Object Analysis: The Ryemarksgård Bone

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Abstract

The primary aim is to present as full a prehistoric picture of a particular object, the Ryemarksgård Bone, from the Danish Maglemosian (9000-6400 BC), as possible, using previous academic literature, though limited to original, or translated into, English language centric published works. The depictions incised on the Ryemarksgård Bone, a mainstay focus of the surrounding academic anthropological, archaeological, and historical literature, are understood to belong to a timeworn symbolism of a prehistoric northern Europe. The manifestation of something of a cultural-dyslexia on our part, has meant that the debate over their definitive meaning, lost, is still theoretical. This work seeks not only to evaluate, but also to elaborate on this body of research, without straying into the Romantic, and offer a contribution toward a greater understanding of this particular object and, in turn, of the people of the Maglemosian Period. In this same way, by the close reading of the source material, a modern interpretation, such as the object's current presentation and its continuing cultural import, is also alluded to throughout. The work suggests that each culture could be described as having its own logic. Therefore, to 'go prehistoric', aspects of today's scientific rationalism, used to explain the natural world, has been used in conjunction with disciplines belonging to the arts in the attempt of decoding certain of the beguiling practices of prehistory, the mystifying elements of human nature interpreted as being outside of this world. To achieve in a discussion that surveys degrees of human irrationalism without veering off into the non-sensical is of course a difficult task, a work that holds academic credence as opposed to a creative piece of writing is also an aim. The environmental and cultural impact of charismatic megafauna, in particular, the aurochs (*Bos primigenius*), is a cornerstone of the presented work. The harvested materials, gathered from the hunting of such beasts, as well as specific materials used in the relating processes, namely, another of this work's foci, flint/chert. The tracing of technological steps and the evolution of practice are also topics of discussion. In addition to Maglemosian examples, to best understand, for instance, the cultural impact of a shared environment or the fluid nature of want in material properties, it has been deemed pertinent to include comparative evidence from other groups and epochs of Europe, from the depictions of aurochs in the caves of Lascaux to the medieval tradition of East Anglian flushwork. Ultimately highlighting

how the construction of narratives maintain a continuing relationship with our prehistoric selves.

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Master's Degrees by Examination and Dissertation

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Introduction

This work is an examination of certain aspects and methods of the analytical processes which constitute an object analysis to which, central to this work, is an object analysis of the 'Ryemarksgård Bone'. This work is a whole in that it has an introduction, literary review, summary, etc. conforming to the requirements, or template, of an MA Dissertation. However, it is no further along than just a beginning. 'Sequence', is integral to the said work and therefore the decision was to offer the reader the beginnings of several (else, the importance of the sequence would be diminished). Frustratingly, the complete *chaîne* (though it could be argued that for this particular object it has yet to end) does not fit within the confines of this particular set word count. The 'beginnings' are beginnings of sorts; these themselves have beginnings which have not been included, again for lack of space and to remain within the realms of the discipline of ancient history (though these further beginnings are alluded to throughout). The potential trajectories (or continuing links) of certain sequences are briefly discussed in the summary.

Once the Ryemarksgård Bone was chosen as the focus various starting points presented themselves:

- '*The Stone Book Quartet*' by Alan Garner, in which Mary's father (both Mary and her father are relations of Garner's) describes History as an amalgam of 'time and arithmetic and sense'.[1] We will meet Garner's characters and Garner again, his ideas being influential to other areas of this work.

- A poem by the cosmic philosopher, composer, and bandleader, Sun Ra called '*I am an Instrument*' (see: **Appendices – '*I am an Instrument*' by Sun Ra**).

- A counter argument of T. Douglas Price of a belief that was perhaps only contemporaneous to himself and his work, that 'contrary to the historical picture of the Mesolithic as "artistically bereft" decorative art and ornamentation appear

[1] Garner, 2006, p.18.

throughout the Danish Mesolithic'.[2] This work certainly aligns, and concurs, with Price's assertion.

The aim, of what follows, is to bring these ideas together, establish, and extrapolate, using the Ryemarksgård Bone as a point of convergence and is presented as such; having been divided into 5 sections, the introduction, contains methods applied and certain foundational ideas (the inspiration). The first chapter directs attention onto influencing environmental conditions, the 'scene', in which the major players (human, material) find themselves, noting the timeline. The second is an object analysis presented in the form of a literary review. The centrepiece is an aurochs metatarsal decorated with incisions which form the earliest Danish example of anthropomorphic representation from the Maglemosian period, coined the 'Ryemarksgård Bone'.[3] The analysis, governed by the supporting literature, concentrates on the various interpretations of the incised depictions by those who have put forward previous hypotheses regarding their symbolic meaning. The third, those of matter (flint, bone), and sequences (templates of analysis), are foci. Chantal Conneller's '*An Archaeology of Materials*' has been heavily relied upon as a guide for the basis of forming arguments which are either in-line or contra to. Finally, the summary, lamenting the lack of space offers briefly, areas of possible continuation of the various sequences, set out in the main body, which begin to build an interpretation of the relationship to Ryemarksgård Bone (a template for prehistoric objects) from a modern sense and perspective.

[2] Price, 1983, p.769.
[3] Jensen, 2013, p.70.

Chapter 1: Environment – The Development of a Maglemosian Scene

It is deemed necessary to orientate the reader within, not only a definition of the physical scene, from a geological perspective, but also from a temporal position, as well as introduce certain *dramatis personae*. This being only preliminary, certain of these aspects, especially the scene and its inhabitants, will be further developed throughout the whole work.

The 'gradual melting' of the Pleistocene glacier, 'completed in the 7th millennium BC', impacted the Globe's physical shape (and the landscape's topography) through the release of the incredible pressure this mass had exerted.[4] The shift caused by these events, one the consequence of the other, meant not only the submergence of lowland areas, but also the gaining of altitude in others ('isostatic rebound').[5] As Stefan Kozłowski states this meant the 'disappearance of traditional bridges and oecumenes and the appearance of new ones'.[6] The importance of these events cannot be underestimated, as Kozłowski adds, 'these processes should be kept in mind when considering the Mesolithic history of Europe'.[7]

The shift from 'Pleistocene tundra' to 'new forest environment' meant the 'abundance of green mass available in this biotope stimulated' an explosion of fauna, which in turn fed an adapting humankind which seized an opportunity.[8] Kozłowski suggests this had a social and cultural impact, being that the 'apparent cost of this abundant life without stress' led to 'a resistance to novelties and a closing to the world'.[9] Kozłowski states further that 'Mesolithic communities were extremely conservative, highly specialized, lasting almost unchanged through millennia, living in [a] tribal, very local system, following seasonality, and practicing individual hunting'.[10] This 'isolation' allowed time to create, and birth the formative beginnings of a new unique cultural doctrine and practice.

[4] Ed. Djindjian, 2022, p.59.
[5] Ed. Djindjian, 2022, pp.59-60.
[6] Ed. Djindjian, 2022, p.60.
[7] Ed. Djindjian, 2022, p.60.
[8] Ed. Djindjian, 2022, p.55.
[9] Ed. Djindjian, 2022, p.56.
[10] Ed. Djindjian, 2022, p.54.

‘It must have been a paradise on Earth’ – Stefan Kozłowski.[11]

As is often highlighted, divisional definitions concerning historical time rarely generically, globally, coincide.[12] It is also problematic to attach these catch-all time frames, again generically, to such things as cultural beginnings of... .[13] Various problems arise in doing so, stressed by Douglas Price some examples being, regarding the Mesolithic, that ‘the Mesolithic is not associated exclusively with the utilization of microlithic tools, nor with the exploitation of forests and coasts, nor with the domestication of the dog’.[14] This section of this particular work follows Price’s example of using such terms ‘only in a temporal sense with local connotations’, unless explicitly stated otherwise.[15] Specifically, the periodic definitions of the Danish Mesolithic (themselves subdivided) being the Maglemosian 9000-6400 BC, the Kongemosian 6400-5400 BC, and the Ertebølle 5400-3900 BC.[16] In Addition, the human occupants of this specific time and space (the Mesolithic - ‘simply that period of the Postglacial prior to the introduction of agriculture’) have been coined ‘Postglacial hunter-gatherers’/‘Holocene foragers’.[17]

‘We call the people who walked the wooded land in the first millennia after the end of the Ice Age the Maglemosian hunters.’[18]

A Shared Space

Key species to this environment, and its people, sustaining, sustained by, and in turn influencer on the conditions, was the aurochs.

The aurochs seems to have a place on the quasi-mythological animals list, beside the mammoth and the dodo (amongst others). Along with the mammoth the aurochs is due an

[11] Ed. Djindjian, 2022, p.55.
[12] Price, 1983, p.762.
[13] Price, 1983, p.762.
[14] Price, 1983, p.762.
[15] Price, 1983, p.762.
[16] Jensen, 2013, p.36.
[17] Price, 1983, p.762.
[18] Jensen, 2013, p.54.

apparently imminent and spectacular reincarnation down to humankind's intervention, through the hopeful results of the technical biological wizardry of gene piggybacking and programmes of selective breeding. For the uninitiated and the non-gene sequencing biologist, think of an amalgam along the lines of Michael Crichton's 1990 science fiction novel, *Jurassic Park*, and Sir Ian Wilmut's 'Dolly the Sheep'.[19]

The reading of a nuclear genome provided by 'a 6750-year-old fossilised aurochs from the United Kingdom', has determined the closeness of breeds such as the taurus which with further selective breeding, or 'back-breeding', as stated, has enabled the potential to create something even more 'aurochslike'.[20] The scientific possibility of producing an exact aurochs does exist, through cloning, though the necessary samples of fossilised remains containing the required information ('an intact set of original chromosomes') have yet to be found and extracted.[21] However, projects such as the Taurus Foundation specifically state that it 'stays away from experimental but also more controversial techniques such as cloning or DNA-editing'.[22] This suggests that these techniques in reality 'would only lead to one or a couple of individuals, neglecting the complete variety that still exists in so called primitive cattle'.[23] (See: Jones, S. and van Loon, B. (2011); Mukherjee, S. (2017), for the controversies surrounding such techniques)

The results of modern conservation efforts and projections (modelling) can be a useful tool in setting past scenes, used in conjunction with the geological and archaeological records. For example, Erik Stokstad highlights a rewilding project in Sfântu Gheorghe, Romania, where the aim is to convert 'millions of hectares of abandoned farmland' into 'diverse grasslands'.[24] A key piece in the project's jigsaw in reforming and maintaining this past landscape (biome) is the reintroduction of the aurochs (or something akin, the taurus), produced via methods such as 'cross breeding' and the resulting 'gene collecting' (within the animal through succession), as mentioned above.[25] The movement and grazing of these

[19] Crichton, 2015; Griffin, 2013, online.
[20] Stokstad, 2015, p.1145.
[21] Stokstad, 2015, p.1145.
[22] Ed. Sandom, 2014, p.17.
[23] Ed. Sandom, 2014, p.17.
[24] Stokstad, 2015, p.1144.
[25] Stokstad, 2015, p.1144.

'heavyweights' is expected to 'prevent forests from encroaching' over the earmarked site.[26] Certain examples of the impact on the biodiversity this integral species ensures, are that the existing wetlands and reedbeds, vital for certain species of bird, remain, to sustaining such predatory species as the Eurasian wolf.[27] Their roaming and habits allow 'light-requiring plant species' beneficial to a myriad of insect life, as well as the waste these animals produce as they go being vital to the worlds belonging to insect life (again), the fungal, all the way down to the microbial.[28] As Margret Bunzel-Drüke and Rainer Luick confirm, during this Quaternary epoch these necessary beasts (large herbivores) 'have played and continue to play, a central role in the formation of numerous biomes' and their 'functional existence'.[29]

Ultimately, the 'negative feedback' from hunting which influenced the 'population structure and behaviour of [these] megaherbivores' accompanied with the animal's eventual domestication led to its extinction (for greater scientific analysis and discussion on the 'megaherbivore hypothesis' see: Ed. Sandom, 2014; Bunzel-Drüke and Luick, 2024).[30] The last aurochs died in 1627 in today's Poland.[31]

Discovered remains suggest a standing height, at the shoulder, of nearly 2 metres and weighing somewhere around a metric tonne with horns spanning well over a metre, the aurochs was certainly a mighty and formidable beast.[32] Early extant depictions of the beast date back as far as '17,000 years ago' (for example, in the French caves of Lascaux).[33]

The ideas of rewilding, conservation, and the bringing back of…, serve to highlight the impact humans have had, and potentially can have, on an environment, whilst also highlighting the emotional relationship and impact between humans and this particular animal.[34] The application of these efforts, and the generated experience, it is hoped will

[26] Stokstad, 2015, p.1144.
[27] Stokstad, 2015, p.1145.
[28] Bunzel-Drüke und Luick, 2024, online.
[29] Bunzel-Drüke und Luick, 2024, online.
[30] Bunzel-Drüke und Luick, 2024, online.
[31] Ed. Sandom, 2014, p.16; Stokstad, 2015, p.1145.
[32] Stokstad, 2015, p.1145.
[33] Stokstad, 2015, p.1145.
[34] Stokstad, 2015, p.1145;

'protect, maintain and restore wild nature while also providing enhanced social and economic opportunities for human society'.[35]

[35] Ed. Sandom, 2014, p.3

Chapter 2: Literary Review – A Recapitulation of 'The Ryemarksgård Bone' (^{14}C-dated to *c.* 8000 BC.[36])



Figure 1.

The key within the object which is coined the Ryemarksgård Bone ('the Bone' from here on in) which is intelligible contemporaneously, today, is the object's anthropomorphic nature, both of its creator/s and its symbols. There is often something universally understood that connects observer and object, to the past, to other worlds, to the ethereal. Has humankind ever produced anything completely alien to itself? Is it ever possible, or is there always something that betrays the object's maker? Therefore, the Bone could also, in certain respects, be considered a contemporary object with prehistorical beginnings.

Human activity, the access to, and gathering of, materials, outside influence, and circumstance create objects such as the Bone. The Bone's situation in time, for this analysis, requires a division into moments, given its lengthy, continuing, existence: from creation and use, abandonment, a phase unremembered, and eventual rediscovery. Having now accumulated time it has taken on a life of its own, separate from its creator.[37]

A succinct history at the start of Charlotte Leduc's 2012, '*Ungulates exploitation for subsistence and raw material, during the Maglemose culture in Denmark: the example of Mallerup site (Sarauw's Island) in Sjælland*', [the title pertinent to Sarauw's influence on the discipline in Denmark, hence its inclusion in text] 'the Maglemose culture was named after the excavation of Mullerup, located in the 'Magle Mose' peat bog in Zealand (Denmark), in

[36] Dreswsen et al., 2024, p.4; Gleba and Mannering, 2012, p.94.
[37] Gaddis, 2003, p.15.

1900 by G. F. L. Sarauw', informs of the beginning (and continuation) of a narrative and the attempts at an understanding of these people, their culture, and its history.[38] Sarauw's interpretation of his site, according to Leduc, was one of settlement, 'based on the abundance and diversity of archaeological material' highlighted by 'a wide range of activities such as lithic production, bone tool manufacture, and subsistence activities'.[39] Later archaeology of that Century (20th), and continuing, concurs. Two distinguishing features of the Maglemosian from previous periods (e.g., late Palaeolithic) in the area (southern Scandinavia) were a distinct 'microlithic flint technology' (see: **Appendices – Flint Technology from Jensen, 2013**) in conjunction with 'big game forest hunting'.[40]

More on G. F. L. Sarauw would perhaps have been pertinent to the interpretation of initial interpretations, and practices, of the particularly involved disciplines. Significant, given Sarauw's beginning has been the basis of all other subsequent attempts at an understanding of these people, their culture, and its history. Unfortunately, given the English-centric (in language) type of works referenced there was little to be found by way of biographical information.[41] Reader be advised, that this fact must be taken into consideration throughout.

Those of the Maglemosian culture were master craftspeople in the manufacture of bone tools and instruments. From the most delicate fish hooks to handles for large adzes and axes, and all manner of things in between, these results were of course only possible through being adept in working another material, flint/chert.

