups and whether the human individual is left- or right-flexed. Graph C and D show the correlation between different material groups and the most frequent compass points, namely, E-W and NE-SW. Graph E and F show the correlation between different material groups and the most frequent age categories, namely, adult and child/infant. All these graphs show to be shells and pottery the most common other materials, however, not exclusively. At least eight different material groups can be placed inside CW burials containing dog remains.

5.4 Concluding remarks

Based on the 123 burials, some patterns within the burial rite are corroborated, others are refuted, and others surfaced. Firstly, the relation between types of dog remains and flexing positions. Using the examined sample of burials, it was not possible to conclude an exclusive connection of dental remains to left-flexed individuals and skeletons of dogs to right-flexed individuals. However, the data suggests that elemental depositions of teeth were strongly preferred as a gift to left-flexed, E-W and NE-SW orientated individuals in single burials.

In addition to this burial rite, the frequency of different types of found teeth were studied. The majority of accompanying teeth are canines in terms of frequency. Canine teeth were also found in different types of placements. Molars occur in similar placements, but incisors seem to be used for threading or sewing onto pieces of textile placed on or near the torso, arm, hip and/or leg. The frequency of molars and incisors was similar for different burial types. An interesting find is, however, that canine teeth are the most common teeth, despite adult dogs only having four canine teeth, as opposed to 12 incisors and 26 (pre-)molars. This suggests that placing canine teeth in a burial must have been a conscious choice as least common type of teeth, while being rooted deeply into the jawbone. Finally, molars seemed to be less frequent in child/infant burials, as well as E-W orientated burials.

Some burials were also found with imitation teeth. Canine teeth were exclusively imitated, usually made from other teeth, bone and shell. Canine teeth were likely imitated because of the low abundance in an adult dog's dental composition. From the studied burials, roughly one in four burials were accompanied by imitation teeth. However, the data suggest that imitation teeth were less frequent in certain orientations (NE-SW), and not observed at all for right-flexed individuals. This suggests imitation teeth were consciously added with a preference for E-W orientated, left-flexed individuals.

A feature what might have led to certain preferences might be linked to the ability to drill a hole through the root. Perhaps this practicality explains the preference for canine teeth, however, this has not been (experimentally) tested within this thesis. Only 1% of the teeth in the 123 burials do not show any processing marks. The question is, and remains, whether the teeth were drilled as part of the burial rite, or whether the processed teeth were used by living humans as well. Unfortunately, the data is statistically insufficient to draw conclusions about the use-wear of dog teeth.

In addition, as with canine remains, the frequency of other burial goods was studied. Shell and pottery as a combination are commonly found in burials containing dog remains, and amount to nearly half of the found additional gifts in the burial. In terms of combinations, no standardized grave set could be determined from the burials in the sample data set. Interestingly, however, is that burials in which dog remains were found, were typically

‘enriched’ by other goods. Again, enriched refers to the number of different types of materials, not a suggested value third millennium BC peoples placed on material origins. In terms of different types of burial, the distribution of shells, pottery and flint is rather uniform, whereas some other goods, such as copper and amber, seem to be buried with a preference. While the percentual differences are small, copper is exclusively found in left-flexed, adult burials without a strong bias towards orientation, whereas amber is more prevalent in NE-SW oriented burials, as well as right-flexed burials, without a bias towards age.

6 Discussion

6.1 Pattern 1: dog remains versus burial position

As the previous chapter concludes, dogs are part of the third millennium BC burial practice in Central Europe. In this first pattern, the standardization of the burial position, namely orientation and flexing position, is compared to the type of canine remains, their type of deposition and their type of placement. Not included in this thesis are the burials lacking dog remains, which are more common than burials with dog remains. Therefore, the practice of placing dog remains seem to be a local or regional addition to its CWC standardization of burial practices on a supraregional level.

