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Beyond hides and bones – Animals, animal representations and therianthropic figurines in palaeolithic art

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Abstract

This contribution compares different aspects of human/animal relationship: animal bones and teeth as raw material in Palaeolithic art as well as animal representations and therianthropic creatures. It can be noticed that the chosen raw material for the production of animal representations changes chronologically as well as regionally. This choice can be different from one site to the other and seems to depend on the individual choice of a group of people and not only on the availability of certain materials. Animals in Palaeolithic art are not just a sort of catalogue of the hunted fauna. Studies demonstrate that the represented fauna is not identical with the economically most important fauna. Regional differences concerning the representation of selected animal species are not necessarily mirroring regional differences in the composition of the game.

Keywords: Palaeolithic, art, Europe, animal raw material, animal representations.

Introduction

Animals are a central subject in Palaeolithic art. In Palaeolithic art animals are raw material and sculptured object at the same time. This article tries to examine both aspects, the sculptured and engraved animal raw material on the one hand and the represented animal on the other. It will be discussed if the choice of raw material is only a consequence of technical requirements and availability or if other motifs may have existed. The list of painted, engraved and sculptured animals demonstrates that these are not the most requested food source (Conard *et al.* 2015). Apart from animals most important for the supply of food, also carnivores, swans, owls, bugs and hedgehogs are represented. Although all of them could have been either part of the Palaeolithic diet or used for their furs, their remains play a minor role in archaeological inventories. Therefore, we can suppose other aspects in the relation between humans and these species. Hussain and Floss made an interesting approach and tried to investigate the role of humans as part of the animal world. Under this aspect, they analysed the effect of other animals on human

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activities by the example of mammoth and cave lion (Hussain & Floss 2015). According to ethnological experience McNiven argues, that the relationship of humans to their prey was founded on the ontological status of prey as kin. Consequently, hunting of big mammals was usually accompanied by rituals and ceremonies. Hunters tried to establish a dialogue with their prey because it is necessary to establish good relations to the animal, which then allows willingly to be taken (Ingold 1994; McNiven 2010). This ethnologically based idea is an interesting contribution to our interpretation of Palaeolithic art but we will never be able to prove if this was really a premise of Palaeolithic hunt.

Based on selected evidence it will be investigated if patterns of use of animal raw material exist in Palaeolithic art and to what extent the choice of prey effects the choice of animal representations. We have to be aware that our archaeological record is limited to less perishable material often covered by meters of sediment and therefore incomplete in many respects. Interpretations of human behaviour based on this record always remains hypothetic.

Animal parts as raw material

Mammoth – bone and ivory

The role of mammoth hunting has been heavily discussed. Evidence from Aurignacian sites in the Swabian Alb for instance show that in contrast to reindeer and horse bones, mammoth bones show very few traces of meat and marrow use (Niven 2006; Hussain & Floss 2015). These authors suggest that mammoth bones and ivory were collected in the landscape and that humans did not hunt mammoths in the Swabian Alb. As a matter of fact, there are studies pro and contra mammoth hunting for the Aurignacian of this region (Gaudzinsky *et al.* 2005; Niven 2006; Münzel *et al.* 2017). Although mammoth probably was only a minor source of meat in the Aurignacian of this region, ivory was with only one exception used for all animal figurines and adornments. The skills in ivory manufacture were so highly developed, that even flutes were made of ivory. The ivory objects from the Swabian Alb are the oldest ivory products of Early *Homo sapiens* so far (Conard *et al.* 2015).

In the French Aurignacian, ivory was used for the production of ornaments as for instance in the Abri Castanet, where hundreds of pearls were found. In Belgium, ivory was also frequently used for ornaments and points (Vanhaeren & d'Errico 2006; Taborin 2000).

Mammoth remains from the Austrian Aurignacian sites can contribute only little to the discussion whether mammoth remains are the result of hunting or collecting, because there exist only few mammoth remains from archaeological contexts of this period. Further, there are no ivory objects known so far from Aurignacian sites in Austria and Southern Moravia except the ivory objects from the Late Aurignacian site Alberndorf (Lower Austria) (Steguweit & Trnka 2008), which is contemporary to the first Gravettian layer

of Willendorf (Willendorf II/5). Therefore we don't have sufficient archaeological information about the status of mammoths for Aurignacian hunter-gatherers in these regions, although mammoths were part of this landscape. Mammoths obviously were neither in great demand as a source of food, nor do we have evidence that they were part of the symbolic language of the Aurignacian hunter/gatherers there.

During the Gravettian there are changes concerning the use of ivory as raw material for adornments, tools, weapons, human and animal figurines. The Gravettian layers of the Swabian Alb for instance first of all comprise rather uniform drop shaped ivory beads as adornments (Conard 2003). Tools are preferably manufactured from antler or mammoth bones, but there are no animal or human sculptures from these layers (Münzel *et al.* 2017). Unlike in the Aurignacian, mammoth was an important source of nutrition in the caves of the Swabian Alb in the Gravettian. For Scheer mammoth is clearly part of the hunted fauna and probably the reason for the seasonal aggregation of different groups in this region (Scheer 2001).

