

SEXUAL SYMBOL OR DOMESTIC TOOL? THE USE OF BEAR *BACULA* – AN ASSESSMENT OF THE ARCHAEOLOGICAL AND ETHNOGRAPHICAL RECORD

Abstract

The present paper attempts at understanding the background to and possible use of bear bacula in Stone Age contexts. Particular focus is given to the *baculum* from the Late Palaeolithic site of Bonn-Oberkassel. In order to allow for a more general interpretation of such finds, their meaning and symbolism, we compare the Palaeolithic evidence with ethnographic contexts.

Keywords

Ursus spelaeus, *Ursus arctos*, human-bear relationship, Upper Palaeolithic, Rhine valley, Swabian Jura

INTRODUCTION

Ursines have always been fascinating to humans due to their ability to walk upright on their hind limbs and to mimic human gestures. Numerous ethnographic sources document a very deep relationship with bears in more recent times (Giemsch, 2017), which has had a strong impact on the palaeontological and archaeological research history on cave bears between the end of the 19th and the beginning of the 20th century (Pacher, 1997, see references therein). Even though the rich archaeological record documents human-bear interactions (Morel, 1993; Münzel et al., 2001; Germonpré and Hämäläinen, 2007; Wojtal et al., 2015), their relationship often remains difficult to interpret.

With the beginning of systematic speleological research in the early 19th century, regular finds of huge amounts of cave bear remains associated with Middle Palaeolithic artefacts led to the erroneous conclusion that these animals were hunted by Neanderthals (Bächler, 1921; Hörmann, 1923; Abel and Kyrle, 1931; Ehrenberg, 1954). The idea of a ‘cave bear culture’ with Neanderthals as *Kulturträger* (makers of the culture) emerged. Supposed tools made from cave bear bones were taken as an indication for such a culture, and numerous findings in caves, of cave bear skulls under rock slabs or in niches, as seen in Drachenloch and Wildenmannisloch in Switzerland (Bächler, 1921, 1940), in Petershöhle in Germany (Hörmann, 1933; Hilpert and Kaulich, 2005), in Drachenhöhle near Mixnitz (Abel and Kyrle, 1931) and in Salzofenhöhle in the Totes Gebirge (Ehrenberg, 1954), both in Austria, in Veternica in Croatia (Malez, 1959), in Peștera Rece in Romania (Lascu et al., 1996; Rosendahl and Döppes, 2015) and Zeda Mgvime Cave in the Tsutskhvati Cave Complex in Georgia (Tushabramishvili, 1978) were interpreted as evidence for ritual practices associated with a cave bear cult (but see review in: Pacher, 1997; Rabeder et al., 2000). Relatively early in this discourse, taphonomic arguments were brought up to explain such accumulations of cave bear remains in caves, through processes such as natural death of cubs and old individuals after hibernation (Kurtén, 1958, 1995; Rabeder et al., 2000). Soergel (1940) estimated the sedimentation rates in caves to prove the slow and natural deposition of cave bear remains due to taphonomic processes. Other taphonomic approaches con-



Fig. 1 Ritual birch-bark storage vessel for keeping spoons that were used in bear feasts, decorated with 15 brown bear (*Ursus arctos*) penis bones. Siberian Udege culture from the Amur-region, early 20th century. – (Collection MAE RAS: № 2336-1, Image ID: 3845867).

cerning the 'cave bear bone industry' postulated by Bächler (1921) argued for the presence of pseudo-tools as the result of natural sediment rounding (*charriage à sec*), and excluded anthropogenic modification (Koby, 1943). Gradually, a general scepticism against cave bear hunting and cave bear bones as a resource for bone tools arose amongst scientists, however, brown bear hunting was never questioned (Koby and Schäfer, 1961). More recently, zooarchaeological research has documented both hunting and exploitation of cave bears (Münzel et al., 2001; Münzel and Conard, 2004; Germonpré and Hämäläinen, 2007; Wojtal et al., 2015; Terlato et al., 2019). But even symbolic or ritual behaviour seemed to occasionally involve bear remains in the Palaeolithic, as highlighted by the clay sculpture of a bear in Montespan cave (Begouën and Casteret, 1923) or the skull deposition in Grotte Chauvet (Chauvet et al., 2001), both in France, or the ochre stained cave bear bones in Goyet and Trou de Chaleux in Belgium (Gemonpré and Hämäläinen, 2007). Another indication of the important role bears played in the life of Palaeolithic hunters are their depictions in Palaeolithic parietal art, such as in Grotte Chauvet (Clottes, 2001), in Grotte du Pechialet (Breuil, 1927), in Les Trois-Frères (Breuil et al., 1956), all in France, and in mobile art as the ivory sculptured bear from