Most buried humans included in the sample database are buried with an E-W orientation, or slight deviation. Converting this into degrees, rows of teeth are found in left-flexed positions with an orientation between 45º and 135º degrees. Therefore, all but four burials seem to be aligned with the rising (and setting) of the sun (Wentink, 2020, pp. 209–213). This alignment not only serves to connect these burials within a regional cultural context but also underscores their symbolic significance. The inclusion of dog remains in the context of Corded Ware Culture (CWC) burials presents a departure from the typical Yamnaya mound burials, often manifesting as single burials, which are frequently part of larger burial complexes (Furholt, 2021, p. 499). These single burial practices reflect a regional tradition that has undergone adaptation due to interactions with diverse social groups. As Frînculeasa et al. (2020, pp. 13–14) explains, these single burials represent a convergence of two distinct realms – one marked by the pan-regional influence of tumulus burial traditions (Yamnaya), and the other characterized by local expressions of social status through prestige goods in the single burials. Consequently, these single burials serve as a steppingstone in the evolution of burial customs, bridging supra-regional and local traditions (Papac et al., 2021, p. 2). While the inclusion of dog remains appears to be a regional practice, their ubiquity across different temporal and spatial contexts suggests a more complex interplay of cultural influences and social dynamics.

These local adaptations to supraregional ideas can also be seen in the set of burial goods. Unlike the mostly standardized orientation and flexing positions, based the sample data set, the (material) burial set does not seem to be standardized. There is, in fact, no indication of a standardized burial set at all. Some materials have been favoured over others, such as pottery and shell being common in burials with dog remains, and copper and amber in left-flexing burials. This adds to the hypothesis that a supra-regional practice of gifting pottery is implemented locally with its diversity of grave goods. The remains of the dog have therefore had an intrinsic value to the people who chose to deposit in into the burials. In addition, dog teeth often occur in left-flexed burials. Considering that Bourgeois & Kroon (2017, p. 13)

noticed right-flexed burials had a more standardized set than left-flexed individuals, the burial rite of females might have been more locally focused. The lack of standardization attributes to the objective of CWC peoples to focus on the individual or their family bonds (Nørtoft, 2022, p. 125). The labeling of CWC burial does, however, show a translocal linkage, manifested through the deposition of similar objects in varied combinations. As will be explored in 6.2, dog remains are part of the practice, albeit with differing placements. While the idea that is represented through dogs is spread across a large region, the implementation of the remains in burial contexts varies locally. At a local level, the burial practice seems more diverse, whereas the concept of 'rows of dog teeth' is spread across communities. The anthropological theory of translocality suggests this local diversity of practices serves to reinforce (supra-)regional bonds (Furholt, 2021, p. 511). In other words, related to this thesis, dog teeth are found in burial contexts in rows, however placement differs from the head to the knee, and in between, and therefore reinforces supraregional bonds between local communities and (descendants from) immigrants from the east.

Furthermore, Furholt (2021, p. 510) has suggested the third millennium BC people living in Central Europe built a new ideological set of values and practices by amalgamating indigenous traditions with the incoming ideas from the Russian steppes. At the start of this migratory process from east to west, local communities could have emphasized the tension between their established local ideology and the emergent steppe cultures by using and wearing highly visible artifacts of their known culture (Clark et al., 2013, pp. 416–417). Over time, typically within a few generations, these cultural markers undergo a process of assimilation and become referential. Building upon Pierre Bourdieu's social theory, Roberts (2013, pp. 459–460) explains that individuals focus on one specific field within their social capital. A new group is formed due to interactions by different social groups. Consequently, as interactions between the different social groups ensue, a synthesis of ideologies and material cultures emerges, characterized by this hybridization of objects that signify the shared experiences of multiple social groups (Roberts, 2013, p. 460). Within this process of hybridization, the indigenous traditions and the new incoming source create a new whole (Roberts, 2013, p. 452). This might point towards an old reference to the ancestors of either the travelers or locals, which is shown through dog remains.

Something you can take with you on your travels is your heritage. What ensues this spread of strengthening bonds through burial practice is migration. Individuals or small groups take their rituals, material culture and ideological with them on their travels. These cultural elements could get integrated into local contexts. Kolář (2020) illustrates this process through they diverse styles of CWC pottery. The idea or design of specific decorations are spread by the travelling individual or group, resulting in the creation of pottery with similar designs but distinct regional variations due to differing production techniques by the skill of local potters. In

addition, Frînculeasa et al. (2020, p. 12) gives another example, where a silver hair ring might represent an ancestral connection between the Yamnaya culture (form) and locality (manufacturing). Building upon the single burials mentioned above, the local production processes, influenced by external ideas, likely also impacted this burial practice. During the third millennium, the single burial was built by digging a rectangular pit, and sometimes reinforced with stone walls and plaster. Inside this burial, the placement and position of the body, and given goods got stricter over time (Papac et al., 2021, p. 2). The ideas represented by the burial ritual and goods placed inside the burial were exchanged, and bonds became more strengthened through increasing mobility. Yet, the expression of the ideas differs, because of the known practices of the local producers of the burial.