A brief synopsis of the object's current situation under museum conditions is offered, below, to present an idea as to what and how the object is being represented to the public. The objects are accompanied by data clinically edited into clear and succinct literary blurbs which reaffirm an understanding or complete the presented picture. It is also a matter of

[38] Jessen et al., 2015, p.74; Leduc, 2012, p.62.
[39] Leduc, 2012, p.64.
[40] Jessen et al., 2015, p.74.
[41] Georg Frederik Ludvig Sarauw (1862-1928), botanist and archaeologist. Alma mater University of Copenhagen. Affiliate of the National Museum of Denmark, Prehistory Dept. 1894 –. Father worked in forestry. at Pedersværft, Zealand.

categorisation; human comfort and greater comprehension in a collection of relatable objects, as opposed to outliers. For example, regarding categorisation, Tomasz Płonka in, 'Human representations in the Late Palaeolithic and Mesolithic art of north-western Europe', selects a number of comparable objects and presents the information in a table. The particulars regarding the Bone's entry read;

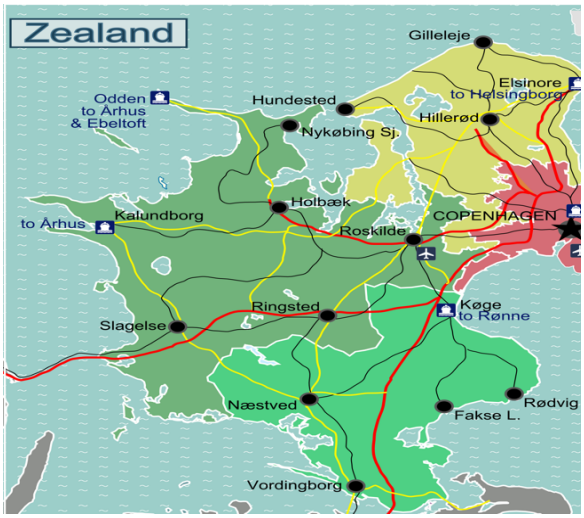
'**Site**: Ryemarks-gårds Mose, **Region**: Zealand **Medium**: bone **Artefact**: aurochs metatarsal **Technique**: engraving **Style**: geometrical figural **Action**: gathering? dance? **Additional Patterns**: geometrical (strokes and zigzags) **Chronology**: Boreal **Reference**: Brønsted (1940); Mathiassen (1941); NM A 38557.[42]

['NM A 38557' is this object's particular Museum (Nat.Mus.Dk.) Collection/Catalogue Number.]

[42] Płonka, 2019, p.96.

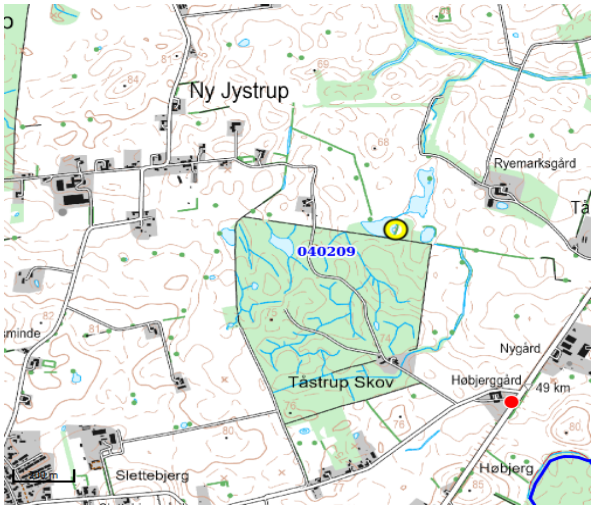
From One Situation (Discard Location) to Another (Display and Presentation at the National Museum of Denmark)

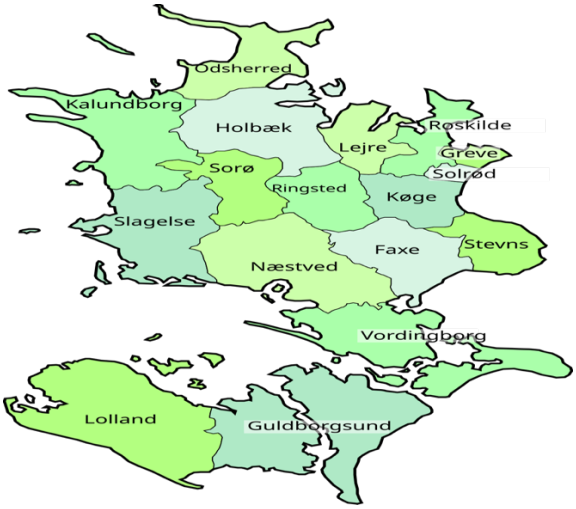




Figures 2. and 3. (L-R)

A selection of maps to reaffirm to the reader the area of today's northern Europe which is the topic of discussion (above, left and right). The location of the bog in which the Bone was rediscovered having been discarded, marked by a yellow dot (below, left), in Ny Jystrup which is located in the municipality of Sorø (there was some initial confusion regarding the finds exact location, see: **Appendix – The Most Appropriate Journey**).





Figures 4. and 5. (L-R)

Following on from the find's location is a very brief synopsis, and pictorial guide, to offer the reader an idea of the object's current position and presentation.

The Bone is currently on display on Level 0 'Danmarks Oldtid' ('Danish Prehistory) Section in the Nationalmuseet, København.

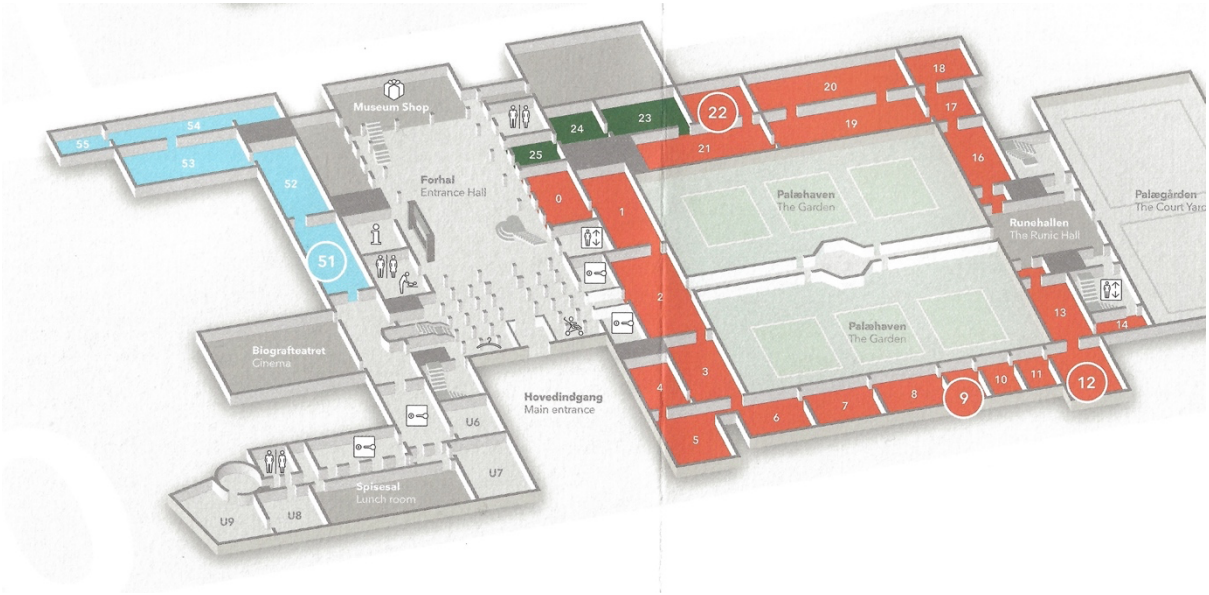


Figure 6.

The Bone is housed, together amongst other artefacts of which a number also have depictions of anthropomorphic characters, in a cabinet labelled 'Musik og magiske figurer' ('Music and Magical Figures') in the Room 2 'Urskovens folk' ('People of the Primeval Forest').[43]

[43] natmus.dk (online).



Figure 7.

d – ‘Dancing pregnant women? On a bone club. Ryemarksgård, central Zealand. 8000 BC.’

e – ‘A shaman and his spirit? Deer antler with human and deer. Åmosen. 7000 BC.’

f – ‘Man and woman on an axe of deer antler. Veksø, northern Zeland. 7000 BC.’

g – ‘Dancing shaman? On an axe of deer antler. Jorløse Mose, western Zealand. 6000 BC.’[44]

[Note: Common in location (Zealand), though further distant in time, perhaps suggesting well cemented ‘traditional’ practices, suggestive of symbolism rather than of idleness.]

The above list contains some of the other specimens alongside the Bone, the objects that also have incised depictions of anthropomorphic figures. The other objects are believed to be musical instruments (or parts of), a ‘mouth bow’, ‘drum hammer’, and a ‘bull-roarer’ [hopefully, as a digital document, the reader will be able to ‘zoom in’]. It is to be understood that this particular cabinet’s assemblage belongs to something relating to a shamanic tradition, tools of the trade so to speak, perhaps, in some cases actual depictions of shamans in practice themselves.[45] As is the case under museum conditions the information provided is succinct yet clear, the overall impression, from Room 2, being one of a forest dwelling shamanic society whose ceremonies utilised music and movement, and possibly other measures, in divination.

[44] National Museum of Denmark.
[45] Płonka, 2019; Nash, 2001.



Figures 8. 9. and 10. (L-R)

Jørgen Jensen labels these three items, from left to right; ‘e’ – the ‘Deerslayer’ from ‘Åmose, western Zealand’, ‘f’ – ‘two images of humans’, ‘found in the bog Veksø Mose in northeastern Zealand’, and ‘g’ – Which Jensen labels ‘Human figure, presumably a woman’ from ‘Jordløse Mose in western Zealand’.[46]

Combining the information provided by the Museum’s presentation of the Bone and its companion pieces with Jensen’s descriptive labelling of these items provides the reader of this work with important ideas to consider, in terms of the hypothesis proposed in **Chapter 3: Materials – The Major Players**. Note, in ‘e’, that both human and animal have been defined using the seemingly culturally significant ‘cross-hatching’. During the Maglemosian this cross-hatching is not only used as a pattern, not necessarily void in meaning in and of itself, but also, seemingly, to define things. When used to define, viewing the evidence as a whole, it is not possible to decrypt whether the cross-hatching denotes an actual, ethereal, or some transitional state in between, of being. Further forwards in time, beyond the Maglemosian, the use of similar patterns becomes much more elaborate, and further in abstraction perhaps, from an original meaning. In ‘f’, note the possible circlet or diadem,

[46] Jensen, 2013, pp.70-84.

represented by a series of horizontal dots, above the left-hand figure, and the possible depiction of a phallus on the right-hand figure. Is this a depiction of a ‘marriage’ ceremony? Also note, from Jensen’s description, that this item was found discarded into a bog. Perhaps, a ceremonial conclusion?

As explained in ‘**Chapter 1: Environment – The Development of a Maglemosian Scene**’, Room 2 of the National Museum is dominated by, representative of the importance of the Maglemosian relationships between environment-human-beast, the skeleton of an aurochs (see: ‘Museum gift shop postcard’ **Chapter 3: Materials – The Major Players**), which played a critical role in the many facets of Maglemosian life.



Figure 11.



Figure 12.

The Multiple Theories and Their Narratives

Gleba and Mannering state that 'life in southern Scandinavia has always been conditioned by, and to a large extent dependant on the ever near coastline'.[47] The Danish connection to their past-selves and their past-selves' connection to water is still very much evident, worked, and practiced. A prime example being the continuing work at the Vikingeskibsmuseet (Viking Ship Museum) in Roskilde, at the edge of Roskilde Fjord. Large bodies of water have always offered a challenge, perhaps one a community grows into.

Being, in certain parts, in Denmark, at times, gives one the feeling, or the illusion, of a land barely emerged. Zealand (see: **Appendices – The Most Appropriate Journey**), a relatively small locale, for example, (just barely) rises from under and in between a myriad of types of bodies of water. The vastness of some of the fjords, the ever-changing moving rivers, the open sea, and, of course, the bogs. Bogs are very different environments to other bodies of water, unmoving and stagnant, change surrounds them.

A close relationship to water was seemingly inevitable. As Jørgen Jensen describes, after yet many variable transitions within the region, Denmark, 'around 13,000 years ago became ice-free again', and though 'no human eye saw it… there was water everywhere… torrential streams, brooks, large water-filled hollows'.[48] Jensen states that the genealogy of the 'first hunters' in Denmark belongs with those who moved up, following herds of migrating reindeer, from the 'vast northwestern European lowlands', from 'northeastern France over Belgium, Holland and northern Germany to southern Poland'.[49] By 9,500 – 6,400 BC, during the 'warmer months of the year', those that had come to settle in the region, the Maglemosian hunters, occupied, Jensen suggests the term, 'marsh settlements'.[50] These uncovered settlements have all been 'inland sites, and in most cases they have been found in and near bogs, by lakes and along major watercourses'.[51] It is believed these settlements were uninhabitable during winter conditions and the hunters' movements during this period

[47] ed. Gleba and Mannering, 2012, p.91.
[48] Jensen, 2013, pp.26-27.
[49] Jensen, 2013, p.33.
[50] Jensen, 2013, p.55.
[51] Jensen, 2013, p.55.

of the year are not understood.[52] Charlotte Leduc concurs with this reading, stating that certain sites across Zealand show 'repeated occupation in the warm season of small dwelling places (ca 20m^2) by small family groups'.[53] Leduc adds that these sites are 'always connected with an aquatic environment and located on the shores of small lakes; these lakes served as large refuse areas into which waste from diverse activities was discarded, including waste from lithic manufacture, large amounts of faunal remains and waste from a diversified bone tool industry' (see below **Chapter 3: Materials – The Major Players**, for further information to do with the Maglemosian 'bone industry').[54]

One hypothesis as to the winter movements of the hunters is that separate family groups congregated in coastal areas, 'where they exploited their collective resources to hunt amongst other things the large meat animals more effectively'. Jensen adds the possibility, it is assumed due to the circumstance of groups coming together, that it was at this time of year, and in these locations, that 'they held large gatherings as the setting for marriages and rituals'.[55] Awkwardly, sea level rise between now and then has meant that the uncovering evidence to support this claim relies on 'future marine-archaeological investigations' (for examples of such work see: Anders Fischer).[56]

If the picture of a family group (even if that idea only served as inspiration, a beginning) holds truth, added to a suggestion of William H. Gass', in '*The Nature of Narrative and Its Philosophical Implications*', that 'there is a good possibility that our fondness for narratives, as well as a great part of the structure of narratives themselves, derives from genealogy and the defining of kinship'.[57] At the very least then, the picture certainly tells of something and is not merely design.