Geißenklösterle cave in SW-Germany (Hahn, 1986). Overall, 55 depictions in 23 caves (parietal art) and nearly 80 depictions on objects (mobile art) are known from Europe (Rouzaud, 2002). Aside these, the close ties between humans and bears are also documented in personal ornaments, such as bear tooth pendants (of canines or incisors), probably worn as amulets, which have been found at several Palaeolithic cave sites (Pacher, 2005; Kölbl and Conard, 2003), or in Mesolithic burial contexts (Grünberg, 2000, 2013). All these examples attest to a special relationship between humans and bears.

In the following, our contribution focuses on a rather rare ursine bone, the penis bone or *baculum*. The possible use and/or symbolism of the *baculum* provides some peculiarities in ethnological as well as archaeological contexts.

ETHNOGRAPHIC EVIDENCE

The ethnographic record provides a frame of reference that may give an idea on the metaphysics of current indigenous people. This record serves as analogy, though it cannot be transferred to Palaeolithic- or any other archaeological contexts

Ceremonies and rituals related to bears are manifold in circumpolar ethnographies (Pacher, 1997; Germon-pré and Hämäläinen, 2007; Giemisch, 2017). Several ethnographic sources refer to the use of brown or polar bear *bacula* amongst indigenous populations across the circumpolar sphere.

In general, it is documented for several Siberian peoples that bear *bacula* were worn by women directly on their bodies in order to ward off or cure infertility and ease birthing (Vasil'ev, 1948). For example, the Udege people of the Amur region in Siberia see the bear as their forebear and therefore regard him as untouchable (Albert, 1956). No woman was to sleep on a bearskin and should at all times keep the *os penis* safe at her side and pass it on to her descendants along the female line. These customs are still strictly adhered to by the Udege people (Albert, 1956). There are other observations of Udege women carrying amulets of bear penis bones as an Apotropaion or amulet against infertility (Okladnikova, 1979). A highly interesting cylindrical ritual vessel of the Udege comes from the Khabarovsk Region (**Fig. 1**). The vessel was used to store ritual spoons used to serve boiled bear's meat during the bear feast and a total of 15 ursine penis bones are attached to the upper part of it. The records of the Kunstkamera archive further state that "when a bear cadaver was divided, the hunter who killed a he-bear received its penis. This he would pass on to his wife or another close female relative. This organ symbolises the relationship between man and bear and was seen as a powerful amulet that could heal infertility or ease childbirth" (Kunstkammer St. Petersburg, 2020). The Tuva people from southern Siberia also see penis bones of bears as a symbol of power and strength (Clottes, 2016).

The Ket people, who settle along the Yenisei river in Siberia are known to deposit the bear skull, skin, snout, lips, gallbladder, eyes and penis in a box, together with an image of a bear sketched on birch bark, upon killing a bear. Together with a cedar-twig, braided into a ring, which symbolically joins the different body parts, this deposition makes it possible for the bear to be reborn in the forest (Ivanov and Levin, 1964; Kiriyak, 2007).