In the case of dog remains in third millennium BC burials the teeth stand out, because of its placement with east-to-west, left-flexed individuals, which are by far the largest group. The supraregional idea of left-flexing burials associated with females is therefore expressed locally with teeth of dogs occurring in various assemblages and placements (Frînculeasa et al., 2020). This is noteworthy, given that canine teeth have been associated with masculinity and hunting, for example, in the interpretation of the Mesolithic site at Lepenski Vir and the Late Bronze Age site at Krasnosamarskoe (Frînculeasa et al., 2020, p. 11). This period has also been associated with violence due to tensions as result of migration. The ideas sprung from the violence, oppression and humiliation by and between early city states from Mesopotamia might have spread into CWC Central Europe (Furholt, 2021, p. 516). If the dog motif is connected to violence, this might mean feminine characters might have played a role in this. To this day, dogs can be seen as loyal guardians. Did this gender favor more protection?

On the contrary, objects categorized as weapons are found less in left-flexed graves, than in right-flexed ones (Robb & Harris, 2018, p. 131). By following this path, the dog motif might have stood for some other idea or ideas. Gender in the third millennium BC is also not yet well understood by archaeologists today. For decennia, archaeologists categorized individuals based on a biological binary classification system of male and female (Robb & Harris, 2018, p. 129). Luckily, archaeology has tried to surpass this system for the last decades. By broadening the discussion surrounding gender and identity, the characteristics of the binary categories of male/masculine and female/feminine that were possibly part of the European Bronze Age could also be better understood (Robb & Harris, 2018, p. 132). These characteristics could then be placed in relation to communal tasks in relation to their environment. Based on the differences in burial practices, right-flexed individuals received possibly more different (less perishable) gifts than left-flexed individuals, but the left-flexed people received gifts of higher value based on the production level (Nørtoft, 2022, pp. 128–135). Relating this to the thesis, although the number of burials with dog teeth is higher than burials with dog bones, the difference between the binary genders can be seen here as well.

Whereas dog teeth are linked to east-to-west, left-flexed burials, complete dogs are placed, however seldom prevalent, with right-flexing individuals. The dog motif seems to have been plural, due to different burial traditions of dog remains. What the complete dogs and teeth might have in common, however, is their age at burial. The dogs of which the remains stem from seem to have been adult, but not mature. The age of the dog seems to have been significant.

The dog motif probably dates to before the Neolithic, whilst incoming ideas hybridized with local traditions, and therefore changed the linkage of the old motif to newly formed categories females or feminine qualities in the third millennium BC. What attributes to this argument is that the practice of integrating dog teeth within burials dates to a period of transition (Becker & Fröhlich, 2017, pp. 293–294), referring to changing ideologies, values, rites, traditions, and material culture at the beginning of the third millennium BC.

6.2 Pattern 2 and 3: placement, processing and use of dog teeth

People can express their heritage through dress. For instance, people could have differentiated themselves by wearing clothing and accessories suited to masculine or feminine expressions or other identities and personhoods (Sørensen, 2013). Societal norms may dictate that a pink attire is worn by girls, while wearing the colour blue is associated with boys. Similarly, professionals such as doctors and nurses may wear distinct garments to distinguish their respective roles. Individuals may signify their affiliation with subgroups by wearing apparel adorned with imagery or symbols representative of their interests, such as wearing the t-shirt featuring their favorite band they bought at a concert they attended. The tradition of reflecting your beliefs through dress was presumably no different in third millennium BC Central Europe.

One argument opposing the idea that daily lives of people can by understood by researching dress in burials is the perishable character of textiles in less-than-ideal conditions. In favour of dog remains, however, these items are less perishable. However, the perishable garments to which the rows were attached to could have added to their symbolic meaning. Additionally, another counterargument is the potential disparity between the representation of individuals or social communities in burial practices compared to their daily lives, because of the differences in realms. Again, this argument does not apply to dog teeth, because they show signs of use-wear (Feustel et al., 1966; Frînculeasa et al., 2020). Therefore, the tradition of dog teeth in dress could be linked to daily lives, and possibly identity, of either the individual or local community.