The Gravettian sites in Austria and Southern Moravia are also rich in mammoth bones. In contrast to the Gravettian in the Swabian Alb, where the use of ivory is rather limited in comparison to the Aurignacian, ivory objects are abundant in the Austrian and Southern Moravian Gravettian. Ivory was used for weapons, tools, adornments and figurines. According to Svoboda, mammoths could supply meat and fat in quantities the small animals could not offer, although, there are high numbers of hunted fox, wolf, hare and reindeer. He therefore suggests, that the Gravettians hunted mammoths (Svoboda *et al.* 2000). At the Gravettian site Krems-Hundssteig (Lower Austria) Fladerer demonstrated, that breakage patterns and the frequency of skeletal elements are comparable to that of reindeer and therefore a further argument for mammoth hunting. Mammoth was essential for the subsistence of people using this place (Fladerer & Salcher-Jedrasiak 2008). According to Fladerer also at Krems Wachtberg (Lower Austria) the subsistence was based on mammoth and the landscape was ideal for hunting small groups of mammoth as it was the case in the hills near Pavlov and the March valley near Stillfried (Fladerer 2001). At the Gravettian site Grub/Kranawetberg (Lower Austria) mammoth was very important. People using the campsite in AH4, the lowest layer, accumulated mammoth bones in a distance of 20–30 m from the campsite. Traces of fire, stone tools, remains of colour and a perforated mollusc as well as cut marks on bones are evidence of the human contribution to this mammoth bone deposit (Bosch 2012). Two molars of the same mammoth jaw – one from the bone accumulation and the other from the campsite – could establish the contemporaneity of the bone accumulation and the campsite (Bosch *et al.* 2012). Big mammoth bone accumulations are a typical feature in several Gravettian sites from Poland to Lower Austria (Svoboda *et al.* 2005). Among the mammoth remains at the campsite of Grub Kranawetberg Fladerer noticed cortical splinters, rib fragments with spiral fractures and transverse stepped breaks as well as cortical flakes (Antl-Weiser & Fladerer 2004). Apart from mammoth bones, ivory is abundant in archaeological horizon 4 of this site. Ivory points, ivory buttons, round ivory bars, a small animal sculpture and 260 beads and pendants of ivory underline the

importance of this material (Antl-Weiser & Bosch 2015). A chain of ivory beads was given to the newborn babies from Krems/Wachtberg (Einwögerer *et al.* 2006). There exist also some painted ivory fragments from Krems-Wachtberg (Händel *et al.* 2009). The Gravettian Layers of Willendorf contained two ivory pendants, several ivory round bars, one of them with an incised pattern, a fragmented figurine (Venus II) and a possibly unfinished figurine (Venus III) (Felgenhauer 1956–1959). The rich ivory industry of the Southern Moravian sites comprises numerous ivory beads and pendants, diadems, decorated objects, animal and human figurines as well as silhouettes of animals made of old ivory.

Ivory adornments from Gravettian graves in Barma Grande (Italy) – nine more or less drop shaped pendants and 4 buttons shaped like a double olive – show that ivory was a requested material even in areas where mammoth was rare (Malerba & Giacobini 2014).

Gravettian sites in Eastern Europe – *e. g.*, Gagarino, Kostenki, Avdeevo (Russia) – contain a great variety of ivory objects: beads and pendants, animal and human figurines. Almost all complete figurines were made of ivory. The findings from Kostenki 1 and Avdeevo illustrate, that figurines made of ivory were differently used than those produced of marl (Gvozdover 1995).

In Magdalenian contexts, ivory becomes clearly less frequent. Most objects are made of antler, bone or stone but as far as female figurines are concerned ivory is still important. At Gönnersdorf and Andernach (Germany) female figurines are normally carved from ivory but there are also examples made from other materials (Street *et al.* 2012). At the Epigravettian site Kammern/Grubgraben (Lower Austria) two carved ivory plates have been found – probably the youngest found in Austria so far (Neugebauer-Maresch *et al.* 2008). There are scattered ivory objects from Magdalenian sites all over Europe like in Spain, where ivory was always rare (Alvarez-Fernandez 2009), or France. Magedalenian sites in Poland also yielded some ivory objects (Benet-Tygel 2009). A fragment of a statuette from Pekarna cave (Czech Republic) is made of ivory (Oliva 2005). This might illustrate that ivory was not just another sort of raw material but occupied the human mind even in regions where mammoths did not dominate the landscape.

In Late Upper Palaeolithic sites in the Ukraine and Russia ivory still predominates at the production of art objects. In Mezine and Eliseevitchi it was used almost exclusively (Abramova 1995). The sites in the area of Kostenki differ clearly in the use of raw material. Apart from ivory, bone and marl is abundant there.

Only a few art objects as for instance a relief of a mammoth from the Aurignacian layer of Vogelherd in the Swabian Alb (Conard *et al.* 2015) were sculptured from mammoth bone. In the Gravettian layers of Willendorf (Lower Austria) a decorated mammoth rib was found (Felgenhauer 1956–1959). At the Gravettian site of Avdeevo (Russia) spatulas with animal heads made of mammoth ribs are frequent. Late Upper Palaeolithic sites in the Ukraine yielded painted Mammoth bones like a painted skull from Mejziritch and painted mammoth bones from Mezine (Abramova 1995). Sculptured mammoth ribs

from Eliseevitchi, decorated bones and a female statuette from the Late Upper Palaeolithic site Kostenki 2 show that in the Russian plain mammoth bones still served as raw material for art objects (ABRAMOVA 1995).