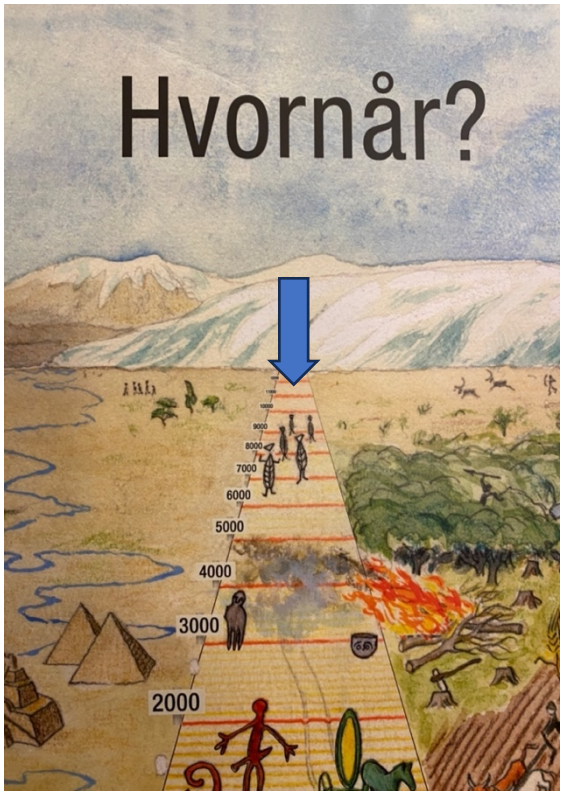
In relation to the Bone, Dr George Harold Nash states, 'during the Early Mesolithic Maglemose Period the approximate land/sea boundary extended many kilometres to the

[52] Jensen, 2013, p.55.
[53] Leduc, 2014, pp.199-200.
[54] Leduc, 2014, p.200.
[55] Jensen, 2013, p.57.
[56] Jensen, 2013, p.57.
[57] Gass, 2014, p.8.

east, north and west of the present-day coastline of Zealand, suggesting that the Ryemarksgaard find is more an inland than a coastal phenomenon'.[58] Reasons and possibilities as to why items were discarded into the bogs abound, security, protection, traditional applications, etc., serving as burial sites, offering pools, portals, etc. Thankfully, these 'wet, acidic, low oxygen or completely anoxic conditions and the presence of polysaccharide sphagnan in the peat bogs' create an environment which aids in the preservation of materials.[59] Materials a human would take to the grave with them, skin, bone, hair, textiles, etc. (see: Gleba and Mannering, 2012, pp.91-118). However, little is concretely known of (Danish) Stone Age textiles, though they were most likely made from 'animal skins and hides', meaning a reliance in understanding through interpretations of other extant evidence.[60] For example, the Bone is described by Gleba and Mannering as depicting 'five clearly dressed human figures'.[61] 'Human', as in clearly markings made by human hands using tools. 'Human', indeed, in that a particular Danish poster (marked below with blue arrow) places these figures at the beginning of a time line of people and events in which the Danish people recognise something of themselves.

[58] Nash, 2001, p.233.
[59] ed. Gleba and Mannering, 2012, p.92.
[60] ed. Gleba and Mannering, 2012, p.94.
[61] ed. Gleba and Mannering, 2012, p.94.





Figures 13. and 14. (L-R)

However, the figures on the Bone are anthropomorphic, rather than human, in design. The mind, and ability (as near contemporaneous evidence reveals), to choose non-abstract shapes to represent human-beings were available. Their perception of themselves and of each other, including when dressed, from the everyday to the ceremonially (as the interpretation of a wealth of other material evidence suggests, something was indeed being practiced), will remain difficult to discern. An accurate reading of textile traditions is integral to any study of human behaviour, as to decipher the dress code would be to determine the scene, ordinarily, though, unfortunately, perhaps not in this particular case. What can be gleaned, however, in this case in terms of textiles, is that the study of textiles begins with the first items that covered prehistoric humankind's nakedness.[62] That these initial examples of the self-conscious act of dressing, documented in many of the world's mythologies, are 'perceived as the shift from nature to culture and civilisation'.[63] Drewsen et al. (2024), suppose that there are 'three influential and connected theories: protection, adornment,

[62] Drewsen et al., 2024, p.3.
[63] Drewsen et al., 2024, p.3.

and shame' behind the inception of clothes.[64] Drewsen et al. (2024) state that, whether or not as it has been argued 'that the figures represent pregnant women' (see: natmus.dk.), it is 'without doubt' that they are 'dressed'.[65] Ulla Mannering, Margarita Gleba, and Marianne Bloch Hansen highlight a latter extant physical example, 'the earliest direct evidence of the use of skin as clothing is a fragment of calfskin from Tværmose in west Jutland, ^{14}C-dated to 3090 – 2950 BC'.[66] This patch of leather 'has remnants of fine sewing along one edge' and 'was found together with approximately 70 perforated hazelnuts and three small irregularly shaped amber discs on a string'.[67] Mannering et al. state, 'this find demonstrates that skin technology was well developed by the Neolithic period in Denmark'.[68] If this example does in fact highlight an advanced craft, or fashion, it suggests a preceding evolution existed. In which case it is not far reaching, though as stated further back in time, to propose both the sewing, and the strung together objects, could be a possibility, though not in all cases (the 'Deerslayer'), accounting for that which is represented as cross-hatching incised on the Bone.

The pregnancy hypothesis relates to the bulges at the midriff, the 'three central figures may be pregnant women (hence the protruding abdomens)', the two peripheral figures, male.[69] Therefore, it is posed, that we are looking at a group (family) of five separate individuals.[70] Jensen describes the incisions on Bone as, 'human figures, two men and three women… perhaps a hunting family of the size that lived in the summer huts of the Maglemosian period'.[71] Given the proximity of the 'summer huts' to water, indeed, in some cases built on the water, this adds to the argument for the zig-zag lines representing water (see: Anders Fischer). Does this hypothesis rule out the object, or device, from belonging to a fertility ritual? Given that consummation and conception appear to have already occurred, the offspring par-produced, or is the opposite true, that what is represented is an example of productive magic to encourage the manifestation of an offspring, conception and a

[64] Drewsen et al., 2024, p.4.
[65] Drewsen et al., 2024, p.4.
[66] ed. Gleba and Mannering, 2012, p.94.
[67] ed. Gleba and Mannering, 2012, p.94.
[68] ed. Gleba and Mannering, 2012, p.94.
[69] Nash, 2001, p.233; Rying, 1981, p.23.
[70] natmus.dk (online); Nash, 2001, p.233; Rying, 1981, p.23.
[71] Jensen, 2013, p.58

successful birth being the object of desire? If the means is magic, do the numbers involved bear some correlation to efficacy? (For an analysis of the numbers see: Nash, 2001.)

The Introduction to the '*Archaeological Approaches to Shamanism*', ed. by Dragoş Gheorghiu et al., highlights the Bone as an example in their introduction, suggesting 'engraved on to this piece of wild aurochs (*Bos primigenius*) bone from the south Scandinavian Maglemose were five human figures that appear to be walking towards a set of three zig-zag lines. Could one or more of these figures be moving from the mundane world into a trance state (ASC) [Altered State of Consciousness]?'[72] This hypothesis is based on the work of Dr George Harold Nash who, in 'A Reappraisal of a Decorated Bone Piece from Ryemarksgaard, Central Zealand, Denmark', argues that the Bone's depiction, or symbolism, 'represents a transition between life and death or between states of consciousness and unconsciousness'.[73] The composition does appear to have a loose idea of perspective, perhaps made more so by the two flanking figures of the group. Nash suggests these two are funnelling the central three, by way of procession, toward the three zig-zag lines (which represent some sort of 'transitional' gateway).[74] Nash, posits that the three zig-zag lines actually represent the three central figures having been transferred to another state of being.

The 'tool' is referred to by Nash and Gheorghiu et al. as an 'axe' and as a 'club' by natmus.dk (online).[75] Nash also offers the possibility of an association of symbolic meaning belonging to tools, such as the Bone, as 'something other than functional items', given the perceived fragility of the materials used to make such striking tools.[76] (Although, by Aristotelian definition, if it does not function as an axe, is it an axe? 'goal-directed activity', Irwin, 2019, p.xviii.) Belonging, possibly, to something akin to the gift exchanging of the Kula Cycle of the Trobriand Islanders, and just as elaborate.[77] Nash highlights a suggestion of Anders Fischer's regarding the zig-zag lines potentially being a representation of the movement of water.[78]

[72] Gheorghiu et al., 2017, p.5
[73] Nash, 2001, p.231.
[74] Nash, 2001, p.232 and p.234.
[75] natmus.dk (online), Gheorghiu et al., 2017, p.4; Nash, 2001, p.232.
[76] Nash, 2001, p.232.
[77] Malinowski, 2014.
[78] Nash, 2001, p.233; Fischer, 1995,

This idea is by no means unrealistic, given the relationship between the Danish peoples and water, as well as the fact that similar patterns are in use today (for example, on signs warning of deep water or strong currents). However, Nash questions the suggestion due to the find's location of discovery, 'found within an inland bog', in static water.[79] Nash also proposes the possibility of a combination of the two ideas, Fischer's and his own, suggesting the composition is that of two separate individuals and of two separate designs. This adds credence to the hypothesis of the object being passed around or gifted, indicating 'coastal and inland group contact' (if, indeed, there were separate groups).[80] This could also account for the seemingly incorrect, to our eye, orientation of the water to the figures.[81]

Nash concludes, that the Bone ('Ryemarksgaard Axe' – Nash) in all probability 'was a unique exchange item which possessed special powers; maybe as a symbolic item used to transport people from a mortal world to a supernatural world'.[82] One element left undiscussed (but somewhat acknowledged in a concluding remark) by Nash in 'A Reappraisal of a Decorated Bone Piece from Ryemarksgaard, Central Zealand, Denmark', is the significance of the tool type itself, an axe. Is it to be assumed, given the proposal, as a symbolic gesture of metaphorical severance or division, a splitting of states or worlds (juvenile/adult, consciousness/unconsciousness, physical/supernatural, life/death, etc.)?

Peter Vang Petersen, of the National Museum of Denmark, in his introduction to 'Zigzag lines and other protective patterns in Palaeolithic and Mesolithic art', evaluates ornamentation, such as the zigzag lines that accompany the 'dancing' group of anthropomorphic figures on the Bone. Petersen's working hypothesis is such, that art of the Maglemose culture (and the succeeding periods, Kongemose, and Ertebølle) 'primarily served an apotropaic, magic purpose'.[83] Petersen suggests that 'Early art', along with other active ingredients such as 'ritual means' and 'song and dance', served as 'pre-scientific

[79] Nash, 2001, p.233.
[80] Nash, 2001, p.233.
[81] Nash, 2001, p.233.
[82] Nash, 2001, p.234.
[83] Petersen, 2019, p.66.

medicine' whose ailments it fixed or countered, seemingly, included 'to influence' the 'supernatural' and other 'invisible forces that were seen as threats'.[84]

There is a possibility that these ritual means included the use of entheogens to achieve something of an altered state. A myriad of cultures, old and new, from around the Globe are assisted in the 'influencing of the supernatural' by the ingestion of certain species that have hallucinogenic properties. For example, two species of mushroom that are commonly found in northern Europe (inc. Denmark), *Amanita muscaria* (fly agaric) and *Psilocybe semilanceata* (the liberty cap), as well as the Rye fungus *Claviceps purpurea* (for ergot, see: Wasson, Hofmann, and Ruck, 2009), to name a few that these particular peoples may have been able to access. There is a Danish example in the archaeological record highlighted by Elisa Guerra-Doce, though admittedly much later, that of the Iron Age (*ca.* 400-200 BC) 'Grauballe Man', in which 'analysis of his intestines revealed the presence of numerous scleroties of ergot', his 'last meal' of 'porridge or gruel', in part, consisting of rye 'contaminated' with the fungus.[85] There are also a large number of plant species that have psychotropic properties also, *Papaver somniferum* (opium poppy), 'some members of the *Solanaceae* family' (in particular, deadly nightshade), and *Mandragora officinarum* (mandrake), to offer some examples.[86] The possibility of an understanding of the process of fermentation in the production of alcohols using fruit and cereals should also be included in this list, although there is no direct evidence for this during this particular time in this location.[87] All things considered, as Elisa Guerra-Doce states, 'the consumption of these substances is as ancient as human societies themselves'.[88] Were any such species among the flora and had this particular group unlocked the potential, then under the influence of such substances, changes in reality would have taken place meaning irregular and unpredictable perceived shifts in material properties (colour, pattern, structure). Such practices, potentially, cloud a complete understanding as to why a certain material, to certain peoples, was sort after in terms of its properties beyond the practical (for a discussion on the importance of Properties see: **Chapter 3: Materials – The Major Players**).

[84] Petersen, 2019, p.66.
[85] Guerra-Doce, 2015, p.755; Jensen, 2013, pp.634-636.
[86] Guerra-Doce, 2015, p.754.
[87] Guerra-Doce, 2015, p.757; Jensen, 2013, p.125.
[88] Guerra-Doce, 2015, p.752.

Perhaps a proposal can be offered that the depiction on the Bone should be read sentimentally, a narrative of movement (for a differing narrative concerning movement/transition which also combines a meaning to the zig-zag lines, see below: Nash, 2001), recorded stages of a dance performed by a single loved individual, dressed in previous hard-won finery, to remind the other whilst away hunting. There is a suggestion (in Room 2, National Museum of Denmark) of the possibility that the depth of the engravings relate to personal or public display (also, see: Petersen, 2019) and the deft touch of the markings on the Bone could well be perceived as personal, for the owner's eyes only. Also, physical acts, such as dancing, are said to be able to induce altered states, for example the Sufi whirling of the Dervishes. It would not be stretching the imagination to picture both entheogens and dance being used in tandem.

The grouping together of such perceived practices often leads one to conclude, though on what level, aspects pertaining to the ceremonial.

Petersen suggests the amount of 'portable art' found, belonging to Mesolithic Denmark, indicates a common practice (also common, the decorative incisions of zig-zag lines).[89] Though, as Petersen states, 'the majority of these finds are without any context as they were found during peat digging in former wetlands'.[90] For finds without context, Petersen suggests two indeterminable groups to which they may have belonged, as 'part of settlement debris or just an isolated wetland find'.[91] Context is everything to subjects historical. However, all is not lost. Though scattered and indeterminable as these finds may be, they offer something by way of highlighting the importance of the relationship between these people and those then wetland areas of Denmark. It may also offer credence to the zig-zag lines being simply a representation of, or meaning for, water, which may well have been William of Ockham's first thought.

[89] Petersen, 2019, p.68.
[90] Petersen, 2019, p.68.
[91] Petersen, 2019, p.69.

The depth, and quality (due to time spent and/or ability), of engraving is variable. Petersen contends this is due to the intended audience of the craft person's work, as either outward statements intended to be viewed by others or symbols of personal discretion between the owner and the 'invisible forces' touched upon above.[92] However, as opposed to denoting a person-to-person object, Petersen suggests 'such discreetly executed designs look more like attempts to communicate with supernatural, non-human powers, which were expected to comprehend the symbolic signals and to leave the decorated object and its owner unharmed' (for greater in-depth analysis of the use of 'amulets', talismans, charms, see: Petersen, 2019 and Jensen, 2013.).[93]

To highlight the use of zig-zagged lines, Petersen chooses as a case study 'The "Viper" from Fogense Enge' (for details of greater specificity see: Petersen, 2019). Elements of Petersen's study provide several facts pertinent to this particular essay in terms of a modern perspective, and influence on reception of historical objects, which in turn determines categorisation of said objects: an emotional approach as opposed to scientifically established fact. This example of Petersen's is a 'carved bone rod… found during World War II during drainage works in a low lying area by a labourer who nicknamed the piece "the viper"'.[94] At a later date, this object was offered to the National Museum of Denmark, where it was 'proved', using 'AMS [Accelerator Mass Spectrometry], to date 'to the Allerød/late Dryas transition - equivalent to the dating of the Bromme culture' rather than the Maglemosian period first considered, so this is further back in time (c. 11600 - 9800 B.C.).[95] Petersen suggests the likening, or interpretation, by the 'discoverer's intuitive perception of the late Palaeolithic piece from Fogense as a "viper" is neither unrealistic nor anachronistic'.[96] As suggested, in such matters, on what first springs to the layman's mind (one lacking in a specialist's archaeological knowledge with access to particular scientific apparatus) may not be any further from the mark in deciphering an original prehistoric meaning.

[92] Petersen, 2019, p.69.
[93] Petersen, 2019, p.69.
[94] Petersen, 2019, p.69.
[95] Petersen, 2019, p.69.
[96] Petersen, 2019, p.69

Other examples, within the Mesolithic timeframe, of 'depictions of vipers' and their patterning are extant from elsewhere in Europe (see: Petersen, 2019).[97] Petersen highlights, the 'viper has the widest distribution of all snake species in Europe and Asia. It is found from England to Vladivostok and from Spain to northern Norway', in particular *Vipera berus* (common European adder).[98] Petersen states, there is 'no doubt Stone Age man knew the viper's dorsal zigzag line as one of nature's most serious warning signs'.[99]



Figure 15.