Another argument for identity on an individual or local communal level are the various placements near or on the deceased. In the database, these placements are categorized in head, neck/shoulder and torso/arm/hip/leg. The location of the head refers to the possibility of a headdress, diadem, cap or hair accessories (Kyselý et al., 2019; Leinthaler et al., 2006;

Menke et al., 2017). Around the neck, a necklace of teeth could be worn (Feustel et al., 1966; Frînculeasa et al., 2020; Kyselý et al., 2019; Matthias, 1974; Meller et al., 2008; Menke et al., 2017). Lower on the body different applications are suggested, such as sewn onto a shroud, cloak or mantle, made into a bracelet or other kind of band around the arm, sewn on or around knee or shin caps, and sewn onto a belt or bag (Feustel et al., 1966; Kyselý et al., 2019; Leinthaler et al., 2006; Matthias, 1987; Meller et al., 2008; von Rauchhaupt & Schunke, 2010). Unfortunately, in less-than-ideal conditions, these garments and accessories deteriorate. In addition, due to soil processes, the items within the burial can get displaced. This might point towards the high concentration on and around the body of the individual but does not exclude the possibility of diverse implementations of the rows of teeth. These many applications of dog teeth in human dress show local variability, whilst the use of teeth is stating bonds between kin or between social communities (Sørensen, 2013).

The question remains why these adornments were threaded or sewn onto a garment. Easiest interpretation is the pure decorative element of the canine ornament. In favour of this hypothesis is that the rows of teeth show use-wear marks. However, the dogs seem to have been chosen. Firstly, dogs seem to have been the exclusive animal within these burial contexts. Secondly, the age of the dog seems to have mattered. Both the preference towards canine teeth, albeit a dog has only four, and the deliberate choice of gift as lack of a standardized set of burial goods, indicate a conscious consideration. As mentioned by Frînculeasa et al. (2020, p. 11), at the site of Șoimești, teeth are selected based on their shape. This argument is supported by the sample database. Canines, despite being the least abundant per dog, paradoxically emerge as the most extensively utilized group. Furthermore, the presence of imitations in 25% of the teeth underscores the significance placed on their shape. This is the third argument to show that dogs were a deliberate symbol.

Behind the conscious consideration lays the idea what the dog remains symbolized. Both the material (dog teeth) and use (threaded or sewn onto something) signal to the special status of the burial (Frînculeasa et al., 2020, p. 11). In addition, most teeth not only show use-wear marks, but also processing marks in the way of a drilled hole. This way, the placement of a certain teeth in a specific row, in relation to other objects, might have told a story as well. The teeth are often found in relation to perforated shell objects, but are, based on the database, rarely found with other animal objects, such as boar tusks. It might have reflected the individual by life, reflected the community or reflected the marking of an event. Continuing with the symbolization, the remains could have been used to highlight the personhood of the performer in specific social occasions, of which a burial rite is one (Wentink, 2020, p. 230). The same material was used in different ways, thus signaling different identities with the same material (Wentink, 2020, p. 220).

This idea is supported by the different type of dog remains. Whereas teeth are almost exclusively found with left-flexed individuals, the same statement cannot be confidently extended to other remains, such as bones or complete dogs. This is due to lack of evidence in the sample database. In addition, the small size of burials containing skeletal remains of dogs might also refer to the rare nature of the burial tradition. What can be concluded is, again, that the placement of complete dogs is not purely ornamental, and that this tradition might have reflected another part of the dog motif. To assess the linkage between the human remains and other objects in the burial, the objects can be put into the perspective of their own agency.