Antler

Antler of reindeer was used for the production of tools throughout the Upper Palaeolithic. However, most of the mobiliary art and adornments made of antler were found in Magdalenian context. Art objects or adornments made from antler are only single finds in Early and Middle Upper Palaeolithic sites, like for instance an imitation of a red deer canine from the Hungarian Aurignacian site Istallöskö (VANHAEREN & D'ERRICO 2006) or a tool made from reindeer antler from the Gravettian layers of the Hohle Fels showing an engraved animal (CONARD *et al.* 2015).

In Magdalenian sites reindeer antler is frequently used for decorated objects like batons or the endings of spear throwers. Most of the artefacts produced from antler are reindeer antler; only a few pieces are from red deer. Apart from two examples on bone the engravings from Kesslerloch (Switzerland) were found on pieces of reindeer antler (BANDI 1977). A decorated baton from the Epigravettian site Kammern/Grubgraben (Lower Austria) is also made from reindeer antler (NEUGEBAUER-MARESCH *et al*. 2008). The abundant use of antler is typical for the Magdalenian sites in Western and Central Europe. In Eastern Europe art objects made of antler are very rare like for instance the bird sculptures from Yudinovo (Russia), the round bars from Kosseoutzy and Klimaoutzy (Moldavia) (ABRAMOVA 1995).

In the Late Palaeolithic of the Ukraine reindeer and red deer antler were manufactured besides of ivory. Molodova V yielded a harpoon made from red deer antler, a musical object from reindeer antler and several other objects of reindeer antler together with ivory artefacts (ABRAMOVA 1995).

Bone

Throughout the Palaeolithic bones of different animals were used for the production of symbolic objects but bone always seem to have played a minor role. Besides mammalian and bird bones also vertebrae of fish were used, *e.g.*, as part of necklaces in French Aurignacian sites like Roc de Combe and Gatzarria (VANHAREN & D'ERRICO 2006). In Magdalenian sites vertebrae of fish are often used as pendants like at the Zigeunerfels in Southern Germany, in the Magdalenian graves of La Madeleine (France) and Barma Grande (Italy) as part of necklaces in combination with red deer canines.

In the early Aurignacian layers of the caves in the Swabian Alb apart from ivory flutes, the remains of four bone flutes – swan and griffon vulture – were unearthed. In Aurignacian and also in Gravettian layers adornments from shortcut tubular bones are especially distributed in the Swabian Alb, Belgium, France and Spain (VANHAREN & D'ERRICO 2006).

Perforated and/or incised bones are present in Aurignacian and Gravettian layers from Southern Moravia and Austria. From Mladeč there are for instance metacarpals from giant deer or elk perforated in the epiphyses (Oliva 2006). Bone fragments with parallel or crossed incisions are known from the Gravettian of Aggsbach as well as from Willendorf (Felgenhauer 1951; Felgenhauer 1956–1959). Similar pieces are documented in Russian Gravettian sites like Kothylevo II or Avdeevo (Abramova 1995). For these pieces, bones of birds, wolves and also bigger animals like reindeer or horse were decorated.

In Magdalenian contexts engraved animals on pieces of bone can be found from France to Lower Austria. In Magdalenian sites bone is frequently used for engravings like at La Vache in France (Wehrberger 1994), the Kesslerloch in Switzerland or the Pekarna cave in the Czech Republic (Müller-Beck & Albrecht 1998). The only example of a Magdalenian engraved bone from Austria was found in the Gudenushöhle (Lower Austria) – the head of a reindeer on the ulna of an eagle with a series of structured incisions (Antl-Weiser 2011). At the Epigravettian site Kammern/Grubgraben (Lower Austria) a flute made of the tibia of a reindeer was part of a rich inventory comprising bone, antler, and a few decorated ivory artefacts (Einwögerer & Käfer 1998).

At the Late Upper Palaeolithic site Eliseevitchi (Russia) a series of bones of arctic fox were decorated (Abramova 1995).

Animal teeth

Fox teeth were perforated and worn as adornments throughout the Upper Palaeolithic of Europe. Teeth of this animal species are most frequently used among all animal teeth. In the Aurignacian perforated fox teeth were spread in Southern Germany, Belgium, France, Spain, Italy and Russia, but they were especially wide spread in France (Vanhaeren & d'Errico 2006). Based on forty Aurignacian sites Taborin mentions that fox canines – the most frequent animal teeth – constitute more than one third of all animal teeth in the French Perigordian, followed by bovine and wolf (Taborin 2000). They are also found in Gravettian layers of the Swabian Alb (Conard 2003), Southern Moravia (Klima 1997) and Austria (Felgenhauer 1956–1959; Händel *et al*. 2009). In Austria fox teeth are also part of Magdalenian (Obermaier & Breuil 1908) and Epigravettian inventories (Neugebauer-Maresch *et al.* 2008). They are equally present in Eastern Europe – Moldavia, Ukraine and Russia – from the Aurignacian to the Late Palaeolithic (Abramova 1995).