The species is known, though unfortunately becoming much rarer, at least in Britain, its habitat turned over, yet the pattern is recognised and the feelings are at once one of awe and intrigue, unease and trepidation. Petersen's examples, from both the prehistoric and the modern, suggest a commonality in interpretation, and a familiarity with nature's designs. Through these innate qualities (and to some extent superstitions) we are connected with our past-selves and therefore, perhaps, an area of complete understanding and sympathy between the two periods exists. Evoking human responses to nature's signage.

[97] Petersen, 2019, p.69.
[98] Petersen, 2019, p.69.
[99] Petersen, 2019, p.69.

In Tomasz Płonka's brief survey of certain 'Late Palaeolithic representations' belonging to north-western Europe the assumption is that the accompanying zig-zag lines' 'underlying meaning may be associated with water, passage of time, fertility, [and] well-being' (specifically referring to a figure carved on elk antler found in Rusinowo from the 'Late Palaeolithic', see: Płonka, 2019; Kowalski and Płonka, 2009).[100] In one particular example highlighted, Płonka states the 'anthropomorphic figure is shown holding a zigzag – a motif of many meanings, such as thunderbolt/lightening, rain, water, snake'.[101] However, what Płonka's survey highlights is that there is clearly an extant trail, across an expanse of time and a significant geographical area, of various peoples using similar symbols (though, perhaps, with a variance in meaning and different intents).[102] Płonka explicitly states, and provides evidence to support the statement, that these anthropomorphic figures appear with greater 'frequency' in the 'early Mesolithic' and 'in their style hark back to the Late Palaeolithic tradition'.[103] Płonka also suggests the combination of anthropomorphic figures and zig-zag lines 'may allude to the zonal organisation of the world', which is somewhat consistent with Nash's argument.[104] Płonka states a 'shamanistic concept of the world' is common in 'forager societies' (both historical and contemporary).[105]

[100] Płonka, 2019, p.94.
[101] Płonka, 2019, p.95.
[102] Płonka, 2019.
[103] Płonka, 2019, p.94.
[104] Płonka, 2019, p.94.
[105] Płonka, 2019, p.94.

Chapter 3: Materials – The Major Players

As the previous chapter presented, the prehistoric meaning to the symbols depicted is yet to be, indeed may never be, fully understood. This factor, however, has not hindered an evolving vocabulary to which the Bone, and its symbols, are at the root (above, see: 'From One Situation to Another', and Skalk, 2018): not to be considered misinterpretation or misrepresentation, just one for our time, the formation of multiple meanings to the guise. These have been attached via the notion, 'we are all human'. Arguably, in this modern sense, what we have obtained is something of an abbreviation. Though, as the New England Transcendentalist Ralph Waldo Emerson highlights, 'all symbols are fluxional'.[106] This next chapter focuses on the Bone's other symbolic parts, and the materials with which it was created, in an attempt to further complete the phrase of the prehistoric meaning. The chapter poses a summation of 'possibles', a hypothesis combing multiple elements discussed in the work through the construction of something of a *chaîne opératoire*.

Chaîne Opératoire[107]

Frédéric Sellet states that a *chaîne opératoire* is 'a chronological segmentation of the actions and mental processes required in the manufacture of an artifact and in its maintenance into a technical system of a prehistoric group'.[108] The *chaîne* begins with 'raw material procurement' and ends with the 'discard of the artifact'.[109] Example,

material(s) procurement – tool manufacture – tool use – maintenance – discard.[110]

Procurement is usually attained either 'direct' from source, or through 'trade'.[111]

[106] ed. Atkinson, 2000, p.302.
[107] 'The use of a tool is commonly understood as a discrete step in an operational sequence, a *châine opératoire*, one of a number of such steps that together comprise a schedule for the assembly of a complete object' Ingold, 2022, p.65.
[108] Sellet, 1993, p.106.
[109] Sellet, 1993, p.106.
[110] Sellet, 1993, p.107.
[111] Sellet, 1993, p.108.

The steps that make up the *chaîne opératoire* themselves slot into a sequence of possible wider inclusivity, Life Cycle Assessment (LCA).[112]

According to Sellet, key 'controversial' elements of the particular stage of 'tool manufacture' (which could equally apply to the 'discard' link of the *chaîne*), belonging to the French, as opposed to the American application of the system are the theoretical attempts concerning 'concepts', and 'knowledge'.[113] 'Theoretical' being the cause for concern, as ideas being potentially unsubstantiated. However, experimental archaeology can be, and more often is, utilised to confirm or refute such theories (see: Deutsch, 1998), especially regarding 'tool manufacture' and 'tool use'. This is exemplified by (lithic) 'reduction' experimentation, which searches for the patterns or combinations that result in a particular end-product, so working backwards from a particular typology of flint blade to expose an understanding of the used technology.[114] The same can be figured through 'refitting' ('fracture' and 'debitage'); if all composite archaeological pieces remain (see below, the finding of 'depositions'), this can also be manufactured though experimentation.[115] The purpose of particular shapes can be ascertained also through practical experimental experience, as suggested above.

Unfortunately, nothing by way of experiment, or replication of conditions, can offer theories as to why 'discard'; such matters, where direct evidence is lacking, are perhaps only explainable through comparative archaeology. There is evidence of cached objects from the Scandinavian Mesolithic. These have been interpreted as, and termed, 'depositions' as opposed to 'hoards'. Hoards implies unrelinquished ownership of said property suggesting the burial of was for safekeeping with the intention to return to reacquire, in which case these cached items could not be considered offerings.

The above outlines an example of a system of process, the next section offers an example of a system of classification.

[112] Liu, M et al., 2024
[113] Sellet, 1993, p.107.
[114] Sellet, 1993, p.108.
[115] Sellet, 1993, pp.108-109.

From Levi-Strauss' '*Totemism*'

Claude Levi-Strauss acknowledges the potential that, '… the mind of the scholar himself plays as large a part as the minds of the people studied'.[116] That which sits outside the developed social constructs or 'universal value[s]' of what Levi-Strauss terms modern Western 'normal [sane], white, adult man', results in a projected savagery onto 'primitives' to make them seem 'more different than they really are'.[117] Therefore, on intellectual grounds, in terms of the processing of the information of reality, do not assume any distance between ourselves and those with whom we coexist, the peoples that function outside of our social perimeters. This could also be said, though distant in time, of our historical selves.

Arguably, both sets (primitive and prehistoric) own(ed) a *greater* level of intelligence in terms of their understanding of, and relationship with, nature, and living within the natural world. Certain of these 'primitives' are perhaps closer in nature of being and behaviour to those of a prehistoric landscape, having, what Emerson would call, 'an original relation to the universe'.[118] As Emerson suggests, 'cities', and certain other modern constructs from the actual to the abstract, 'give not the human senses room enough'.[119] We have been keen to create and then maintain divisions between animal (nature) and 'Normal, White, Adult Man'. There has been a concerted push for evolution, for example, a god in the image of the self, meaning not in form, but a weaker projection of the divine, though unique to the animal kingdom in level of consciousness. A level of consciousness that is aware of its own creation, which Levi-Strauss describes as, a '"second nature" which civilised man, in the vain hope of escaping from himself as well as from nature itself, concocts from the "primitive" or "archaic" stages of his own development'.[120] Ultimately, fooling themselves, it is considered that the disparity Western moderns project on to other cultures is artificial. A symptom of strict adherence to created constructs, though, of course, this could be said of many other cultures, and where and why cultures clash.

[116] Levi-Strauss, 1991, p.1.
[117] Levi-Strauss, 1991, pp.1-3.
[118] ed. Atkinson, 2000, p.3.
[119] Emerson, 1995, p.261.
[120] Levi-Strauss, 1991, p.3.

To offer something by way of a definition;

Totemism: Group identity signified via animal, vegetable, mineral, object, natural phenomena. Often with attached initiations, matrimony, procreation, consumption, prohibition, etc. How each group (or individual) interacts with their chosen totem is idiosyncratic.[121] This is a broad-brush stroke, as Levi-Strauss suggests, perhaps too broad to propose as a sole definable practice. Such variance cannot be encapsulated. That said, if the use of 'totemic in quality', especially if the word '*totem*' was taken in its original meaning, '"he is a relative of mine"' was applied, the formation of an understanding of the thing's cultural import within the relationship could begin to be formed.[122] Three aspects relating to the Bone, discussed in this work, could, potentially, be categorised as having been imposed on each a totemic quality, the aurochs, water, and flint.

A Material World

In the Introduction to '*An Archaeology of Materials*', Chantal Conneller outlines the two 'traditional' modes of thought concerning the 'understandings of materials in archaeology';

1. 'materials are seen as a formless substrate onto which human mental representations are imposed'.[123]

2. 'materials are composed of a series of natural, essential properties which constrain or enable human action'.[124]

This second mode seemingly aligns with a consideration from David Deutsch's introductory chapter in '*The Fabric of Reality*', which offers that the ultimate goal of the sciences is 'explanation', and should be taken over 'prediction'.[125] Explanation relates to understanding

[121] Levi-Strauss, 1991.
[122] This meaning of 'totem', '… is taken from the Ojibwa, an Algonquin language of the region to the north of the Great Lakes of northern America'. Levi-Strauss, 1991, p.18; '… in the language of the eastern part of South Australia the same term as is used for flesh also means totem'. Levi-Strauss, 1991, p.42.
[123] Conneller, 2014, p.1.
[124] Conneller, 2014, p.1.
[125] Deutsch, 1998, p.?

and prediction is 'important only for conducting crucial experimental tests to discriminate between competing scientific theories that have already passed the test of being good explanations'.[126] Deutsch states, ask the 'physical world' a question and it will give an answer, 'it tells us the result of any possible experiment if we ask it in the right language', though it will relinquish little in the way of explanation.[127] Aligned with Deutsch, Conneller suggests the problem with the second tradition is that 'in this view materials are only able to inform us about some of the properties of the natural world and the nature of certain technological choices'.[128] Conneller suggests a gap, and seeks an understanding of material 'in relation to social theory'.[129] Deutsch expresses that explanation (understanding), 'depends on the uniquely human faculty of creative thought'.[130]

Coupled with the experience of external factors is our internal governance. Lisa Feldman Barrett states, as humans we are in possession of 'an intricate, powerful brain that gives rise to mental events as diverse as thoughts, emotions, memories, and dreams – an internal life that shapes so much of what is distinctive and meaningful about your existence'.[131]

In terms of the human brain, its formation, the resulting 'network', and its function, Feldman Barrett distils its features as, 'slow changes by plasticity, faster changes by neurotransmitters and neuromodulators, and the flexibility of neurons with multiple jobs'.[132] Regarding function, Feldman Barrett states 'scientists suspect that all biological systems have degeneracy'.[133] Essentially, differing sums or equations can yield the same result, i.e., there is more than one route to ending up in same place.[134] It is the makeup of this 'network' and its '*complexity*' that is 'key to creating a human mind'.[135] Further, a human as a whole, body and soul, can be viewed as a biological system.[136] As Feldman Barrett states, the 'brain's

[126] Deutsch, 1998, p.30.
[127] Deutsch, 1998, pp.5-6.
[128] Conneller, 2014, p.1.
[129] Conneller, 2014, p.1.
[130] Deutsch, 1998, p.11.
[131] Feldman Barrett, 2021, p.2.
[132] Feldman Barrett, 2021, p.39.
[133] Feldman Barrett, 2021, p.39.
[134] 'Degeneracy in the brain means that your actions and experiences can be created in multiple ways' Feldman Barrett, 2021, p.39.
[135] Feldman Barrett, 2021, p.39.
[136] ed. McKeon, 2001, p.xvi.

most important job is to control your body - to manage allostasis - by predicting energy needs before they arise so you can efficiently make worthwhile movements and survive'.[137] Of course, as an actor in an environment rarely alone (obviously, there are outliers), 'all your body budgeting takes place in a massively complicated world made even more challenging by the other brains-in-bodies that you share with it'.[138] As the above posits, internal workings determine how humans perceive reality(-ies), environments, the material world and use the materials we choose to work with and enable the 'cognitive ability for symbolic thought'.[139] A cyclical chain of the brain's (sub)conscious drive to feed the body to keep itself alive enabling creation on so many levels.

Technological advances in a particular material may open up new properties and possibilities, a 'fundamental reconceptualisation' of the same material.[140] Conneller offers that 'it seems that in different times and places, what people consider to be the fundamental nature of materials differ'.[141] Of course, as Conneller suggests, the potential of further division from the group to the individual exists.[142]

A personal notion of what a particular material is and/or what it means to oneself may not necessarily be identical to your next-door neighbour's.[143] This is a matter of perception, governed by experience. A mechanical sympathy, the Midas touch, the ability to turn a pig's ear into a silk purse (a reorganising of a particular metaphor to serve the point), masters of their craft have a different relationship to their material of choice. It is more than just a trade; the appreciative look on in wonder at their skill, others cry witchcraft. Attempting to understand materials through a 'social theory', especially in historical scenarios, may mean a divergence, though not an abandoning, of pure scientific rationalism. As the Irish visionary Nobel laureate W. B Yeats wondered, '… it may be the arts are founded on the life beyond the world', and so to an understanding of the selected media.[144] Of course, meaning and

[137] Feldman Barrett, 2021, p.10.
[138] Feldman Barrett, 2021, p.10.
[139] Conneller, 2014, p.105.
[140] Conneller, 2014, p.2.
[141] Conneller, 2014, p.5.
[142] Conneller, 2014, p.6.
[143] 'Understandings of materials also differ between individuals, depending on the nature of their engagement with them (familiarity, specialisms, etc.)'. Conneller, 2014, p.6.
[144] Yeats, 2008, p.376.

understanding are not the same. The masters of their craft of old would not have had a complete understanding as to 'why?' a particular material behaved in the way it did under certain conditions.[145] For example, Deutsch's medieval stonemason, 'relied mainly on a complex collection of intuitions, habits and rules of thumb, which he had learned from his apprentice-master and then perhaps amended through guesswork and long experience'.[146]

This split in understanding reality is observed by Deutsch who states that at certain times, in certain instances, that which has been proved by the sciences and human 'common sense' are not in tandem or congruent.[147] As Deutsch expresses, 'our best theories are not only truer than common sense, they make far more sense than common sense does'.[148] For example, the individualistic and the unconventional, 'the ways in which people have conceptualised materials and their effects in technological action… is at once a product and produces different understandings of the world'.[149] That we are able to distil the components of reality into a handful of mathematical equations is, depending on the grip, somewhat removed from the everyday reality we (if not, most certainly those of a prehistoric age) experience. Will Deutsch's wish (which is coming) for a scientific 'Theory of Everything' describe only ('only', in no way meant to diminish the significance of the achievement) *a* version of Reality? from the Physical World, scientifically, to 'new worlds'.[150] Is reductionism required to rebuild the Prehistoric world(view)? Is this what is being, in some way, suggested?[151] Is today's reality the same as yesterday's? possibly not, if advances in technology are to be considered as part of that reality. It must be noted, Deutsch is considering the reality of the 'physical world' and Conneller's approach by no means dismisses the science(s), scientific methods and practice, though perhaps looks to incorporate the irrational human streak with the scientific data.

[145] Deutsch, 1998, p.p.13-14.
[146] Deutsch, 1998, p.14.
[147] Deutsch, 1998, p.ix; Conneller notes that '[Alfred North] Whitehead argues that Newton's theories of light in particular opened up a gap between reality and perception'. Conneller, 2014, p.10.
[148] Deutsch, 1998, p.ix.
[149] Conneller, 2014, p.4.
[150] Conneller, 2014, p.5.
[151] Conneller, 2014, pp.4-5.

These ideas represent a bipartite notion of reality. Common sense with the inclusion of the irrational, that which is encompassed by the phrase 'human nature', plus that, which on occasion may be contrariwise verifiable by the sciences. To solidify our understanding of a prehistoric reality a third portion needs to be added, that of superstition, creating a tripartite conception of, to borrow from Fyodor Dostoevsky, 'suppose it is a law of logic, but perhaps not of mankind at all'.[152] This idea may invite certain controversy. For example, whether superstition belongs to human nature or is another separate 'thing' i.e., of nurture, and whether religion, organised at any level, should be categorised under superstition. What is important, regardless of the reader's position, is that, function aside, superstitious elements (as referred to in **Chapter 2: Literary Review – A Recapitulation of 'The Ryemarksgård Bone'**) are an integral component to understanding the symbology of both technology and practice.