Several authors relate to the Saami of northern Scandinavia, who understood penis bones of bears to be particularly powerful and strong, therefore kept them and attached them to sacred drums (Hultkrantz, 1992; Kroik, 2006). Some sources mention that amongst the Finnish Saami (Pentikäinen, 2006), anyone killing a bear received its skin, head and *baculum*. The *baculum*-tradition is part of a fundamental sexual key aspect of typical bear stories in which the mythical bear of the North tends to be male. Other sources state

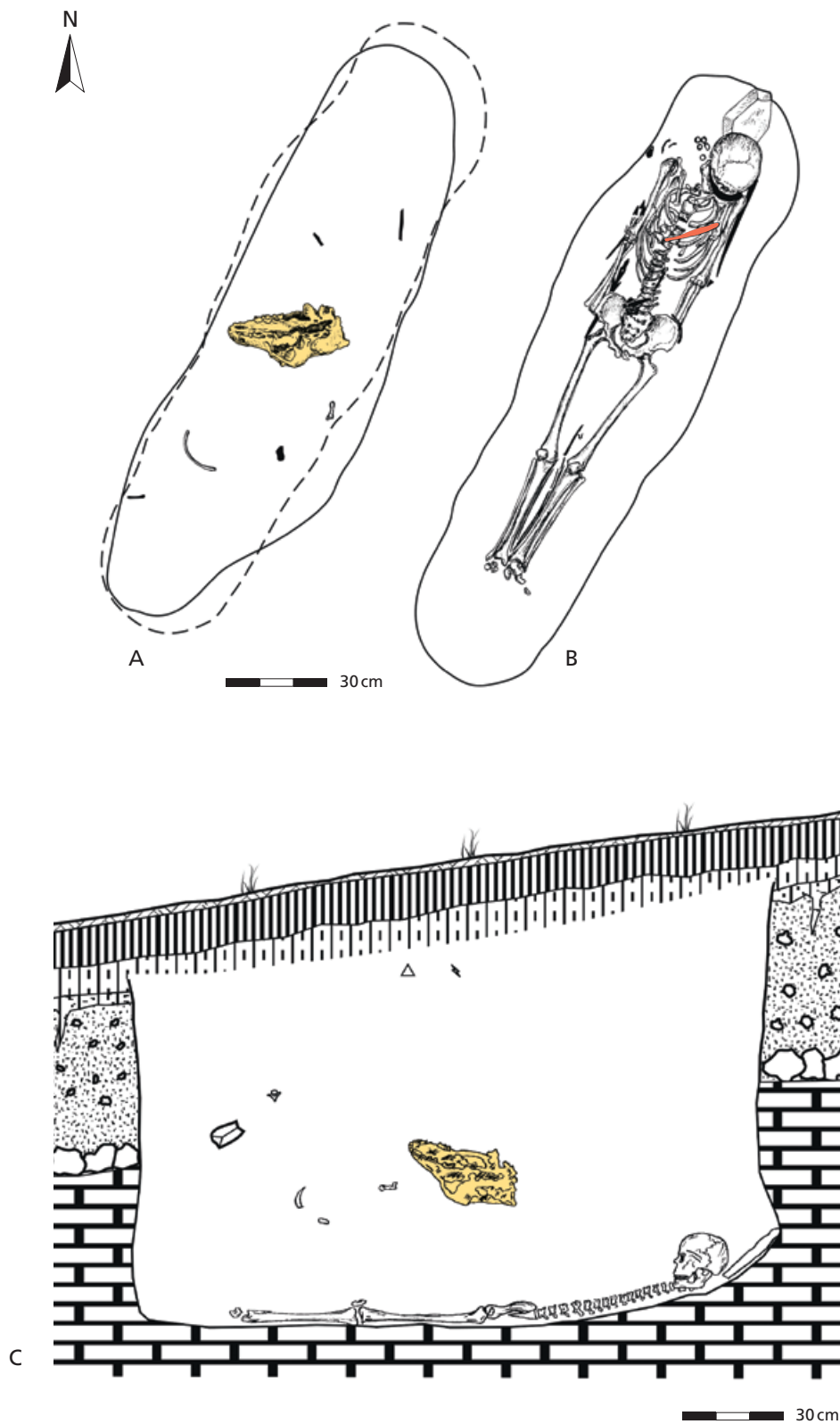


Fig. 2 Shamanka II (Siberia): Burial no. 22 with bear remains (*Ursus* sp., probably *U. arctos*). While the bear skull was placed above the buried individual (**A**, **C**), the bear *baculum* (filled object in **B**) was diagonally placed directly onto the chest of the individual (**B**). – (From Losey et al., 2013: Fig. 4.3).