Modified wolf teeth are considerably less frequent. They are especially spread in the French Aurignacian but there are also pieces from Belgium and Germany (Vanharen & d'Errico 2006). A few pieces were documented in Gravettian sites from the Swabian Alb (Conard 2003; Conard *et al.* 2015), Southern Moravia (Klima 1997) and Austria (Händel *et al.* 2008). Selected finds are reported from the Gravettian in Russia and the Late Upper Palaeolithic in Russia and the Ukraine (Abramova 1995).

As red deer is an abundant prey in the French and Spanish Aurignacian canines of red deer are frequently used in this area. There are also examples from Belgium, Italy and Croatia (Vanhaeren & d'Errico 2006; Broglio & Gurioli 2004). In the Swabian Alb canines of red deer were found in Aurignacian, Gravettian and Magdalenian layers (Conard 2003; Conard *et al.* 2015). In Magdalenian sites in France (Vanhaeren & d'Errico 2005), Italy, Austria and in Late Upper Palaeolithic sites in Eastern Europe (Abramova 1995) red deer canines are documented. Vanhaeren and d'Errico suggest that red deer canines could have been a marker for eventual social ranking in the Magdalenian of France because of the big number of red deer canines from the burial in Saint Germain la Rivière (District Gironde) despite of a virtual absence of red deer in contemporary sites of this area (Vanhaeren & d'Errico 2005).

There is only a small number of bear canines from Aurignacian contexts in Central Europe, Belgium and France and even fewer examples from Central European Gravettian sites. In the Late Upper Palaeolithic there are some pieces from the Ukraine (Abramova 1995). Teeth from large and medium sized bovids (mainly from bison and ibex) have a certain importance on a rather regional scale and are mainly distributed in the French Aurignacian with one exceptional find in the Wildscheuer in Germany (Vanhaeren & d'Errico 2006). Perforated horse teeth are known from Aurignacian layers in Germany (the Swabian Alb and Hessen), Belgium, France and Southern Moravia. The number however, is very low (Vanhaeren & d'Errico 2006). In the Swabian Alb horse teeth are typical for the Late Aurignacian to the Gravettian (Conard *et al.* 2015). In the Gravettian the frequency is even smaller, there are only single examples from Southern Moravia (Klima 1997) and Austria (Felgenhauer 1956–1959). Modified teeth of reindeer are equally rare like at the Aurignacian site Rois in France (Vanhaeren & d'Errico 2006), in the Aurignacian and the Gravettian from Hohle Fels (Conard *et al.* 2015), the Magdalenian site Gönnersdorf, where complete rows of incisors had been cut in one from the jaw (Bosinski 1975), as well as Andernach and Petersfels (Conard 2003). Modified teeth of reindeer are also known from the Late Upper Palaeolithic of Moldavia (Abramova 1995).

Teeth of some species like lion (French Aurignacian), boar (Aurignacian in Belgium), ibex (Aurignacian of the Swabian Alb, France and Spain), hyena (Aurignacian of France and the Swabian Alb, Vanhaeren & d'Errico 2006), elk (Aurignacian of Southern Moravia), beaver (Aurignacian of Southern Moravia and the Ukraine), and bison (Late Upper Palaeolithic in the Ukraine) are rarely represented. Apart from numerous sites where animal teeth were used as adornments there are also some sites with numerous adornments but without any modified animal tooth. From Aurignacian sites in Austria there are no modified animal teeth so far, which might be due to the predominantly old excavation record. The Gravettian sites in Austria yielded a series of perforated animal teeth despite the old excavation record. At Grub Kranawetberg however, the situation is quite exceptional as there is a huge assemblage of adornments (260 beads and pendants of ivory and 170 pieces and fragments of mollusc shells collected in the outcrops of marine sediments of the region) but not a single modified animal tooth. Nevertheless,

there are unmodified teeth of fox, wolf, horse and reindeer at this site (Antl-Weiser & Bosch 2015). A similar situation can be found in the Gravettian in Russia (Kothylevo II) and the Late Upper Palaeolithic in the Ukraine (Mezine) (Abramova 1995).

Regarding the distribution of modified teeth from different animals, it can be observed that teeth from animal species which were important for food supply are underrepresented. Teeth of smaller carnivores are preferably used, whereas teeth of bear and lion are rather exceptional. Canines of red deer seem to have been a sought after material even in areas and environments where red deer was not part of the fauna. Some forms of ivory beads are said to be imitations of red deer canines.