As stated, Conneller's approach is not opposed to the 'vision of material properties as apprehended through an objective, scientific analysis'.[153] Yet, Conneller adds that it must be recognised that the basis for a number of these types of analyses are cultural, 'ideological', products in themselves ('… the mind of the scholar himself plays as large a part as the minds of the people studied', Levi-Strauss).[154] Even if only, for example, from it being a matter of a certain type of education which enables working access to such objects that in turn forms the beginnings of understanding and connections to these materials from a prehistoric context. The call from Conneller is for the inclusion of myriad factors excluded from the 'technical manuals', factors outside of these physical boundaries of 'chemicals, machines and measurement'.[155] For a succinct overview of primary/properties/'real properties of matter' and secondary/qualities/'perceived things' of materials, see: Conneller, 2014. However, to add briefly to this, and to knit in an idea of Alan Garner's, Conneller reviews a number of varying theories from different fields within philosophy and anthropology that converge at matter being, 'something other than an inert substrate'.[156] This suggests animation(?), through natural means or otherwise;

[152] Dostoevsky, 2006, p.32.
[153] Conneller, 2014, p.9.
[154] Conneller, 2014, pp.1-2 and pp.9-11; Levi-Strauss, 1991, p.1.
[155] Conneller, 2014, p.10.
[156] Conneller, 2014, pp.11-13.

Animate - verb - bring to life.[157]

Animate - adj. - alive or having life.[158]

On considering the nuances in meaning between the verb and the adjective it is a question of levels of abstraction as to whether one equates 'potential' and 'animate' to the same state. Examples being, within which all holds potential if even to decay offers the living of some kind of life, and to that which Garner ascertains, all materials are in waiting for a type of 'violence' (positive = creation/negative = destruction) to be acted out upon them, bringing them to life in the process.[159]

Flint/Chert – Certain Properties

Anders Högberg and Deborah Olausson's system of classifying types of flint or chert local to Scandinavia is an example of the combining of certain methods so far discussed in this Chapter. For example, using current technologies available to the Geological Sciences such as Laser Ablation Inductively Coupled Plasma Mass Spectrometry, or LA-ICP-MS for short, which was used in an attempt to define peculiar chemical signatures belonging to individual samples from various locations. This experiment did not actually yield the desired results due to the fact that, 'markedly high silica concentrations resulted in the dilution of other elements'.[160] These 'other elements' were the key markers of difference between the samples. However, other techniques, and experiments, yielded far greater results and a typology of Scandinavian flint was established (for the results see: Högberg and Olausson, 2007). These complex scientific practices were used in conjunction with their own working experiences and observations with each different type of flint, 'practical qualities such as knappability, limitations posed by nodule size, and hypothetical prehistoric availability'.[161] It was these initial studies, a definitive aspect of human nature i.e., picking things up and

[157] Powered by Oxford Languages (online).
[158] Powered by Oxford Languages (online).
[159] dir. Moore, 1973.
[160] Högberg and Olausson, 2007, p.65.
[161] Högberg and Olausson, 2007, p.13.

looking at them, that suggested there was a typology at all, pressing the importance of utilising the empirical benefits of both physically being at locations of source and working with the various materials.

Högberg and Olausson's typology of Scandinavian ('modern Denmark, Sweden, Norway, and part of the Baltic Sea coast of northern Germany') flint comprises of 17 distinguishable variants.[162] Unfortunately, in this Scandinavian landscape the shifting and redepositing of material through successive 'glacial movement' (over the last 20,000 years) has created a 'till' (all manner of 'raw' geological material combined) which, when backtracking, makes it 'almost impossible to point out where the raw material used for any specific tool production was collected originally'.[163] The coinciding isostatic 'uplift' (or rebound), along with the (re)glaciations (mentioned above) meant a 'constantly changing' southern Scandinavian stone age coastline.[164] As Högberg and Olausson state, 'periodical transgressions and regressions eroded coastal cliffs', presenting the contemporaneous peoples 'abundant raw material sources on the beaches and in beach ridges'.[165]

Two examples from northern Europe but of different epochs, belonging to East Anglia, serve to highlight the cultural importance of the properties of the material of flint, aside from its purely practical attractions. It is the ideas within these case studies, that arguably there is a greater knowledge of in terms of desirable properties, which may be applicable to similar elements of the Maglemosian which are not. It should be recognised that in some cases, whole industries are devoted to gaining access to, and the procurement of, the very best material. This highlights that in some cases 'procurement' is potentially not the first step of a given *chaîne opératoire.* This negative aspect surrounding the critique of the method establishing a *chaîne opératoire* is highlighted by Conneller who states, 'it is difficult to delimit a lone *chaîne opératoire*: instead these always escape into other sequences'.[166] Conneller adds, 'archaeologists rarely see the remnants of a single technical act'.[167] The first

[162] Högberg and Olausson, 2007, pp.14-15.
[163] Högberg and Olausson, 2007, pp.16-17.
[164] Högberg and Olausson, 2007, p.17.
[165] Högberg and Olausson, 2007, p.17.
[166] Conneller, 2014, p.19.
[167] Conneller, 2014, p.19.

example, of the Late Neolithic (between 2650-2100 BC specifically at this site) of what is today known as Grime's Graves, situated in the Becks (Norfolk/Suffolk boarder), serves to highlight both of these points.[168] The particular landscape created by the mining practice has meant numerous peoples who have followed have interpreted and used the site for numerous other activities since the Late Neolithic.[169] This combination of activities has left a pockmarked site of hundreds of circular depressions visible from the surface of some 400 odd backfilled shafts and pits.[170]

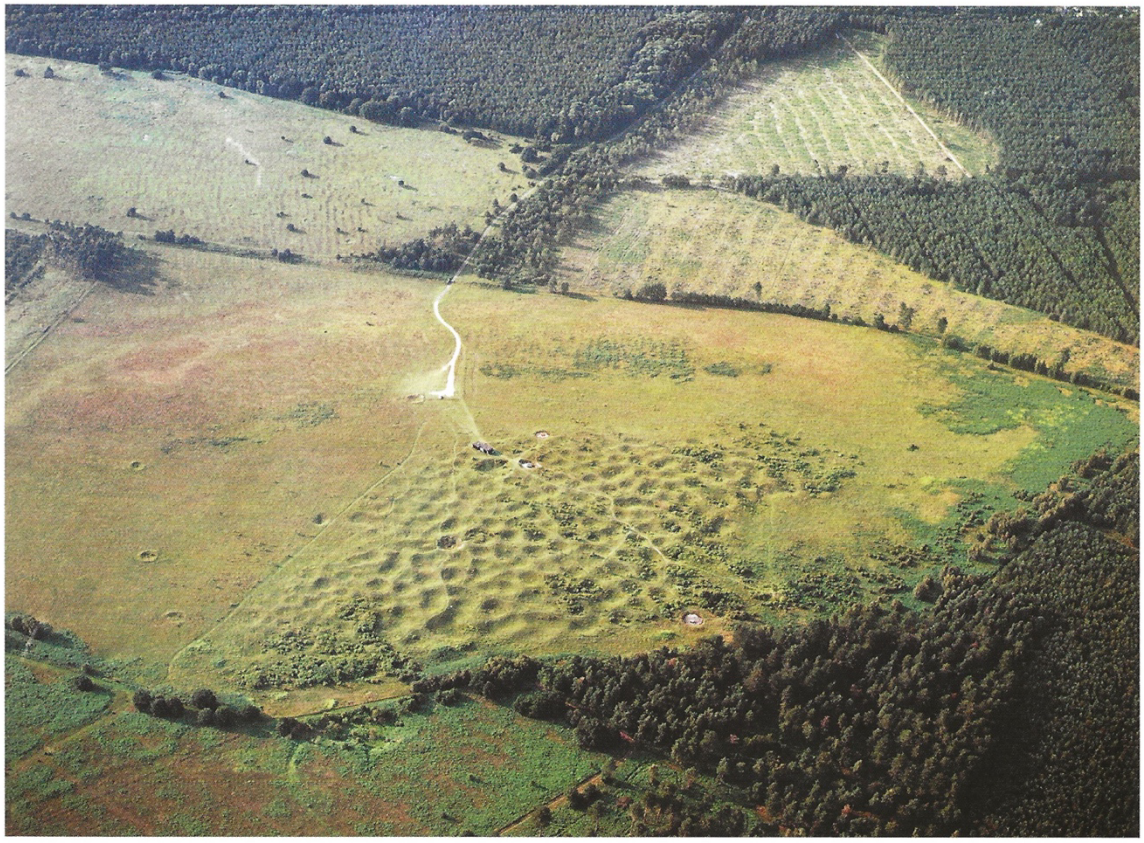


Figure 16.

In terms of the Neolithic circumstances (as stated, Grime's Graves is a palimpsest site), mining at Grime's Grave was goal orientated, organised, and needed a whole host of other practices and skills combined for it to be as productive as it was. From the acquisition (a successful hunting strategy) of red deer antler to use as picks, rope making, and wood

[168] Topping, 2015, p.3.
[169] Topping, 2015, p.3.
[170] Topping, 2015, p.3.

working (timber platforms, aiding the movement of people and material back to the surface).[171] Aspects of living also occur from this period at this site, ritual (deliberately positioned offerings, finished axe-heads, certain items made of chalk inc. a phallus, the filling in of shafts and beginning anew), burning, cooking/feasting, and tool manufacture.[172] Activities at the site were potentially governed by time (to a greater accuracy than simply day/night), as Topping mentions, 'scratched on the wall of the shaft [Pit 2] above the platform was a series of vertical incised lines, which the excavator interpreted as a sundial as it was illuminated by the Sun's rays at midday', although this is admittedly highly speculative.[173] Further related to time – Excavation of Pit 1 found three species of bat, 'significant because they prove that some mines remained open and were quiet enough during the winter for the bats to roost there'.[174] Thus establishing that mining did not take place during bats' 'winter roosting period', and that the mines were left unclosed at season end during this period of the year.[175] All these acts, listed above, are arguably 'subordinate' to the procurement of the 'raw' material.[176] In this case, telling of not just a smash and grab attitude to harvesting, but highly methodical social activities which were not only dictated by, but incorporated working with, the landscape and its seasonally changing environment. In no way dissimilar to the Maglemosian attitude in the selection of materials.

Picking through the chalk to access what has been termed the 'floorstone' flint, in some places as much as 12 metres in depth and then chasing the seam for several metres across, passing over other seams on the way down.[177] Seemingly, not just any flint would do. Topping states in his guide to the Site that the 'floorstone' flint is 'jet-black', though offers no comparison with regard to the flint from other seams, at other levels.[178] Topping states that this was not the only way to access the material, 'one of the fundamental questions about flint mining is why Neolithic miners dug for flint when it could be collected from the surface. It has been argued that the flint which lay underground was of better quality, especially for

[171] Topping, 2015, pp.7-41.
[172] Topping, 2015, pp.10-17.
[173] Topping, 2015, p.7.
[174] Topping, 2015, p.15.
[175] Topping, 2015, p.15.
[176] Aris. *Eth Nic.* 1094a.
[177] Topping, 2015, p.6.
[178] Topping, 2015, p.15.

knapping large artifacts such as axes'.[179] However, Topping added a caveat that 'big artefacts did not necessarily require mined flint'.[180] Reasons as to 'why?' then, remain a matter of conjecture, though there seems to be a potential cultural mandate, perceived or actual, that not only the properties of quality, or colour, mattered, but that the depth of descent to retrieve the flint may well also have held a symbolic meaning. Topping states, 'flint was clearly considered special here [Grime's Graves], and some of the axes were kept for ceremonial purposes, used as gifts to underpin social relations, or occasionally buried in hoards'.[181] Yet, in contrast to that fact, at the other end a spectrum, Topping continues, 'other functional tools were worn down to unusable stubs of flint and buried in pits', clearly showing that certain tools personally fit the craftsperson, whether ergonomically, aesthetically, or of sentiment, as well as relating to perhaps private rather than group offerings.[182]

In discussing aspects of certain Neolithic finds discovered at Grime's Graves, Topping offers that 'nearly all the axes found appear to be unfinished tools or rough-outs, suggesting that they were completed elsewhere'.[183] The aim, logically, being the ease of transportation through the shedding of excess weight. However, to offer something by way of comparison, though from the Mesolithic Period, Conneller discusses her study of the flint tools discovered at Seamer C in North Yorkshire.[184] Conneller states, 'here tools were expediently produced and rapidly discarded, rarely leaving the area where they were made'.[185] Adding, 'here transformability and disposability seem key'; somewhat puzzling elements in the process(es) of Prehistoric flint tool production.[186] Moments of frenetic production and instant discarding, which to us today may seem irrational, were evidently an integral part of the process.

[179] Topping, 2015, p.23.
[180] Topping, 2015, p.23.
[181] Topping, 2015, p.28.
[182] Topping, 2015, p.28
[183] Topping, 2015, p.28.
[184] Conneller, 2014, pp.2-3.
[185] Conneller, 2014, p.3.
[186] Conneller, 2014, p.3.

Another point of interest, made by Högberg and Olausson, relating to the properties of the material is that of naming, '… we can assume that the vocabularies of prehistoric people included many and varied terms for what we today call flint'.[187] If we had any way of knowing the names for their materials perhaps we would better understand the important properties, to them, which they held. Their names may have been influenced due to use and associated with the action. As a 'Deleuzian perspective' influencing archaeology highlighted by Conneller suggests, 'focus on matter not in terms of what it *is* (or the forms it is represented as) but in what it *does*'.[188]

The second example from East Anglia, England, is a traditional (beginning in the Medieval Period) form of masonry called 'flint flushwork', which is still being practiced today (though, perhaps, mainly in conservation). Both the physical and aesthetic properties of flint are key to its usability and the desired finish. The prime example of the skill and its effect is The Church of the Holy Trinity in Long Melford, Suffolk, built (partly reconstructed) between 1467-1497 AD. Not only does this particular building, the paragon of the flushwork trade, highlight our continued relationship with the material it also serves to further highlight these seemingly never-ending sequences. Whether that be through the Christian ceremonies that stem from there on in or the somewhat cyclical conservation of such buildings relying on the continuance of a trade and vice versa.

[187] Högberg and Olausson, 2007, p.9.
[188] Conneller, 2014, p.19; see also '*A Wizard of Earthsea*', by Ursula K. Le Guin (2016) on what is in a name.





Figures 17. 18. and 19.