7 Conclusion

7.1 Concluding the patterns

The aim of this thesis is to formulate an answer to the question: How do patterns in the deposition of dog remains in third millennium BC burial sites in Central Europe inform us about the representation of dogs in Corded Ware Culture communities? By answering the three sub-questions, the conclusion and further recommendations of thesis will be reached. The previous discussion chapter has tried to answer the sub-question: Which remains of dogs are part of the third millennium BC burial rite, what is the context of the finalization of the burial ritual, and which patterns could be drafted from this data? In short, dogs are a deliberate choice to represent both the supraregional dog motif because of the widespread use of dog teeth in dress, and it represents the local identity of a person or community, through to its various burial traditions. Similarities of the dog remains in the sample database are 1) age, because the remains stem from adult dogs, and 2) the shape of teeth, namely canines, which are being paradoxically the most commonly used teeth, but least apparent per dog. In addition, 3) in case of a shortage canines are made from other animal bones, which seems to have been 25% of the cases. These similarities might represent the important characteristics of the dog motif.

To answer the sub-question 'How does the arrangement and the type of dog remains in third millennium BC burial sites in Central Europe relate to other features of the burial, such as the placement of human remains, the age and sex of the human and other burial goods?' in short: deliberate variation. Beginning with the latter, there seems to have been no standardization in burial goodd in relation to dog remains. In relation to the human remains in the burial, the similarity is the expression of the motif in different patterns. There seems to be a link to teeth and left-flexing individuals, and complete dogs and right-flexing individuals, however the right-flexing is not exclusively causal. Teeth are placed with all age groups, but are given mostly to adults, and to adults with subadults in multiple burials. As mentioned in previous chapter, a row of teeth is a supraregional traditions and its placement on the body is local. To answer the last sub-question, Fowler's model of assessing world views as animism, totemism and naturalism, as seen in Figure 7, can be applied to get a better understanding of this change. Before getting into this, a few things need to be addressed.

Firstly, the influential work of Anthony & Brown (2017). They conclude dogs are used to symbolize youthful warrior bands based on their findings of the sacrificial butchering and consuming of dogs at Krasnosamarskoe. As we have seen in Indo-European literature, dogs have been associated with violence in the past, based on its wild characteristics. However, both wolf and dog represent other characteristics as well, such as protection, guidance, death and nurturing. It has also been disputed that wolves are purely wild. This negative view upon wolves may have arisen from incidents of wolves preying on livestock, particularly following

the establishment of sedentary social structures. Vuković (2022, p. 166) illustrates this contrasting attitude towards wolves by examining the shift within Sami communities: previously, wolves were regarded positively, but as the Sami transitioned to reindeer herding, this sentiment evolved into a negative perspective. Did the wolf loose its importance to the community? Was this changed during the Neolithic by the growing importance of cattle as a viable resources? Did the position of the dog alter in relation to this communal change, or dates the motif from before, or later?

Based on the youthful warrior band theory, the sample database would have shown more buried youthful right-flexed individuals with dog remains. However, upon examining the findings, the opposite appears to hold true. Especially dog teeth are found with left-flexing individuals of all age groups, and they are not found with weapons. Not only young males migrated (in order to be taught by nature in a wild wolf-like states), both females and other age groups also show mobility patterns (Papac et al., 2021; Vuković, 2022). Aforementioned traits associated of wolves could also be applied to feminine characteristics. For instance, Kaliff & Østigård (2022, pp. 135–137) argue that the ancient idea of the Great or Wild Hunt may be associated with feminin deities of nature and fertility, while the rituals are intertwined with the cyclicality of the changing seasons. In relation to this, Wentink (2020) has convincingly argued that the east-to-west positioning is correlated to rising and setting of the sun. This celestial phenomenon, in turn, correlates with the shifting seasons and consequently influences hunting patterns, reflecting alterations in the migratory routes of the hunted animals. Moreover, Frînculeasa et al. (2020, p. 14) argues that both the teeth of dogs and perforated shells show a relationship between the individual and nature. This argument builds upon the connection between wolves and dogs and the feminine side of nature and might have referred to ancestry.

As previously suggested, the dog motif probably predates the third millennium BC. It has been proposed that the binary classification of two sexes might have been introduced at a later stage. Augereau (2022) discusses the challenge in classifying the burial goods of the earlier Linearbandkeramik (LBK) culture as either male or female, as some objects exhibit similarities despite potential differences in associated activities. Furthermore, the prestige associated with goods by LBK peoples may have stemmed from their exotic origins, while Kolář (2020) argues that in the third millennium BC, greater value may have been placed on the production process and craftsmanship involved in creating the objects. Moreover, the shape of the goods may have been indicative of their value, leading to the prevalence of dog teeth imitations in CWC burials. This could have especially mattered for feminine characteristics, because the sample data set shows an unexpected deviation of no imitation teeth with right-flexed individuals. This might suggest rows of dog teeth were much more common for feminine people.