Representations of Animals

Mobiliary Art

Aurignacian

Representations of animals may provide evidence of the mental concept of early modern humans and their relationship to animals. The Southwest of Germany is outstanding in the production of animal sculptures as for instance from Geissenklösterle, Vogelherd, Hohlenstein-Stadel and Hohle Fels several animal representations made of ivory were discovered. Most frequently, mammoth is represented but also bison, bear, horse, lion and bird. New archaeological research at the Vogelherd cave also detected representations of fish and possibly hedgehog. The hunted fauna from this site is dominated by reindeer and horse, but there are also bovids, red deer, chamois, wild boar and mammoth (Conard *et al.* 2015). Except horse and bovids the hunted fauna is not represented by the animal sculptures. Bear, lion, bird, fish and hedgehog must have had a significance apart from subsistence. Mammoth, which is represented most frequently, was not of vital importance for the subsistence of the people at the Vogelherd. At the Geissenklösterle figurines of mammoth, bison and bear were detected, whereas the most important fauna for the subsistence was mammoth, wild horse, reindeer and roe deer. The situation at the Hohle Fels is slightly different because the hunted fauna – mammoth, wild horse, reindeer, birds, fish and cave bear – is partly represented in figurines – the head of a horse, a water bird and a sculpture half man, half lion – with no other animals. The animal sculptures from the Swabian Alb are the only animal figurines from Aurignacian sites, although for instance adornments carved from ivory are widely spread in Aurignacian sites in France and Belgium.

The important role that mammoth obviously played in the worldviews of Aurignacian hunter gatherers in the Swabian Alb is mirrored by the series of mammoth sculptures and the importance of ivory for the production of figurines of different animals and various adornments found in the caves of this region. A possible explanation for the discrepancy between the role of this animal for the human diet and its role in their worldviews

is given by HUSSAIN and FLOSS by the example of the Samburu, who consider that the Samburu and the elephants belong to the same kind although they inhabit different bodies. Elephants are seen as persons and killing them would seriously endanger the relationship between humans and elephants. They regard ivory ornaments as a protection against curses of elephants, which formerly had been hunted. As the activities of mammoths in the landscape have many positive effects for the human subsistence Hussain and Floss suggest that the Aurignacian record of the Swabian Alb might reflect similar attitudes (HUSSAIN & FLOSS 2015). This illustrates that there might exist different ties between mammoths and humans where our archaeological record is only fragmentary and gives often ambiguous answers. Nevertheless, there are also arguments for mammoth as a hunted animal in the Aurignacian of the Swabian Alb (MÜNZEL *et al.* 2017). Wolf explains the exclusive use of ivory for the manufacture of animal figurines with ivory being the only material suitable for the production of bigger sculptures (WOLF 2015). Regarding the animal sculptures of the Swabian Alb their dimensions are in most cases not too big for antler or mammoth bone. The flutes made of ivory show, that people from the Swabian Alb not always chose the most suitable material. Therefore, it can be supposed that ivory had a special meaning for Palaeolithic hunter/gatherers. In Austria and Southern Moravia animal representations from that time are unknown so far. In Italy possible representations of animals were found among the drawings on pieces of rock from the Aurignacian layers of the Fumane cave (BROGLIO & GURIOLI 2004). The rather stylized painting cannot be attributed to a certain species. It also cannot be excluded that these pieces of rock originally were part of wall paintings. A stone block from the Abri Cellier (France) also shows engraved animals from the Early Upper Palaeolithic (WHITE *et al*. 2017)

Gravettian

Gravettian layers of the Hohle Fels show that mammoth is more frequently hunted than in the Aurignacian but reindeer and wild horse are still important. Ivory was still important for the production of adornments. An engraved animal on the antler of reindeer from Hohle Fels (CONARD *et al.* 2015) is only an outline of an animal, but cannot be clearly identified. This engraving is the only animal representation from the Gravettian at the Swabian Alb.

In contrast to the Swabian Alb the oldest representations of animals in the eastern part of Central Europe are known from the Early Gravettian (Pavlovian). In Southern Moravia, especially at Dolní Věstonice and Pavlov, animal sculptures of fired clay are abundant, but there are also a few ivory figurines. Figurines of bears, lions and horses are most frequent, followed by owls and single representations of mammoth, woolly rhino, wolverine, fox, reindeer and marten. Ceramic figurines are present in Dolní Věstonice I, Pavlov I and Předmost. In Pavlov I figurines of a mammoth and a lion are carved from ivory. Another ivory mammoth was found at Předmost (VERPOORTE 2001). Among the four most frequently represented animals (8 lions, 8 horses, 7 bears and 6 owls) only horses were

important for the subsistence of these people. The number of taphonomically identified animals is dominated by mammoth (35 individuals), reindeer (38), horse (33), hare (56), polar fox (42), red fox (7), wolverine (4), birds (2), lion (1), bear (1), rhino (1) (Musil 1997). Three out of four animal species sculptured most frequently are either not among the hunted fauna or only with one individual. Interestingly horse is the only animal, which is as well part of the favoured game as frequently represented among the art objects.

Horse, lion and bear were already represented in the art of the Swabian Aurignacian; the role of mammoth however is – compared to the Aurignacian of the Swabian Alb – less prominent in the Early Gravettian Art of Southern Moravia. Mammoth representations are not as frequent and ivory as raw material for animal figurines is not so important.

In four out of seven areas with animal representations lion is associated with horse and in two cases enlarged with owls and bears. The biggest variety of animal figurines is documented in Dolní Věstonice I, Northwest with 4 horses, 3 owls, 2 lions, a mammoth, a bear, a wolverine, a woolly rhino and a marten. Near the famous Venus I from Dolní Věstonice a bear, an owl and the head of a reindeer was found. Almost all representations are fragmented and were found near a hearth. According to Verpoorte (Verpoorte 2001) they supposedly have not been produced to be kept by their producers over a period of time. They had been sculptured and put at the hearth still wet and therefore they cracked when heated, possibly as part of a ritual act.