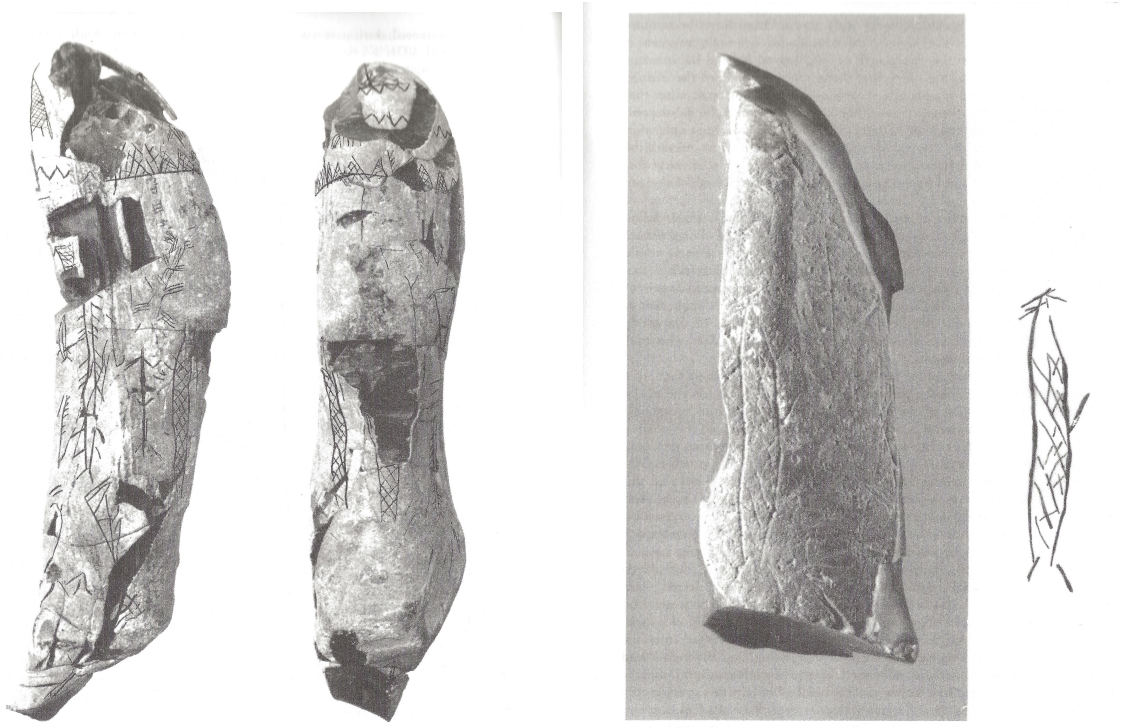
If that which is desired is a thing that shines, for example, is all judgement, motivation, and technology, geared towards a future thing, or a practice, a technology, that will outshine the thing that shines? Seemingly, the answer is 'no'. The continuing practice of flushwork, and the like, are prime examples. Even where evidence of materialistic attitudes exist there are often examples where enduring traditional usage trumps a superior technology and practice.

Another crucial property of flint, as well as the forms that can be impressed upon it are the natural forms of its 'raw' state.

Returning to the Mesolithic, Tomasz Płonka highlights a number of finds from sites in Åmose (west Zealand/Sjælland) and Holmegård V (located in the southern part of the island of Zealand/Sjælland) where flint nodules believed, in shape, to represent phalli were discovered.[189] The cortex of these particular nodules had been decorated, as Płonka describes, with 'a rich pattern of engravings, some of them directly associated with sexual symbolism', representations of sexual organs/parts (see: Figures 20 and 21).[190] This act was undertaken pre-shattering (exploitation) and the deliberate burial of the collective pieces.[191]

[189] Płonka, 2019, p.95.
[190] Płonka, 2019, p.95.
[191] Płonka, 2019, p.95.

However, it was understood that not all the pieces of these phallic nodules were buried, as Płonka highlights, on piecing together the nodules, after their discovery. Płonka states that pre- the burial stage of the process the 'knapper' had taken away 'four regular, large and slender blades' from the nodule.[192] By way of a conclusion to this case Płonka suggests, that 'these forms may have something to do with the relationship/analogy between chipping flint and the sexual act known from traditional cultures'.[193] It is not made clear as to which cultures in particular Płonka is referring, but this act may tie into certain elements of Georges Bataille's theory of eroticism which is discussed briefly in the **Summary**.



Figures 20. and 21.

[192] Płonka, 2019, p.95.
[193] Płonka, 2019, p.95.

Caching

Płonka's evidence (above) leads to another important aspect of practice, caching. Lars Larsson and Arne Sjöström (2011) refer to a peat-cutter's find of a number of 'blade depositions' in the 1940's near Ageröd V (a site located in Scania, southern Sweden).[194] Just as with those referred to above (see: Płonka, 2019), certain pieces could be pieced together signalling they had been exploited from the same nodule (or belonging to 'cores' buried together in the same deposition, i.e. multiple nodules), though not phallic in this case (?), this being the same for each group of the number found at the time.[195] Larsson and Sjöström state a very deliberate arrangement of the 'blades' within each deposition.[196] Stratigraphic location within the 'gyttja' suggests dating to 'late Maglemose/early Kongemose'.[197] Also, as is the same with those depositions in Płonka's case, Larsson and Sjöström highlight that a selection of blades had been removed. Clearly 'the refitting of the blade sequences shows that just some of the most symmetric blades are missing'.[198]

Larsson and Sjöström conclude these 'caches' are a stage of a process which belongs to 'ritual activity', and that blades that had not met an extremely specific set of criteria were those that have subsequently been found in these collections.[199] This set criteria being the 'best-looking symmetrical blades obtained in the course of blade production'.[200] Something other than useability was sought. Blades of 'good technical quality' make up the those discarded, and the discarded, those which did not qualify, were 'deposited in the lake'.[201] Those deemed special enough functioned, in all probability, 'as knives in ritual or ceremonial tasks'.[202]

[194] Larsson and Sjöström, 2011, p.460.
[195] Larsson and Sjöström, 2011, pp.460-461.
[196] Larsson and Sjöström, 2011, p.461.
[197] Larsson and Sjöström, 2011, p.460.
[198] Larsson and Sjöström, 2011, p.461.
[199] Larsson and Sjöström, 2011, pp.461-462.
[200] Larsson and Sjöström, 2011, p.461.
[201] Larsson and Sjöström, 2011, pp.461-462.
[202] Larsson and Sjöström, 2011, p.462.

What does this mean in terms of the task the pieces of selected flint (removed from the nodule/assemblage) then perform? Such as its use in dressing an animal (the most logical conclusion?) and then their use in the (re)drawing of figures and symbols on a bone?

Potential Process of the 'Bone'

Conneller discusses the finding of the Holmegård V phallic nodule found during excavations by Anders Fischer in 1970-71.[203] Fischer highlights the motifs, possible 'stylised' anthropomorphic figures (considered male due to appendage at midriff, see: Figure 18), 'cross hatching' and 'zigzag lines'.[204] Given Fischer's suggested 'maleness', due to representation, motifs, and the physical shape of the nodule, Conneller suspects that the removed blades 'were used in male rites of passage, perhaps those connected to circumcision, tattooing, or scarification'.[205] Jensen, taken as meaning both the natural physical shape of the nodule and the design scratched into the chalk cortex, offers no hypothesis stating 'the purpose of these ornamented sexual symbols is unknown'.[206] However, Jensen does offer a reading of the scene depicted on the Bone, suggesting two males, one captured in 'lively motion' (dance?), and three females 'possibly pregnant', and adding a meaning, that 'it is not unreasonable to think that the picture should be interpreted as an example of the Maglemose hunters' eternal dream of fertility and fecund women'.[207] Offered below is a hypothesis and only that, as unfortunately, Jensen's 'unknown' statement remains valid.

Attempting to bring together the certain stages of a process so far discussed in this work;

Naturally occurring flint nodule in the shape of a penis/phallus – Engraving of the cortex of the selected piece with sexual(?) symbolism – Exploitation (for a Maglemosian typology see: **Appendices – Flint Technology from Jensen, 2013**) – Selection Process, that which is to be discarded (offered?)/that which is most useful to the future task (ceremonial?) – Future Task

[203] Conneller, 2014, pp.86-91.
[204] Conneller, 2014, p.87.
[205] Conneller, 2014, p.87.
[206] Jensen, 2013, p.73.
[207] Jensen, 2005, p.70.

(field dressing) – Is the same piece of flint then used to mark selected bones with the same motifs which decorated the nodule, completing the cycle?

The anthropomorphic figures found on the refitted nodule from Holmegård V, Zealand (Maglemosian/Boreal) and those found on the 'Ryemarkgård Bone', Zealand (Maglemosian/Boreal) are of the same ilk (subject and expression), the same motifs.

Such beasts as a fully grown male aurochs, it is documented in other cultures, may well have been chosen to complete a 'rite of passage'. The privilege of being chosen to conclude the hunting stage, the one who strikes the fatal blow, is rarely insignificant. It is by no means presumed that women were not actively engaged in the hunting process, though given the phallic 'beginning' to the proposition…

There is the possibility that the male's first successful hunt, as represented by the aurochs metatarsal, is the culmination of a passage, for example, a coming of age. In conjunction with becoming a man comes the raising of one's own family, vital for the continuance of the community as a whole. Therefore, the phallic form of the flint and the representation of the erect 'male' combined with those figures incised on the Bone, if they indeed represent pregnant females (lacking appendages at the midriff), possibly represent the completion of a narrative arc. Most likely akin to a prayer, and therefore an irrelevance whether the Bone is termed either 'club' or 'axe', given its fragility and it lacking ergonomically.

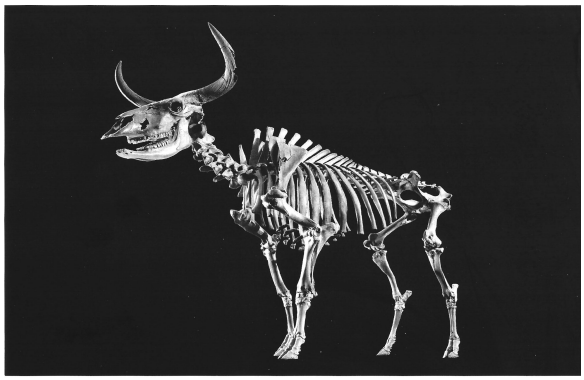
This hypothesis does however have certain gaps. For example, what the zigzag lines represent in this instance, a theory as to the discard site selection process, and how the bone was prepared for inscription, to suggest just a few.

What all the above does, however, serve to highlight is Conneller's, possibly never-ending, sequences 'escap[ing] into other sequences'.[208]

[208] Conneller, 2014, pp. 18-20.

The Bull (*Bos primigenius*)





Figures 22. and 23.

Ronald Goderie of the Taurus Foundation states that the aurochs 'stands at the very root of the whole idea of our continent. It is Europe's defining animal', a continuing relationship and coexistence over millennia.[209]

Numerous sites across Zealand 'have provided preserved faunal remains owing to their peat bog contexts', (see above right, ''The Aurochs' from Vig').[210]

Georges Bataille on Visiting Lascaux

In '*A Meeting in Lascaux: Civilised Man Rediscovers the Man of Desire*', Georges Bataille describes a visitation at Lascaux, 'the images before us are the mirrors of a long-standing dream that passion pursues within us'.[211] Perhaps, akin to a pictorial fairy-tale, not our reality but familiar enough to be by and of us as Bataille reports, 'I recognise someone who resembles me. It is myself in fact that I think I recognise, myself and the marvellous world linked to the power to dream, a power common to myself and the earliest man.'[212]

Bataille suggests that the image preceded the act, 'prehistoric man painted them before hunting, believing that the possession of the painted figure would ensure the possession of

[209] Ed. Sandom, 2014, p.15.
[210] Leduc, 2014, p.199.
[211] Bataille, 2005, p.82.
[212] Bataille, 2005, p.82.

the actual animal represented'.[213] Of course, conclusions, or outcomes of actions are, seemingly, also depicted in many cases. What Bataille stresses is that certain images espouse something other than an historical narrative. Elements of faith within their meaning, in that there has to be, at the very least regards faith, a will to achieve, which proceeds any success. The depictions were to them 'magic', but to us are 'art', Bataille suggesting this being the result of our 'science' and 'the idea of [humankind's] continuous progress'.[214]

Bataille implies that behind today's forward thinking 'rationality' there is something still of the animal and that on witnessing such depictions as those in the caves of Lascaux they trigger a prehistoric innate memory.[215]

Jensen's Ways and Means

Such animals as the aurochs, Jensen states, were 'at the very centre of their [the Maglemosian hunters'] existence'.[216] Adding, 'great wealth' was provided by the hunting and killing of such beasts, large quantities of meat and an abundance of material for the manufacture of tools.[217] There was undoubted a hierarchy imposed on the pieces that made up the whole, for example, the metatarsal and metacarpal bones often desired and claimed (see: 'The Bone Industry', below and **Appendices – Aurochs Butchery**).[218] However, such efforts were not always successful on first encounter, as survived old wounds on particular archaeological finds ascertain.[219] Multiple meetings meant a degree of built up knowledge of individual animals and may have added to the prize (animal) and prestige (hunter) (see: Conneller, 2024 – 'human-animal relations', 'animal perspectives', and 'particular animal identities').[220] In turn, tracking skills and/or opportunistic meetings aside, a possible perception of the hunter, that paths crossing being anything but coincidence, is that the

[213] Bataille, 2005, p.82.
[214] Bataille, 2005, p.83.
[215] Bataille, 2005, pp.82-85.
[216] Jensen, 2005, p.62.
[217] Leduc, 2012, p.63; Jensen, 2005, p.63.
[218] Jensen, 2005, p.63.
[219] Jensen, 2005, p.63.
[220] Conneller, 2014, pp.47-75.

hunted initiates the primary act by offering itself.[221] The tracking of the animals was aided by dogs ('the only domesticated animal of the Mesolithic'), their acute sense of smell invaluable, and the sticking of multiple arrows was the practice of bringing down the beast.[222] Method, target area (the rear of the animal, heavy with muscle), and analysis of contemporaneous fauna, suggest it is likely that these hunters were using mistletoe to poison the flint heads and barbs of their arrows.[223] This brief synopsis of the hunt again highlights certain of the various possible relationships between human-animal-material and their interactions within an environment.

'"We're going for a walk"'[224]

Alan Garner describes, combining elements of his own family's history, myth, and fiction, in an episode of the '*The Stone Book Quartet*' if not a coming-of-age ceremony then at its least a processional passing on of family lore. Mary is led by her father to the caves and tunnel networks, a storehouse of numerous minerals, worked by a succession of miners, since the Bronze Age, of Engine Vein at Alderly Edge. Led by the guidance and encouragement of her father, and a seam of malachite (and a successive list of other rock types, a generational knowledge of the stratigraphy and formation of earth), Mary descends lighting candles with 'lucifer' matches along the way and from a bobbin unfurling a length of silk (such as Theseus' returning guide, back from the depths of the Labyrinth, of Ariadne's red thread). At journey's end, Mary views an image of a bull, felled by a 'spear or an arrow', a motif recycled by her father which Mary recognises as his mason's mark. The painting of the bull in the cave is accompanied with the stencilled paintings of human hands (further human connection). Whether Garner's paintings once existed, lost to mining practices, or are a purely fictional device, is somewhat irrelevant. The example serves to highlight certain time-honoured subjects of human creativity inspired by the environment and spaces they share

[221] '… the Cree people, native hunters of northeastern Canada… say that the animal offers itself up, quite intentionally and in a spirit of goodwill or even love towards the hunter' Ingold, 2022, p.14.
[222] Jensen, 2005, pp.63-67.
[223] '.. the presence at Mullerup of embedded lithic fragments in some bones (an aurochs rib, thoracic vertebrae from a young deer and wild boar), demonstrates the use of lithic arrowheads for hunting. Other examples such as the discovery of Maglemose lithic arrowheads associated (and sometimes embedded), with aurochs' complete carcasses at Vig and Prejlerup, in Zealand also confirm this assertion.' Leduc, 2012, pp.76-77; Jensen, 2005, p.66.
[224] Garner,2006, pp.21-34.

and in which they occupy. Garner's felled bull, with its markings of an heroic episode, has a mytho-historical narrative construction highlighting the existing connection between humans and this particular beast.

The 'Bone Industry'

This particular Danish 'bone industry' consisted of the manufacturing of 'tools, weapons, [and] ornaments'.[225] Numerous implements were manufactured out of bone, ranging from fish hooks and harpoons, to awls and hammers.[226] Antler was also used to create 'hammer-axes, adzes, punches', whilst a variety of animals' teeth were crafted as 'personal ornaments'.[227] Pattern and trend in end result, the acquisition and selection processes of the required raw material, and manufacturing techniques determine belonging (cultural ownership).

A certain amount of kill-site butchery would have needed to have taken place (consider the beast, aurochs – *Bos primigenius*). An easier way of transporting meat from one place to another is for it to remain on the bone until it has reached its destination for final preparation.[228] However, the kill site may have held an important significance to any hunting linked with ceremony.