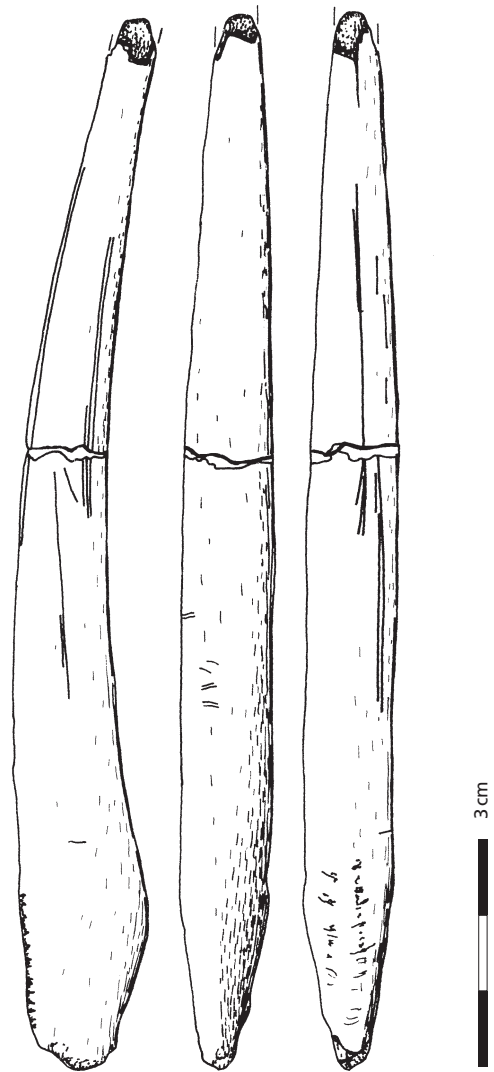


Fig. 3 Cut-marked penis bone of a bear (*Ursus* sp., probably *U. arctos*) from the Magdalenian of the site Teufelsküche (Baden-Württemberg, Germany). In addition, the distal (upper) end is broken, probably during work. – (From Pasda, 1994: 166 Pl. 43,6).

that Saami men would greet bears in the manner of an approaching groom, whilst Saami women would avoid bear penises and penis bones and instinctively protect their abdomens (Frog, 2008).

In native cultures of Alaska, in which *bacula* of other carnivores are frequently used, the fossilised *bacula* of polar bears were often polished and used as hilts for knives and other tools (Long, 2012). In indigenous people from the northern American continent the successful bear hunter received a dog whip with a handle made from a bear's penis bone (Saladin d'Anglure, 1990; Mithen, 2003).

The Inuit, on the other hand, associate the bone with male initiation rites to adulthood. Shamans use Polar Bear penis bones in traditional Inuit ceremonies. Here, the penis bone is believed to aid communication with the spirit world. By holding the bone in his hand, the Shaman is able to receive the thoughts and will of the spirits (oral communication of Shaman Hivshu, 19th March 2016 in the Archäologisches Museum Frankfurt).

The contexts in which *bacula* are used in indigenous societies are distinguished very clearly by their bringing power and strength to the owner, independently of their use as a tool, such as handles, or for Shamanistic ceremonies. Noteworthy is their ubiquitous significance in protecting women against infertility. As with tools, this might be related to their assumed property of giving the owner the power and strength to ease potency. Moreover, male or he-bears are not only seen as the forbear, but also as grooms replacing the human husband.



Fig. 4 Bonn-Oberkassel (Germany). Late Palaeolithic double burial, as arranged in the permanent exhibition in the LVR-LandesMuseum Bonn. – (Photo: Jürgen Vogel/LVR-LandesMuseum Bonn).

ARCHAEOLOGICAL EVIDENCE

In this light we try to evaluate the rare archaeological evidence of ursine penis bone use, which is difficult to decipher. In contrast to ethnographic sources the archaeological evidence does not provide written or oral communications. Most archaeologists are therefore extremely cautious with their interpretations. Contrary to usual archaeological praxis we will provide some examples of *bacula* use from the youngest to the oldest evidence.