In Lower Austria a few ceramic objects were found near hearth 1 at Krems-Wachtberg. An amorphous object shows papillary lines of human fingerprints and the impression of a fingernail. The other one is a part of an animal body, either horse or cervid or the head of a horned animal possibly a saiga (Haendel *et al.* 2009). Josef Bayer had already excavated two other animal figurines but they have not been identified as animal representations at first sight (Einwögerer 2000). An unidentifiable representation of an animal made of ivory was found at the Kranawetberg in Grub (Antl-Weiser & Bosch 2015). There are no animal representations from the younger Gravettian (Willendorf-Kostenkian) in Austria and Southern Moravia.

In Eastern Europe Avdeevo, Gagarino, and Kostenki I, 4 and 11 are the most prominent sites of the Willendorf-Kostenkian with a big number of animal figurines made of ivory, marl and also of fired clay (Abramova 1995), which is in contrast to the situation in Central Europe. The finding of a mammoth sculpture beneath the shoulder blade of a human skeleton at Sungir (Russia) (Kölbl 2003) illustrates the importance of mammoth and its symbolic significance for Palaeolithic hunter/gatherers. Among thousands of ivory beads and other ivory grave goods from the burials at Sungir also a horse pendant with a series of points in line was found (Floss 2003). The inventory of Avdeevo (Russia) contains an assemblage of ivory points with animal heads in different styles – triangular with ears or more naturalistically formed animal heads. The artists from Avdeevo took bone, probably from mammoth, and sandstone for the mammoth sculptures (Gvozdover 1995). The horse from Avdeevo was made of ivory. The raw material of the lion head from Kostenki I is limestone (Abramova 1995).

Comparing Aurignacian and Gravettian complexes it can be observed that Gravettian sites without animal sculptures follow the Aurignacian sites of the Swabian Alb containing a big variety of animal representations. In the eastern parts of Central Europe it is most likely vice versa. Pavlovian sites with numerous fragments of animal figurines in fired clay and ivory follow the Aurignacian sites without animal sculptures.

From the Early Aurignacian in Western Central Europe to the late Gravettian in Eastern Europe the way of production, the choice of material and the style of animal representations changed remarkably. The example of the reconstruction of the lion man from Hohlenstein-Stadel demonstrated that producing ivory sculptures is a rather hard enduring work (HEIN & WEHRBERGER 2010). Ivory objects obviously seem to have been produced to last for a longer period, which implies that the finished sculptures had some sort of lasting function for their producers either as individuals or as a group of people. In contrast to that most of the Pavlovian animal figurines were not produced to be kept at all. Their function seems to have ended with their placing at the hearth. The Pavlovian ivory figurines are often silhouettes of animals. In the Willendorf-Kostenkian sites of Eastern Europe animals made of ivory represent mammoth, horse, birds and possibly bison. Animals and animal heads of sandstone, marl or fired clay show mainly mammoths or bears.

The most prominent animals in Aurignacian as well as in Gravettian mobiliary art are mammoth, horse, bear and birds, followed by lion and bison. We do not know if and to what extent the symbolic content of these animals changed in the course of almost 20.000 years, or if the rituals connected with these figurines changed. Producing an ivory figurine required special knowledge and big investment of time. The ivory figurines could be used in rituals repeatedly, although we do not know if they really were. As far as the ceramic figurines from Pavlovian sites are concerned, the production itself seems to have been the ritual act. The still wet clay figurine was put to or into the fire and thus transformed into a new, artificial material. The remaining animal fragments seem to have been of no further importance after this transformation.

Magdalenian

Magdalenian animal representations differ from earlier portrayals in the choice of raw material, the choice of technique as well as the choice of animal species. New materials like slate, jet and amber are used apart from antler and bone. Ivory is rare, but female figurines are often produced of this material. “Animal shaped endings” of spear throwers are usually sculptured of antler and sometimes also of ivory. Engravings are now a widely used technique for representing animals. As far as the represented animal species are concerned mammoth is no longer important for subsistence, but is still used for art objects and is also portrayed even in areas, where mammoth was never or no longer economically important. The preferred game are reindeer and wild horse, but horse is preferably depicted. Although reindeer was economically equally important as horse since the beginning of Upper Palaeolithic, horses seem to have inspired people in a particular way.

Magdalenian animal pictures are frequently engraved on plates of slate like the rich assemblage from Gönnersdorf in the Rhineland-Palatinate. From this site not only a huge corpus of animal pictures is known but also a big variety of depicted species: four horses, one of them in combination with two birds, two pieces with mammoths and single representations of aurochs, saiga, rhino, seal, ptarmigan and raven (Bosinski & Fischer 1980; Müller-Beck & Albrecht 1998). In German Magdalenian sites numerous horse engravings are recorded. Horses are engraved on slate, antler, stone, amber and bone. A bot fly nymph and a beetle sculptured of jet from the German Magdalenian are among the rarely depicted animals. Ibex is known from the Rislisberghöhle (in the swiss canton Solothurn), fish from Petersfels and a birds head from Andernach, both Germany. Most of the Czech animal representations are documented at the Pekarna cave like bison, horse, ibex and bear. (Müller-Beck & Albrecht 1998).