Trying to align prehistoric and modern hunting practices could possibly create a picture which is somewhat contradictory. Solely for subsistence purposes, in the majority, predacious species prey on the young, the weak, the elderly, humans being no exception. However, it is important to consider, in terms of the 'bone industry', that which Leduc states, 'young animals were never used as a source of raw material for bone manufacture' due to their bones being immature in terms of growth and density, meaning they were 'unsuitable for *debitage* or use'.[229] Of course, this does not mean that they were not hunted. Added to this (further evidence from Leduc's site in Mullerup, Zealand), Leduc establishes that the

[225] Leduc, 2012, p.64.
[226] Leduc, 2012, p.66.
[227] Leduc, 2012, p.66.
[228] 'the selective transportation of carcasses is more significant regarding aurochs for which the very large size required selection of the meat-yielding parts' Leduc, 2012, p.77.
[229] Leduc, 2012, p.66.

aurochs' remains discovered at the Mullerup site suggest that 'adult males may have been a preferential target for hunters', in this case.[230] That this particular hunt ended in the killing of such a formidable target may add credence to the hypothesis (discussed above) concerning potential 'coming of age' ceremonial practices as ordinarily such a target would have posed unnecessary risks, especially given the abundance of other prey species available. For example, (this being just a sample from the Mullerup site) bones from pike (*Esox lucius*) and European pond turtle (*Emys orbicularis*), to dog (*Canis familiaris*), brown bear (*Ursus arctos*), elk (*Alces alces*) and wild cat (*Felis silvertris*), to all manner of birds including the mallard (*Anas platyrhynchos*), Eurasian bittern (*Botaurus stellaris*), grey heron (*Ardea cinerea*), and the white-tailed eagle (*Haliaeetus albicilla*), for a comprehensive list of the species identified from the bone assemblages on the site see: Leduc, 2012.[231]

Suggesting caution regarding reading the extant evidence Leduc states 'since the duration and the number of occupations at Mullerup are not known, it is difficult to interpret hunting strategies at the scale of occupation.'[232] Leduc adds, there may have been certain 'complimentary strategies depending on species' in tandem with, as Leduc suggests, the evidence reflecting that choice of prey was somewhat determined by 'specific needs' at specific times of year. [233] As already alluded to, their size and potential aggressive behaviour suggests a dangerous endeavour, though a 'profitable' risk in terms of supply and one 'of greater value from a symbolic point of view'.[234] However, Leduc suggests this was perhaps a seasonal pursuit, 'during warmer months', which accompanied 'the rut' meaning that a distracted quarry with a disregard for self-preservation was possibly 'easier to find and hunt'.[235] These elements and timings could also provide insight into ritual connotations, a sacredness, behind such practices. This 'seasonal' element to the movements of this particular group of people has already been discussed (above: **Chapter 1: Literary Review – A Recapitulation of 'The Ryemarksgård Bone'**).

[230] Leduc, 2012, p.70.
[231] Leduc, 2012, p.65.
[232] Leduc, 2012, p.71.
[233] Leduc, 2012, p.71.
[234] Leduc, 2012, p.70.
[235] Leduc, 2012, p.70.

Leduc's *chaîne opératoire* consists of 3 links, 'acquisition', 'butchering treatment', and 'consumption and/or use of resources'.[236] This 'butchering treatment' itself consisting of, 'skinning, disarticulation, meat removal'.[237] Leduc states that the 'exploitation sequences, butchering pattern and selection of resources seem to have been very standardized during the Preboreal in Zealand.'[238] For example, Leduc suggests the evidence viewed at the Lundby Mose (Southern Zealand) site expresses a systematic, repeated, approach to exploitation.[239] Throughout, kill methods, harvesting, and obtaining certain things, to the discarding of waste material, there is patterning.[240] Leduc highlights there is a clear system of 'on site' butchery 'in order to supply the community with meat, bone marrow, hides, and raw material for tool manufacture'.[241] Along with evidence of 'immediate and a postponed consumption'*, these practices translate across other sites (Denmark) concerning Maglemosian timeframe.[242]

[*Not dissimilar to hunting practices across the world today. Whether it be in ritualistic/ceremonial thanks along with offerings. Or purely practical, to provide the hunters sustenance for the return journey to a form of settlement. Or as Leduc suggests 'a response to constraints related to carcass weight' (ease of transportation), as has already been suggested.[243]]

In a particular case belonging to the Lundby Mose site, 'three small lithic flakes were found among the bone fragments, possibly part of the butchering equipment', (the reader is urged to refer back to the hypothesis and the use of fragments from the flint phalli).[244]

In terms of the 'why?', to certain elements of these processes, Leduc suggests possibly a '"ritual" or "cultural" dimension, specifically concerning the way the waste was gathered,

[236] Leduc, 2014, p.200.
[237] Leduc, 2014, p.205.
[238] Leduc, 2014, p.211.
[239] Leduc, 2014, p.205.
[240] Leduc, 2014.
[241] Leduc, 2014, p.199.
[242] Leduc, 2014, p.199.
[243] Leduc, 2014, p.207.
[244] Leduc, 2014, p.205.

probably wrapped in a container (hides?) and discarded into the lake cannot be excluded.'[245] Of course, there are practical elements to the cleansing of hunting sites also. There is a vast amount of academic research and evidence concerning certain species and their sensitivity when coming across, and shown toward, the dead of their own. This type of behaviour undoubtedly perceived by these hunters meant that if certain sites were to continue in being profitable, they would need to be tidied.

Archaeological evidence shows a practice of the use of Human skeletal material within this Danish (and in fact, throughout the Mesolithic Europe) bone industry.[246] A Scandinavian example being perforated human teeth 'found at Early Mesolithic (Maglemose culture 9,000-6,000 cal BC) settlement site Sværdborg I – 1943 in Denmark'.[247] It is important to note this evidence as it may aid in beginning to understanding the position of these prehistoric peoples, in their view, in the animal kingdom. As Kristiina Mannerma et al. state, in the reading of their data, that it 'indicates that treatment of human bone and using it in artefact manufacturing was not necessarily considered different or abnormal behaviour'.[248]

[245] Leduc, 2014, p.211.
[246] Mannermaa et al., 2022, p.1.
[247] Mannermaa et al., 2022, p.1.
[248] Mannermaa, et al., 2022, p.10.

Summary

Conclusions have been drawn throughout. However, to reiterate the importance of adopting the method proposed by Chantal Conneller, that to escape a 'traditional' 'mind/matter division' one needs to take this criticised modern concept of practice, the steps in between internal image and crafted object, described as, using an industrial allusion, a mechanised process of fabrication to which the human body is as machine, and combine it with the variability, and the reaction, of matter to being worked and the resulting emotional stimuli.[249] It is necessary to obtain a prehistoric perspective.

As one Ancient Greek myth (Deucalion and Pyrrha) would have it, the human race was once reborn from stone, stone representing the bones of Mother Earth.[250] Therefore, rather than a material having a soul to begin with (animism), perhaps it can be gifted one by an object's maker. The maker's importance is perhaps not something this work has explored closely enough. The appeal of association, coveted items, is still everyday evident in our materialistic society; we have museums full of stuff. In turn, the responsibility of ownership carries a great weight, as a traditional practice like flushwork might highlight, conservation and restoration being of crucial cultural importance.[251] This implies in some cases the maker is of primary import and the material and subject matter, secondary. Obviously, that said, it is only through the study of the extant materials that one can come into contact with those on the other end.

The counter argument is that even if all pieces were available and a definitive answer manifest, a true understanding could not be arrived at. We are not them and their time is not now. This would be where certain steps followed above, end. That which has been rediscovered offers only a semblance of its meaning.[252] What is left is only a semblance of

[249] Conneller, 2014, p.28.
[250] Ov.*Met*.1.381-415.
[251] Steinbeck, 2009, p.9.
[252] Heidegger, 2011, pp.36-37.

what was.[253] However, this does not mean there is nothing to be learned from distortions of this kind.[254]

The main body of work offers little more than the beginnings of several sequences. Below, presents possible places of departure from these beginnings, areas of which would require further research. Two examples, of certain theories bearing particular relevance to the Bone, might well be those belonging to eroticism and art history and criticism.

Directions for Further Research: Eroticism

Certain key aspects of Georges Bataille's psychoanalytic understanding of eroticism may be pertinent to this work. Bataille states, 'in antiquity [applicable to prehistory?] the destitution (or destruction), fundamental to eroticism was felt strongly and justified linking the act of love with sacrifice'.[255] The foundation of this work's hypothesis is that objects such as decorated, exploited, phallic shaped, flint nodules, the hunting of specifically selected culturally significant beasts, and fertility, are in some way linked. Bataille suggests, 'nakedness offers a contrast to self possession, to discontinuous existence', a 'state of communication revealing a quest for a possible continuance of being beyond the confines of the self'.[256] Bataille is referring to mortality ('discontinuous beings', 'continuous' only in death) and human life's continuation only through reproduction.[257] In this case all components are essential to the desired outcome. This 'trial run', so to speak, consists of the exploitation of phallic shaped flint nodules, the digging of holes, then the burial of the rest of the pieces. Jean-Paul Sartre suggests 'doubtless the sex organ [vagina] is a mouth, and a voracious mouth which devours the penis – which may well bring in the idea of castration: the act of love castrates the man – but that is because, before anything else, the sex organ is a hole', perhaps these metaphors can be grouped.[258] This is as close as the male (leaving out speculation on age) can come to the actual, physical, sexual act before coming of age. They may just as well serve to highlight a superstitious connection to Mother Earth,

[253] Heidegger, 2011, pp.36-37.
[254] Heidegger, 2011, pp.36-37.
[255] Bataille, 2001, p.18.
[256] Bataille, 2001, p.17.
[257] Bataille, 2001, pp.11-25.
[258] Sartre, 2020, p.794.

an offering to the divine in the form of a metaphorical dismembering which then relinquishes one, in some way, to build a family of one's own.

Directions for Further Research: Art History and Criticism

This example, is presented in the form of a miniature literature review of Georges Bataille's short essay, or chapter, entitled 'Primitive Art', from the collection '*The Cradle of Humanity: Prehistoric Art and Culture*'.

Though in no way dismissive of Georges-Henri Luquet's contribution, Bataille, in review, believes there to be a difference between child's 'play' and the 'primitive' when evaluating the developmental stages of these, the child's and the 'primitives', artworks.[259] From Luquet's viewpoint, what comes before art is a child's automatic (motor skills in action rather than anything divinely receptive) scribblings.[260] Luquet draws a concluding parallel between these '"mechanical assertions of their author's personality"' and that of the efforts of the 'primitive'.[261] However, Bataille states 'from a few bizarre lines, chance unleashes a visual resemblance that can be fixed through repetition', the child's play being 'bizarre lines', and the primitive's being 'visual resemblance', the two at different stages in an evolutionary path.[262] Similarly, the written version of unintelligent sound that presumably preceded intelligible speech.[263] The 'primitive' art that has come down to us, is the product of 'successive destructions' or 'alterations', as to make any kind of mark, Bataille suggests, is to change, deface, destroy, essentially a form of practice.[264] The subconscious, or aimless, common source having already taken place elsewhere. Potentially, representation via deliberated, active intent, however abstract, qualifies as some form of art. This slight definition, not Bataille's intention, at the very least highlights intention as a key aspect in defining art. [Lacking is the role of experience (both the artist's and the audience)]

[259] Bataille, 2005, pp.35-44.
[260] Bataille, 2005, pp.35-44.
[261] Bataille, 2005, p.40.
[262] Bataille, 2005, p.41.
[263] De Saussure, 2023, p.xxxv.
[264] Bataille, 2005, p.41.

Bataille questions along with this evolution of realism, from scribble to form, whether there are also changes in meaning accompanying the physical process. Certainly, for Bataille, this is another distinction between the drawings of children (no), and primitives (yes) in certain respects for example, 'such a transformation occurred for the Aurignacians in the representation of animals and not in the representation of man'.[265]

Bataille states, 'only the differing treatments of animals and humans will be able to provide some insights into the psychology of prehistoric man'.[266]

word count: 16313

[265] Bataille, 2005, p.43.
[266] Bataille, 2005, p.44.

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Appendices

'I am an Instrument' by Sun Ra

I am an instrument
The timbre of my voice flies with the winds of heaven
I belong to one who's more than a musician

He's an artist
I live to be his pleasure
I do not flee from him when he comes to me
For instruments are not sufficient in themselves
They're cold and lifeless without the touch of hands and mind
The artist hold myself tenderly in his hands

First, he touches the strings of my heart
To find if they're in tune with the universe
Then suddenly vibrant thought strikes the air
And music from the world of time and space
Is born[267]

[267] Sun Ra, 2016, '*I am an Instrument*'.

Flint Technology from Jensen, 2013

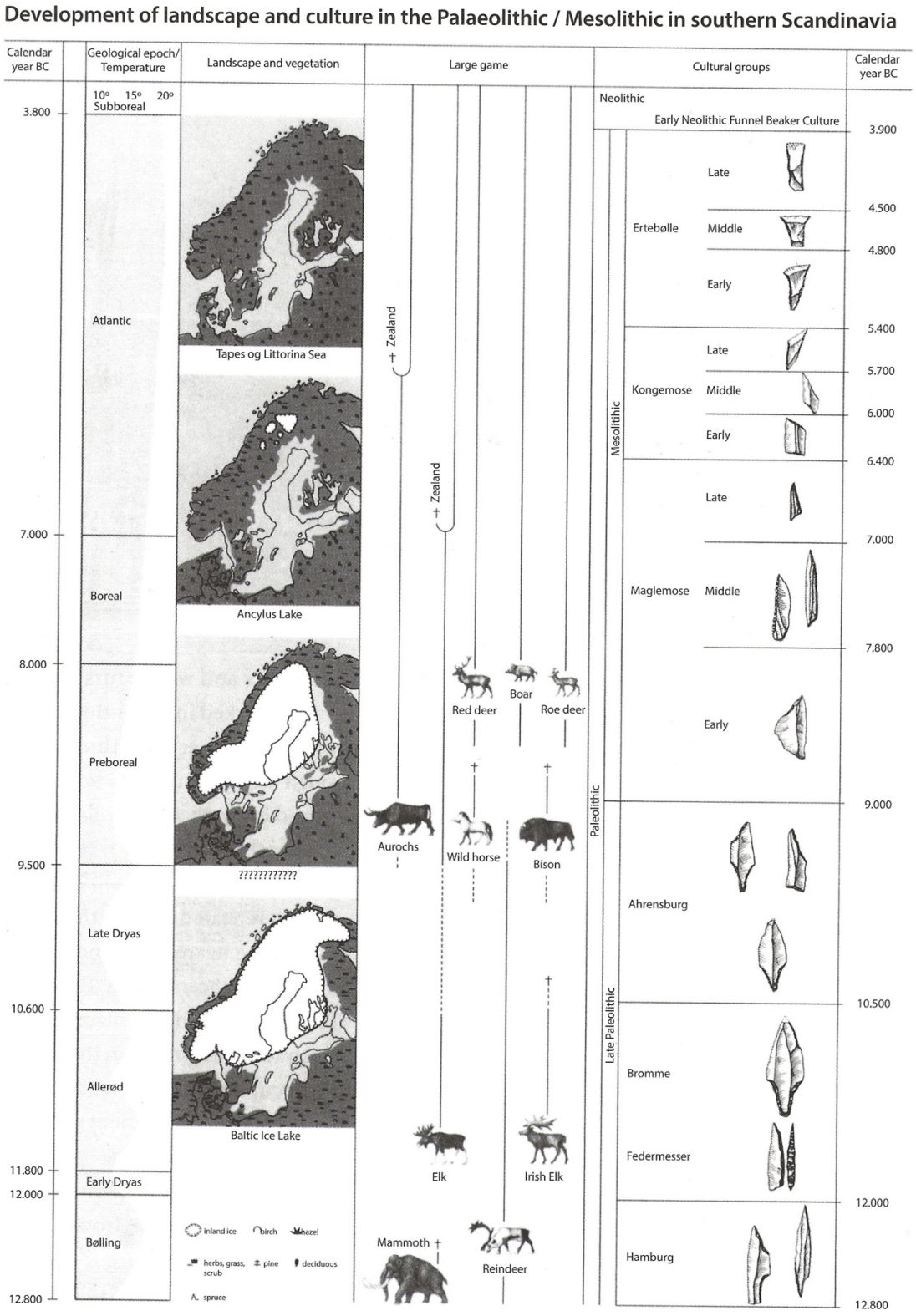


Figure 24.