Nonetheless, dog remains are found with both left-flexing and right-flexing individuals. The relationship might have been genderless, although specific characteristics of the dog were feminine or masculine. Rather, it is plausible that these dog remains denote a certain practice, with age serving as a more pertinent factor (Fowler, 2004, p. 82). Activities, such as hunting, nursing and protecting, might have more to do with age than sex or gender. Following this thought, the wild dog motif does not apply, given that dog remains are found across various age groups, ranging from infants to adult and mature individuals. In addition, this diversity of age groups shows a lifelong bond between dogs and humans.

7.2 From animism to totemism

This brings us to the last sub-question: To what extent do the patterns reflect the dog-human relationships in the third millennium BC, and what does this suggest about the symbolic role in these burial practices, or even the agency of dogs? My hypothesis is that the representation of dog remains in CWC burials is a reflection of the changing world views due to migration. The dog motif refers to this change and to ancestry, while functioning as a beacon to hold onto. Third millennium BC Central Europe seemed to have been under the pressure of change due to social interactions (Papac et al., 2021, p. 10). By comparing Fowler's model of world view (Figure 7) to the burial tradition, a similar transition is noticed, from animism to totemism.

Following the model, 'the nature of identity' excludes naturalism, because personhood of dogs cannot be excluded. Whether this relationship between the left-flexed individual and dog remains is dialogic (animism) or communicate from 'what they are' (totemism) is, however, hard to deduce from the evidence presented. Both complete dogs and transformed remains have been encountered in the burials. However, the lack of complete dogs does not suggest the animal is not seen as an equal. Perhaps another world view from the earlier LBK communities might have classified the persons in the burials differently. Taking it a step further, the older frame of animism as held by hunter-gatherers, dogs and humans could have been in an equal dialog in the space they occupy. Certain characteristics of wolves are also observed in humans, such as "pair-bonding, staying together throughout the year (not just for mating season), communal care and training of offspring, extended family groups, group cooperation, leadership hierarchies, and the sharing of food with kin" (Vuković, 2022, p. 166). Therefore, dogs represent a multitude of qualities. Or did dogs have one all-encompassing motif?

This brings us to 'life energies'. At the beginning of the third millennium BC, things changed, both in the physical and spiritual realm. Dog remains express the life energies of the ancestors, of both the indigenous group and of the Yamnaya-culture. The local communities refer to their sedentary ancestors and the value of dogs to sustain their lifestyle. The immigrants refer to the Yamnaya-culture, because of the migratory character of wolves and

wild dogs over vast distances (Vuković, 2022, p. 162). Ideology is taken with immigrants, because it is easy to carry, offers emotional support, and serves as an anchor for collective identity and distinction (Ahola, 2020, p. 115). Simultaneously, indigenous groups gain access to new supernatural powers because of contact with these immigrants (*ibid*.). It hybridized into a diverse practice of dog remains in burial contexts we have seen in the database that refers to ancestry and bonds the local communities and the immigrant. Especially the old dog motif of guide could help the people to connect spiritually. This would lead to a totemistic world view.

The 'form' (shape of the object) 'transmitting' the idea leads to the same totemistic world view. This can be concluded by canines being 25% imitations. The shape of the canine is of importance, not necessarily its origin. This initial value transitioned from the use of the object referring to an event, such as dogs and humans hunting alongside each other, to a supraregional ideology in the third millennium BC told through the shape of the canines of dogs worn by the living and dead.

As mentioned, a sharing a reference to ancestry creates the 'sense of community'. This community, and therefore their world view, is in transition from animism to totemism. The idea is shifting from humans being part of nature where humans and wolves are equals to a communal understanding of the dog-human relationship within a community with boundaries. With totemism, the dog is referred to as dog and its shape. In this transitional phase from animism to totemism the teeth of dogs refer to the animal and their characteristics as well. The shape is theirs but its only one part. In addition, the implementation of the teeth is various, therefore referring to social differences, or even boundaries between communities.