In Austria the head of a reindeer was engraved on an ulna of a sea eagle (Antl-Weiser 2011). From the Late Palaeolithic in Austria we should mention the engraving on a piece of antler from the Zigeunerhöhle near Graz (Styria) interpreted as a rapidly moving snake (Antl-Weiser 1993).

The engraved lion from Gönnersdorf is one of the rare lion representations of the Magdalenian in Central Europe (Bosinski & Fischer 1980). The French and Italian Magdalenian yielded a series of lions engraved in bone or as a relief on limestone (Wehrberger 1994). A mammoth from Bruniquel on the ending of spear thrower was sculptured from antler. The swimming reindeers from this place on the contrary were sculptured from ivory. Regarding the spear thrower endings of a jumping horse from Bruniquel and the fighting ibex from Les Trois Frères (Leroi-Gourhan 1971) the Bruniquel mammoth shows convergent legs like a dead animal. At the Duruthy rockshelter (France) sculptured horses of sandstone, marl limestone and ivory were found together with horse mandibles (Birouste *et al.* 2016). The authors suggest to interpret this find with animistic practices. Ibex is mainly represented in a series of Magdalenian sites in the French and Spanish Pyrenees as silhouette, on slabs of stone or as decorated bar (Castelli 2010). The animals from Kesslerloch (Switzerland) comprise engraved horses and grazing reindeers on the antler of a reindeer. The head of a musk ox from this site was sculptured from reindeer antler (Bandi 1977).

An evidence that mammoth still occupied the human mind, even in areas where mammoth was probably not part of the landscape anymore, is an engraving on a slab of stone from the Magdalenian site Las Caldas in Asturia (Bahn 1999; Alvarez-Fernández 2002). There are no animal representations from Late Upper Palaeolithic Eastern Europe and Siberia (Abramova 1995).

Therianthropic figurines

Creatures combining human and animal characteristics are a typical phenomenon for the Early Upper Palaeolithic of Germany and Italy as well as for the Middle to Late Upper Palaeolithic of France. These characteristics can be observed at the lion man from the

Hohlenstein-Stadel, the small lion man from Hohle Fels and an anthropomorphic figurine from Vogelherd. Even the relief from Geissenklösterle may combine human and animal characteristics.

The combination of man and lion documented at the Hohlenstein-Stadel and Hohle Fels (Swabian Alb) reflects not only the observation of animals by early modern humans but also the identification with parts of their character. Deep thoughts about the character of an animal are a precondition for this sort of representation, which is not the result of an observation from outside but of an effort to imagine animal sense and character. At the same time, it shows the ability of early modern humans to search after human characteristics in animals comparing it with animal characteristics inside themselves. HUSSAIN and FLOSS argue, that lions may have been regarded by Palaeolithic people rather as a fellow hunter than just as an animal and the special relationship being a consequence of competition between humans and lions (HUSSAIN & FLOSS 2015). The arms of the so called lion man from Hohlenstein-Stadel are parallel to the body with an angle between upper arm and forearm, which produces the allusion of vigilance. There are also a series of parallel incisions on the upper arm of the lion man from Hohlenstein-Stadel similar to the signs on the upper arms of the figurine from Hohle Fels (CONARD *et al.* 2015).

A painting from the Aurignacian layer of the Fumane cave (Italy) represents a human being with a horned head. The anthropomorphic figurine is painted in red ochre on a fragment of dolomitized oolithic limestone. Below the neck of the figurine there are stretched out hands, the right one holding something hanging down. The body widens at the hips and the legs are bow shaped. The painting is interpreted as witch doctor or shaman. BROGLIO and GURIOLI compare it with felines from Vogelherd, engravings of the Dordogne shelters and the Chauvet cave (BROGLIO & GURIOLI 2004).

Apart from human-lion combinations there are also combinations of a female body with the head of a horned animal. A bar from red deer antler from Magdalenian context in Las Caldas near Oviedo in Asturia shows a female body with hooves and a horned animal head (HAHN 1994). Another example of this combination is painted on the walls of the Chauvet cave. A mammoth – known as the young mammoth – from the grand panel from the Chauvet cave was also discussed to show anthropomorphic characteristics because of the round endings of its legs. Bahn however interprets these endings as painted animal tracks (BAHN 1999).

The most famous examples of human-animal representations are known from Franco-Cantabrian cave art. The French cave of Les Trois Frères comprises two of these representations. One of them – the well known sorcerer, also named "the horned god" – is a combination of painting and engraving. The depicted being is painted dancing or springing with stretched out hands. The second representation is a creature with the head of a bison and also dancing with stretched out hands. A similar painting was found in Le Gabillou. Hahn mentions another example from Le Fontanet showing a human-animal being, which cannot be determined more closely (HAHN 1994). Leroi-Gourhan reports

at least 15 sites with therianthropic beings. All of them of them are a combination of a human lower part of the body whereas the upper part and the head resembles an animal (Leroi-Gourhan 1971). According to Hahn these creatures are interpreted as shamans or sorcerers being often placed in a marginal position of the area with paintings. Although they are in general attributed to the Magdalenian their chronological classification is uncertain (Hahn 1994).