The most important source for prehistoric use of bear *bacula* was found in the spectacular stone age burial site of Shamanka II¹ at Lake Baikal in Siberia (Losey et al., 2013). Whereas the available dates (ca. 8,000-7,000 cal BP) hint at an early Neolithic context, the archaeological remains speak in favour of a late Mesolithic hunter-gatherer context. 35 of the 154 stone age burials contained bones of brown bears (*Ursus arctos*). The assemblage consists mostly of bear teeth, skull bones as well as *bacula*. In contrast to the skull fragments, the *bacula* were found directly on the human skeletons or in concentrations directly adjacent to the buried individuals (Fig. 2). Overall, there are 16 fragmented or intact *bacula* spread across eight human burials, six of which contained human adult males. One *baculum* lay beneath the shoulder of a 1.5

¹ The site of Shamanka II revealed also burials from the early Bronze Age (ca. 5,400-4,000 cal BP).

to 3 year old child and two more were found amongst the dissociated and spread remains of seven adult human individuals of both sexes. One *baculum* had been smoothed intensively at its distal end in order to create a sharp gouging tool such as an awl. Nine other bones bear slight traces of smoothing or use, while one specimen was deeply scored circumferentially, possibly in order to fasten a string. Another bone shows striations along its base. Because the majority of *bacula* of Shamanka II are associated with human male adults, they may be understood as a symbol of the direct transmission bestowed by the male reproductive organ onto the generative potency and virility of the men (Losey et al., 2013). The use of a *baculum* as a grave good for the 1.5 to 3 year old child, however, may imply a belief that the bone helped to transfer the power or strength of the bear at early age to this individual.

While brown bear bones and teeth, used as grave-goods have also been identified at some Mesolithic burial sites (Grünberg, 2000, 2013), no penis bones have been found in Mesolithic contexts to date.

An ursine penis bone (*Ursus* sp.) was found in the late Magdalenian cave site Teufelsküche close to Ehrenkirchen in Baden-Württemberg (Germany), located in the Upper Rhine valley. The bone bears longitudinal traces of scraping along the shaft, most likely from skinning. The distal end of the *baculum* is broken, most likely during its use, probably as an awl (Fig. 3) (Pasda, 1994: 166 Pl. 43,6; Bosinski, 2008).

One of the most interesting finds from a Late Palaeolithic context, is the penis bone of a brown bear (*Ursus arctos*) found in the ca. 14,000 year old double-burial of Bonn-Oberkassel (Fig. 4; cf. Giemsch and Schmitz, 2015). This *baculum* is generally interpreted as a grave good (Szombathy, 1920; Mollison, 1928; Street, 2002; Giemsch et al., 2015). The grave of a 35-45 year old male and a ca. 25 year old female was discov-



Fig. 5 Bonn-Oberkassel (Germany). Penis bone of a brown bear (*Ursus arctos*) with scraping traces from the Late Palaeolithic double burial. – (Photo: Jürgen Vogel/LVR-LandesMuseum Bonn).



Fig. 6 Brillenhöhle, Blaubeuren (Swabian Jura, Germany). Decorated cave bear (*Ursus spelaeus*) baculum from the Gravettian layer AH VII. The distal (upper) end is worked and shows use wear. – (Photo: Landesmuseum Württemberg, Fabian Haack).

ered in the course of quarry-work in 1914. In addition to the human skeletons and the ursine penis bone it contains early dog remains and two art objects, highlighting the exceptional character of the site (Giemsch and Schmitz, 2015). Unfortunately, given the early discovery of the site during quarrying work, there is no map of the location of the skeletons and their grave goods. Martin Street was able to identify a series of cuts along the convex edge of the bear *baculum* (Fig. 5). These were later overlain by haematite and must have been created before their deposition in the grave (Street, 2002). This suggests a purposeful deposit in the grave as a grave good. As early as 1919, the original investigator, Max Verworn, interpreted the bone as a grave good and suggested that it had been used as an awl or similar tool (Verworn et al., 1919). Originating from Gravettian contexts are two other *bacula* found in cave sites of the Swabian Jura (Germany). One comes from the Gravettian layer AH VII of Brillenhöhle in the Ach Valley near Blaubeuren. The penis bone of a cave bear (*Ursus spelaeus*) shows six deep notches (Fig. 6) and dates to roughly between >29 and >25 ka (uncal.) ¹⁴C BP (conventional radiocarbon dates published in: Riek, 1973²). The tip of the *baculum* displays an old fracture; its use as an awl was considered (Riek, 1973; Barth, 2007; Barth et al., 2009). During an inspection of the *baculum* in the Württembergisches Landesmuseum Stuttgart by com-