Lastly, 'the attainment of personhood'. Again, naturalism can be excluded. This, because the personhood of dogs cannot. Dogs are not seen as liminal, but as transitional, just as their human counterparts. Within the context of the Great or Wild Hunt, dogs serve as companions for traversing boundaries. Communication with these transformative spirits is restricted to specific individuals and circumstances (Fowler, 2004, p. 66). Furthermore, concluded on anthropological research, spirits are seen as predators which also prey on humans. This characteristic shared by wolves and dogs. To interact with these spirits, talisman objects of the animal could be used to connect. These totemistic expressions can also be worn by the specific individuals, in certain social situations, to symbolize kinship relations and facilitate other social connections (Fowler, 2004, pp. 117–119).

To conclude, identity and personhood of dogs excluded naturalism and the visibility of the reference to a hybridizing ancestry shows the shift from animism to totemism. This totem in the shape of dog remains can be touched and can therefore give strength in a turbulent time of change for both the locals and immigrants to hold onto and to find a common ground to share. With the use of rows of dog teeth on garments and accessories, both boundaries are expressed. One boundary all-encompassing the supraregional communities and

simultaneously boundaries between local communities. Perhaps this was a way to cope with conflicts inflicted by the changes, to both bring people together within the supraregional ideology and mark the limits of the local communities when certain boundaries are crossed. Whatever your gender, age or other characteristic, this type of protection or guidance can be given to all.

7.3 Future directions

The dog-human relationship is intertwined with the lives of both species in third millennium BC Europe. The patterns in the deposition of dog remains in third millennium BC burials are a visual representation as a beacon to hold onto in a time of change of the Corded Ware Culture People. It refers to both local sedentary ancestry and the Yamnaya-ancestry of the immigrants from the east. It refers to mobility in the physical world (migration), in the spiritual world (transitioning ideology) and in the afterlife (from wear in daily life to burial practice). Within this transitional phase, different applications of the dog motif are found.

In order to get a better understanding of the dog motif and dog-human relationship in Corded Ware Culture Europe a few directions are presented. As shown in this thesis, dog remains, especially dog teeth, are not a representation of the *Männerbunde* as argued by Anthony & Brown (2017). This brings me to the first direction, to understand third millenium masculine and feminine characteristics, and their connection to dogs. Both right-flexed and left-flexed individuals are found with dog remains, whoever not every human burial contains these. Based on isotope analyses, female-sexed individuals tended to travel on a local-to-regional scale, whilst male-sexed individuals had supra-regional migratory patterns (Furholt, 2021, p. 506). This migration pattern on a local-to-regional scale is supported by the argument that linguistic features of the patrilocal and patrilineal PIE-language (Pronk, 2023). Stockhammer (2023) suggest, based on his research of the Lech Valley, which is outside of the scope of this thesis, that there are different migratory patterns based on the location females grew up. Local females buried at Lech Valley burial complexes seems to shift towards more Neolithic DNA, whereas immigrated males shift towards mostly to exclusively Yamnaya-DNA. Stockhammers suggests that local females are disconnected from their communities to birth children, whereas societal females of status functioned as wet nurses who raised the children elsewhere. This practice could explain the genetic link between CWC peoples and the Yamnaya-culture peoples spread across Europe, as suggested in the mass migration theory by Kristiansen et al. (2017), however in varying degree of DNA-mixture locally as suggested by Furholt (2021). Through the burial tradition in the third millennium BC, both the supraregional spread of the CWC culture and the significant influence of local travelers can be explained (Bourgeois & Kroon, 2023). Burial practices spread across burials with a distance

from 700 km showed 97% similarities, which decreased with the distance becoming shorter (*ibid*.). The complexity of the CWC phenomenon could also be seen in the burial practice of dog teeth.