Various microlith types from the Maglemosian period, beginning with the earliest and ending with the latest.

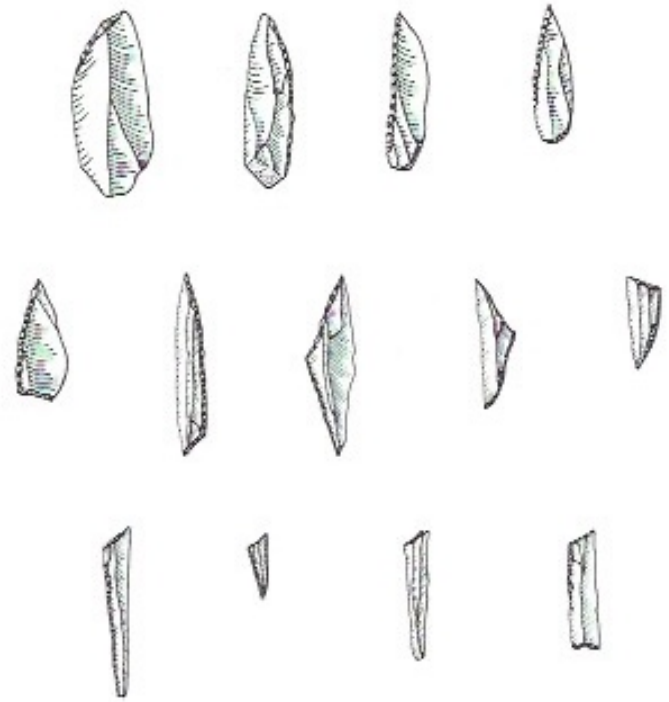


Figure 25.

The Most Appropriate Journey

The adverb ‘near’, an abstract term of distance. Where was the ‘Ryemarksgård Bone’ found? central/western Zealand. Jystrup, Ringsted municipality to Jyderup, Holbæk municipality.

The mentioning of the name Ryemareksgård comes with an understanding of the object in question.

Slightly conflicting evidence, the Nationalmuseet Dk lists it as both central Zealand (Room 2 cabinet labelling) and western Zealand (online). A contact at the Nationalmuseet Dk in an email correspondence states ‘the club from Ryemarksgård, Jystrup Parish’. Then there are the academic papers that mention the Ryemarksgård Bone, for example which both state ‘near Jyderup’, which is in Holbæk Municipality.[268] These discrepancies may or may not prove important. In the grand scheme these matters of distance on an island such as Zealand, Denmark, are insignificant. Most places are ‘near’ to one another from a Modern perspective (perhaps, even from a Prehistoric perspective? Zealand is 7,031 km2). That said, the difference between areas inland to coastal may prove significant.

Clearly (understandably and obviously) my knowledge of the Danish language, which is non-existent, is problematic to say the least and a major concern when dealing with the available evidence, creating an over reliance on English language sources.

Being based in Copenhagen for the briefest of periods, 26th November - 30th November 2024, (with every place essentially lying to the west), and unsure of the Bone’s precise provenance, the decision was to head, by train, to the furthest of the places mentioned, Jyderup. This journey crosses the majority of the island, on an east-west axis. Given that environment is key a section of the research and, for now, the assumption of the nomadic tendencies of the prehistoric peoples in question, this was deemed the most appropriate journey to undertake.

In what environment do nomadic people dwell? Seasonal?

Copenhagen to Roskilde - the land is dominated by industrial and residential premises. Copenhagen’s overspill and Copenhagen’s commuter belt.

From Roskilde, the surrounding area and beyond, westwards, the connection to the City (in terms of buildings) is broken. Minor undulating terrain with no real topographical focal point or natural monuments. Bogs and patches of marsh land are visible along with pockets of wood and forest, though, for the most part, it is taken as agricultural land (arable in the main, from what could be seen). In one area people with dogs were taking part in an organised game shoot (fowl). Of course, the accompanying intermittent settlements of various population sizes. (Copenhagen outbound) Roskilde, for instance, with a population of approximately 53,000, Holbæk 30,000 plus, to Knabstrup with some 1000 odd inhabitants, and scattered farmhouses in between. (At the last Consensus, January 2024.)

[268] Drewsen, 2024, p.4; Jensen, 2013, p.58.

Anything of the lowest lying land is taken back by the water, at least at this time of year (November). However, even the smallest of these areas are farmed around. There is a definite permanence to their make-up (the flora for instance), suggesting they are still present in the landscape during the summer months also, visible, respected possibly, Prehistoric remnants.

28th November 2024
Scandic Palace Hotel, Copenhagen.

P.S.

Once back in England I received clarification regarding the exact location of the find, along with some travel instructions (see below).

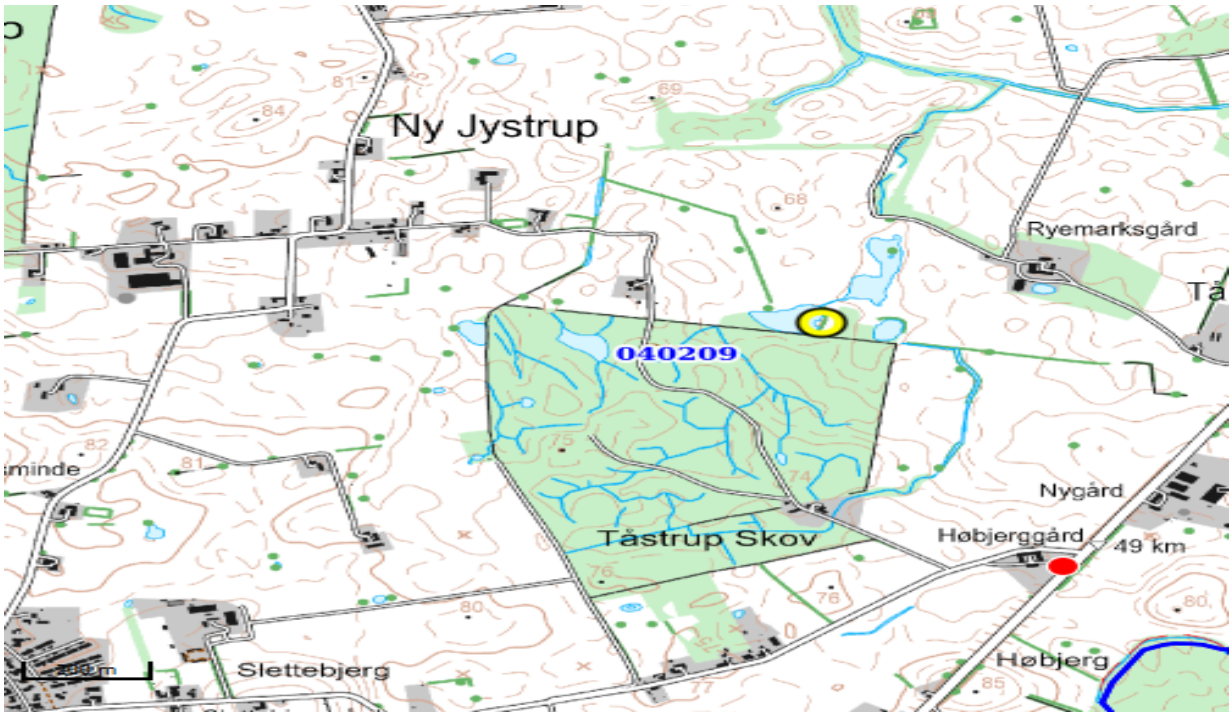


Figure 26.

'The bone was, as you write, found in Jystrup Parish in Sorø county. The approximate find-location has been marked'. 'It looks like travelling from Copenhagen Central Station to Ny Jystrup (which is quite near the find location) with public transport would take approximately two hours.'

[A very special thank you to Tilde Yding Abrahamsen, Studentermedhjælper, at the Nationalmuseet Dk.]

1st December 2024
Martlesham Heath, Suffolk.

Aurochs Butchery

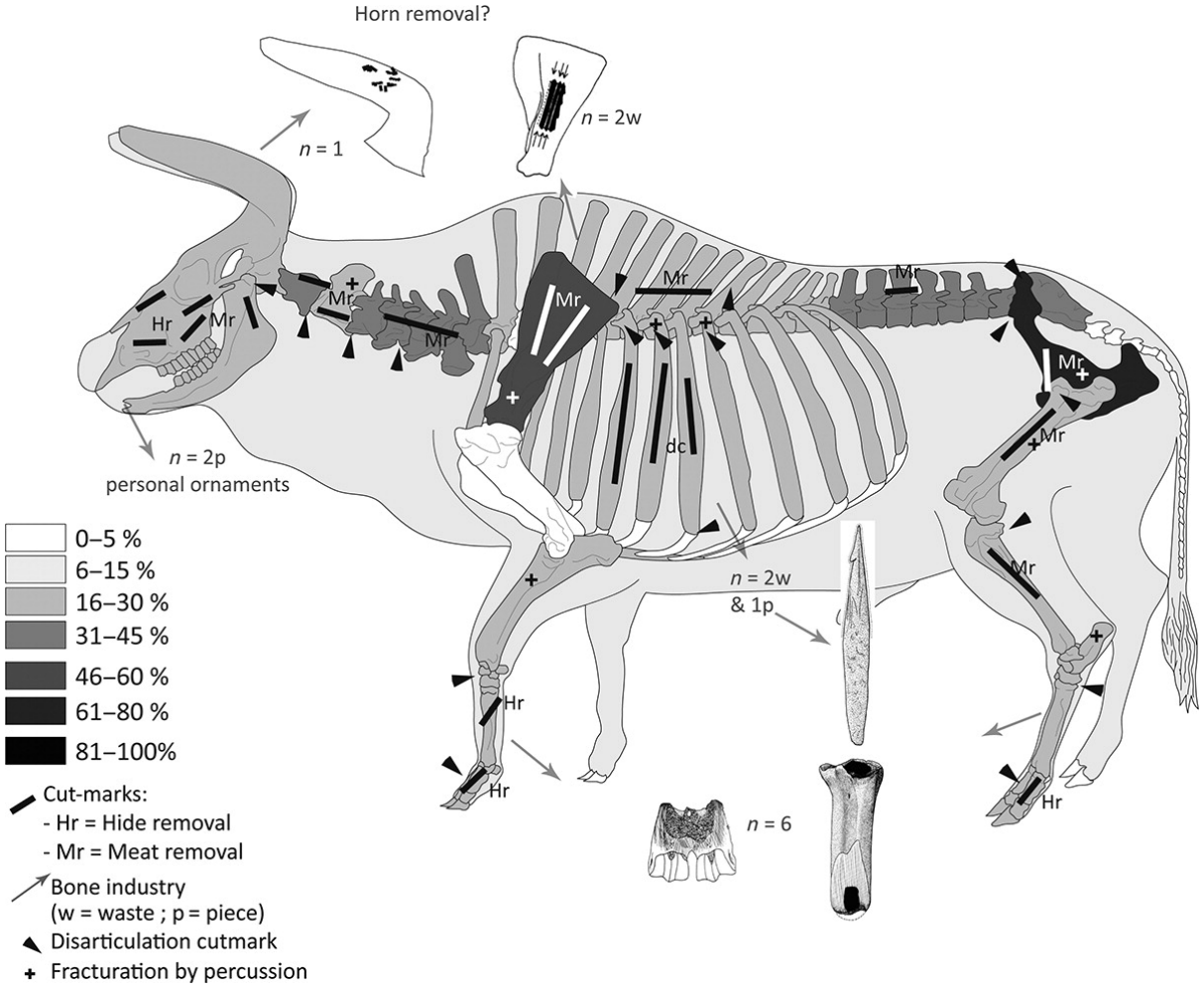


Figure 27.

Skeletal part, cutmark and bone tool industry distribution for adult aurochs at Mullerup (NISP= 292; MNE= 178; MNI= 5).[269]

NISP – number of identified specimens = total count of bones per species.[270]
MNE – maximum/minimum number of elements.[271]
MNI – minimum number of individuals.[272]

The diagram (above) collates the evidence in the bone material, for this particular species (*Bos primigenius*) at a particular site (Mulerup, Zealand, Denmark), highlighting butchery and disarticulation, potential skinning incisions for the removal of the hide, and the cracking of bones to access the vitamin and mineral rich marrow.[273]

[269] Leduc, 2012, p.75.
[270] National Park Service, '*Faunal Analysis Student Handout*', p.3. www.nps.gov
[271] Marean et al., 2001.
[272] National Park Service, '*Faunal Analysis Student Handout*', p.3. www.nps.gov
[273] Leduc, 2012, p.76.

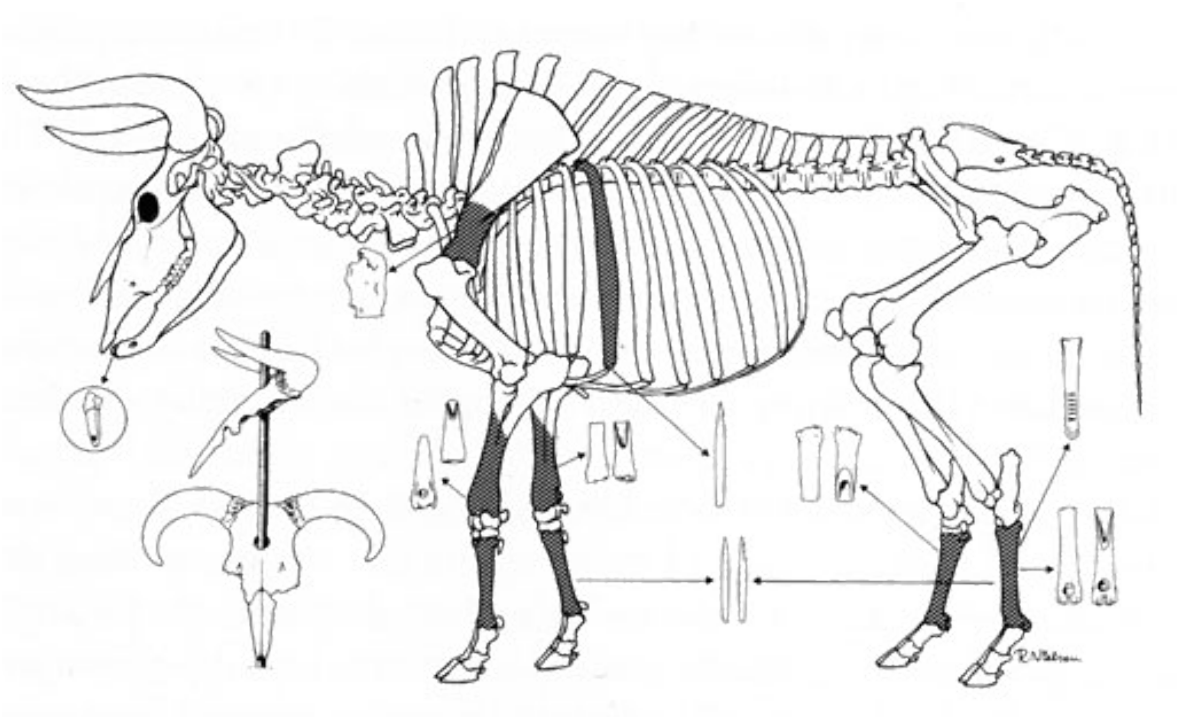


Figure 28.

'The hunter-gatherers of the Stone Age used various parts of the aurochs' skeleton for making tools and jewellery'.[274]

Leduc states, 'the use of metapodials as raw material is systematic'.[275] Being, 'used only for heavy tools, thus exploiting the specific properties of these bones: big size, strength, and weight'.[276]

[274] 'Prehistoric period (until 1050 AD)/The Mesolithic period/The Aurochs from Vig – Tools made from aurochs' bones'. en.natmus.dk
[275] Leduc, 2012, p.77.
[276] Leduc, 2012. P.77.