² From layers AH VII and VIII charred bone samples have been conventionally dated in Bern: AH VII: > 25 ka (uncal.) ¹⁴C BP (B-492) and AH VIII: > 29 ka ¹⁴C BP (B-491) (see Riek, 1973: 156).

Based on by lithic refits of Gravettian layers between Hohle Fels, Geißenklösterle and Brillenhöhle, AH VII of Brillenhöhle is to be dated to 27-30 ka ¹⁴C BP (Scheer, 1986; Moreau, 2009).



Fig. 7 Hohle Fels, near Schelklingen (Swabian Jura, Germany). Polished cave bear (*Ursus spelaeus*) *baculum* from the Gravettian layer AH IIcf. – (Photo: M. Malina, © Universität Tübingen).

paring it with a complete cave bear *baculum*, we recognized that a considerable part of the distal end (in the anatomical sense; in reference to tool orientation this would be the proximal end) is missing. The distal end shows longitudinal thinning facets towards the tip implying a re-sharpening of the pointed end. The use as an awl is evidenced by a broken off flake at the tip displaying the cancellous tissue in the inner part of the *baculum*, furthermore, fine circular striae at the tip support the interpretation as an awl. The cave site Hohle Fels, also situated in the Ach valley between Schelklingen and Blaubeuren (Germany), yielded several complete and fragmented penis bones of *Ursus spelaeus* ($n = 49$) and brown bear ($n = 2$). One cave bear *baculum* (Fig. 7) from the Gravettian layer IIcf is intensively polished on all sides. The polished surface is covered with fine scratches pointing in all directions, in addition there are longitudinal cut-marks probably caused by defleshing (Münzel et al., 2001; Münzel and Conard, 2004). We suggest the marked polish to be use wear originating from leather working similar to the polish seen on smoothers (Münzel et al., 2001: 324; Scheer, 1995).

Another *baculum* find of *Ursus spelaeus* comes from the cave site Vindija in north-western Croatia. The stratigraphic provenience is heavily debated. Karavanić (1998) argues that the organic tools, mainly bone points, but also the decorated *baculum*, from layer G1 are of Upper Palaeolithic character, but produced or traded by Neanderthals (Karavanić, 1998). The cave bear penis bone is exceptionally decorated with multiple circumferential scorings (Fig. 8) – a pattern that we only know from Upper Palaeolithic contexts. It obviously provides no traces of use as a tool, but closer study of the object is needed.

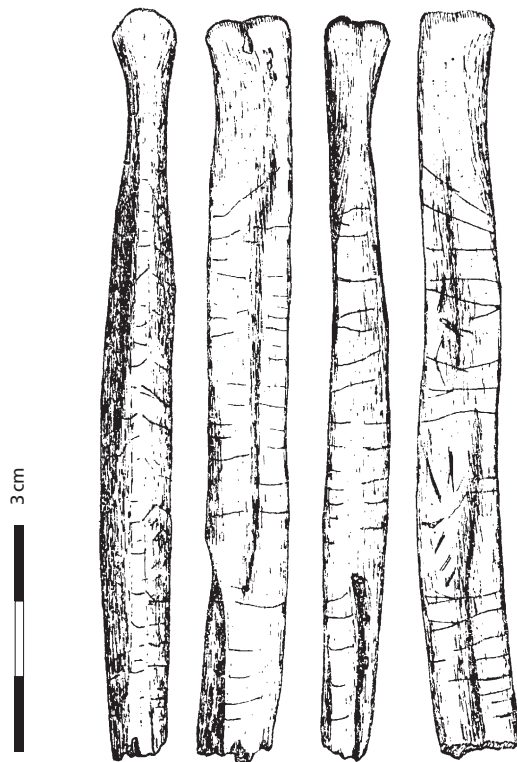


Fig. 8 Vindija cave (Croatia). Carved cave bear (*Ursus spelaeus*) baculum with circumferential scoring from Stratum G1 (Aurignacian I). – (From Malez, 1988).