This brings me to the next direction, the representation of the local community through their burial practice, and therefore understanding the agency of the items in the burial individually and, simultaneously, their dialog during and after the act of the practice. The new dog motif referring to ancestry is spread supraregionally as part of the CWC. Because the percentage of similarities between left- and right-flexed burials is high, the ideas represented through this practice spread were known across the continent, and perhaps further. This ideology was spread through local and regional travelers who implemented the visual representation of dog remains. This implementation can be deduced from the differences in dress, namely by the garment the row of teeth was placed on and where on the body it was worn. Isotope-analysis on the human remains in the sample database of this thesis could point out whether these left-flexed individuals with rows of dog teeth travelled locally, travelled (supra)regionally or have never travelled at all. In addition, the dog remains could also show the migratory pattern of the dog. Perhaps the bond between the dog and its human could have been represented as well. If it is not at all represented, individuality is also not a characteristic of this burial practice, attributing to the hypothesis dog remains refer to communal ancestry. Perhaps the human remains had a similar function, to refer to a communal feature, instead of to the status of an individual.

The third direction is understanding the characteristics of age groups in third millennium BC communities. Not only could there be a link between dog remains sex or gender, but there also seems to be a correlation between dog teeth and specific age groups as well. In the instances where the age of the buried human has been determined, adults in single burials and adults plus subadults were preferred. Stockhammer (2023) suggest, based on the aforementioned research in the Lech Valley, that subadults of especially the male sex, however not exclusive, travelled greater distances. Again, isotope analysis of burials with dog remains could show us the correlations or differences between humans receiving dog remains inside the burial. Did certain shapes or remains refer to a specific event or location? Or could the dog be the leading factor as a symbol of something greater, whereas the human individual is the guide and guardian of ideology?

The dog motif seems to be in transition, at the same time the third millennium BC sees a lot of changes due to migration. To get a better understanding of this, the last suggested direction is to understand from what ideology the dog motif transitioned out of. The previous ideology might show the characteristics of the ancestry the dog motif holds in the third millennium BC. What ideas, values and symbols were kept by the CWC peoples, and which were altered, discarded or forgotten? Does the agency of the dog and its perception by

communities also change during this period, and how is this represented in the different types of burials, i.e. complete dogs, processed bones and processed dog teeth? What does the age of the dog tell and what marks the transitional practice of the extraction and drilling of dog teeth? The teeth also show use-wear marks and are arranged in numerous different rows. This leads to the question when the row of teeth had reached its final form and could be placed inside a burial. These questions and directions will lead to a better understanding of the dog-human relationship in third millennium BC communities in Central Europe, and perhaps to understanding the supraregional-to-local effect of immigration on hybridization of ideologies.

8 Abstract

Central Europe during the third millenium BC is characterized by changing cultures and high mobility. One of the cultures at the start of the millennium is the Corded Ware Culture (CWC), deviating from the Neolithic farmers and inheriting cultural traits from the Yamnaya-culture in the east, such as language, ideology and burial traditions. One of these burial traditions is the placement of dog remains in CWC burials. In previous research, dog teeth have been noted to be jewellery, purely aesthetic. These artefacts are also linked to the female gender. On the other hand, complete dogs are linked to the male gender and are noted to be higher valued as representation of the third millennium BC ideology. These conclusions are drawn based on the excavated burial complex, and perhaps one other correlated complex. At the time of writing this thesis, the archaeological research is lacking an overview of dog remains in CWC burials in Central Europe, and therefore a (supra)regional understanding of the dog motif.

This thesis aims to elevate the practice of dog remains in burials, and therefore the dog motif, to a level higher than 'just ornamental' by answering the research question: How do patterns in the deposition of dog remains in third millennium BC burial sites in Central Europe inform us about the representation of dogs in Corded Ware Culture communities? With the sample data set of CWC burials from Central Europe patterns are traced by comparing burial types, orientation, flexing positions, age groups, types of remains and their placement within different types of depositions, and other burial goods. Based on these patterns, the thesis argues that the dog motif transitioned into referencing ancestry of both local Neolithic farmers as of the Yamnaya-nomads through a process called hybridization. The motif is linked to the high mobility of the period, due to the migratory character of wolves. The material representation functions also as a beacon for travelers, and as a mode of storytelling to mark boundaries the traveler is also part of or warned not to cross. The supraregional motif is spread, however, the implementation of the practice of wearing dog teeth is locally different. Especially canines were telling markers, because their shape was imitated in other animal bone in 25% of the burials. These were only encountered with left-flexed individuals, whereas the complete dogs seem to be linked, although not exclusively, to right-flexed individuals. The burial practice of placing dog remains in CWC burials could be one of the signs of the transformation from Neolithic Europe to the Early Bronze Age.

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