CONCLUDING REMARKS

Manipulated or decorated ursine penis bones in archaeological context are firstly recognized at Vindija cave. Its potential Middle Palaeolithic age, however, is contradictory (Karavanic, 1998; Malez, 1988) and not securely established. Furthermore, the kind of decoration found on this specimen hints at symbolic communication, which is interpreted as an essential feature of modern human behavior and which is thought to first appear with the Upper Palaeolithic (Dutkiewicz et al., 2018). Other specimens from Upper Palaeolithic contexts display different anthropogenic modifications, like longitudinal striations or cuts, as described from Hohle Fels (Fig. 7), Teufelsküche (Fig. 3) and Bonn-Oberkassel (Fig. 5), which most probably relate to skinning of the penis bone or removal of the periost. In a second step, some of these items were used as tools, most probably as awls, as shown by old-fractures and respectively removed tips (distal end), such as in the case of Brillenhöhle (Fig. 6), Teufelsküche (Fig. 3), and Bonn-Oberkassel (Fig. 5). The intensively polished baculum from Hohle Fels (Fig. 7) is likely linked to leather working. In all these cases, the bacula reflect a *chaîne opératoire* that informs us on technological choices and sequences of production. In Shamanka II several modifications are reported, but unfortunately these are not documented in further detail (Losey et al., 2013). Seemingly, at Shamanka II bacula were used as tools and a gender related association with male graves appears apparent.

Against this context, we would like to return to our initial question: did bacula of the archaeological record serve as sexual symbols or as tools? The use of these bones as awls is evidenced in several cases during the Upper Palaeolithic period, however, the penetrating action by working with awls might also have a wider symbolic, potentially sexual, background. These two aspects might have been combined in the contexts bacula were implemented.

In relation to this another observation might be also worth mentioning: The Gravettian layer AH IIcf of Hohle Fels (the same layer that yielded the polished *baculum*) also contained an elongated pebble shaped and modified by engravings into a phallus and was used as a retoucher (Conard and Kieselbach, 2006). The fact that these items occur for the first time in Gravettian contexts might signal a change in gender roles, at least in the Swabian Jura. The emphasis on females indicated by the oldest Venus figurine in the Aurignacian (Conard, 2009) might have shifted towards male power in the Gravettian. Drawing from ethnographic analogy, we can suggest that penis bones – and probably the Hohle Fels stone retoucher, as well – gave power and strength to the owner.

Losey and colleagues (Losey et al., 2013) emphasize the close relationship between humans and bears, referring to ethnographic sources. Many indigenous societies see bears and humans as belonging to the same family, they may even marry. The perception of ursine *bacula* as a powerful tool seems to be directly connected to the life of hunter-gatherers or nomadic communities. To date no farming society has been documented, in which bear remains and, in particular, bear *bacula* are of considerable interest (Giemsch, 2017).

The burial place of Shamanka II provides obvious similarities concerning the use of *bacula* in present-day indigenous Siberian people, where *bacula* are gender-related and refer to males. Such gender-related background is also possible for the double burial of Bonn-Oberkassel, although it is not clear, whether the *baculum* as a grave good and tool covered with hematite was given to either (or both) the male or the female. One may conclude that the use of bear *bacula* by humans developed from their use as tools towards symbolically charged objects. Most intriguingly this may be expressed through their integration into human burial contexts, as seen at the Late Palaeolithic site of Bonn-Oberkassel, and also in the extraordinary grave goods of the Siberian burial place of Shamanka II. While at Shamanka II the *os penis* was mainly used as a grave good for adult males, indigenous Siberian hunter-gatherer groups tend to see it as a symbol to enhance female fertility. However, it also reflects the fear of impotency in men, which may therefore place the object in a 'complementary' female context.

Nonetheless, it is possible to conclude that the *baculum* is generally seen as a symbol for the strength and power of the bear: by wearing or using it, men and women hope for the transmission of their strength and power to themselves.

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