Cave art

Hands on cave walls, therianthropic creatures, animals from insects to mammoth and mysterious signs are the most impressive representatives of Palaeolithic art. The central theme of cave art are animals painted in different techniques, engraved or even sculptured from the loam of the cave. They give evidence of very accurate observations by the Palaeolithic artists. In the flickering light of the lamps also the wall itself becomes an important agent by its cavities and bumps in order to place the right animal to the most adequate place. Did the artist look for the right place to portray the animal he imagined or did he/she recognize a distinct animal through the play of light and shade given by the wall of the cave?

For the supposed symbolic character of the act of painting it makes a difference whether the cave was entered to "find" an animal or just to look for the ideal position. It would also make a difference if painting an animal *etc.* was only part of a symbolic act like painting animals and signs seen in trance or as a part of rituals. The therianthropic beings are often interpreted as a certain stage in trance (Clottes 1997). Another question concerns the choice of the represented animals. While early research explained the cave paintings by hunting magic, the discrepancy between the hunted fauna and the representations contradicts this opinion (Hahn 1986; Clottes 2000). Djindjian however explains part of this discrepancy between the hunted and the presented fauna by a local and a distant knowledge of animals. A mixture of animals from different climatic zones may exist according to the seasonal mobility of people (Djindjian 2004). Nevertheless, this does not explain the relatively big number of lions, bears and woolly rhinos, which certainly did not belong to the most frequently hunted animals. On the other hand, these species could well be among the most prestigious prey.

A main problem in the interpretation of cave paintings is a chronological one. It would be a very ambitious approach to date all representations on cave walls, on the other hand without a chronological framework we will not even know, which representations are contemporaneous. Consequently, we do not know which representations are parts of the same symbolic context. As demonstrated by the new findings in the Grotte Chauvet and some Cantabrian caves it seems clear that the stylistic system of Leroi Gourhan (Leroi-Gourhan 1971) has to be revised by absolute data or revised by a new stylistic approach based on these new data. On the other hand, the data from Grotte Chauvet, respectively their relevance for the age of the paintings, is still being discussed (Pettitt & Bahn 2014).

As far as the represented animals are concerned horses and bovids are most frequent but the mixture of species varies from one cave to the other. Lions for instance are not so frequent compared to other species – but they are more common in Chauvet, Lascaux and Trois Frères. A lion from Trois Frères looks as if it was just turning around with attentive eyes (WEHRBERGER 1994). Mammoth is not prevalent as well, but in the cave of Rouffignac mammoth dominates with158 images followed by 28 bisons, 16 horses, 12 ibex, 11 rhinos and a bear (PLASSARD 1999). After a count of LEROI-GOURHAN mammoth ranges at the third place after bison, but with only a third of the images attributed to horse (LEROI-GOURHAN 1971). This count might have changed with the paintings from Grotte Chauvet, which was detected in 1994. Mammoth is represented in numerous paintings there. The most impressive among them is a mammoth in the middle of the grand panel between lions and rhino with an almost anthropomorphic posture, an aspect, which was already mentioned above (BAHN 1999). It also reminds us to the relation between humans and elephants addressed by Hussain and Floss (HUSSAIN & FLOSS 2015).

Looking for the images of cervides we find red deer dominating in comparison to reindeer. Pictures of bear, lion and rhino range far behind. As previously mentioned these animal pictures are not evenly spread. Mammoth is only at the third place because of the concentration of Rouffignac. LEROI-GOURHAN demonstrates regional differences concerning the preference of certain animal species (LEROI-GOURHAN 1971). If we compare the figures for horse and reindeer/red deer – all of them economically important – we realise, that horse must have been preferred for other, probably symbolic reasons. This dominance of horse is not only typical for the Franco-Cantabrian cave art, but also for the Magdalenian mobiliary art in Central Europe.

Viewing at the way of presentation, we can see rather immobile animals from the side, but also animals approaching the spectator like the lion from Les Trois Frères. Some animals look just killed like the bison from Lascaux. In the Chauvet cave there is another stylistic effect: rhinos closely one after the other and many rhino horns in a rather narrow sequence, which was interpreted as the image of a stampede – a sort of Palaeolithic motion pictures. They observed the same principle at horse representations on a slab from La Marche (France), where there is horse in the centre and the head as well as the legs are multiplied (AZÉMA & RIVÈRE 2012).

Conclusions

Regarding the animal representations as a whole we notice that Upper Palaeolithic hunter/gatherers portrayed animals in a very realistic way. They chose species, which had beyond their economical value a deeper meaning for them. The choice of animal species differs regionally as well as chronologically, although some animals like for instance horse and mammoth had a supra regional importance throughout the Upper Palaeolithic. In some cases the used raw materials seem to have had an extra value. May be that it was rare, prestigious or having a symbolic meaning. Antler, bone and stone were replacing ivory, which was predominant in the Early and Middle Upper Palaeolithic,

more and more during the Magdalenian but obviously without losing its fascination even in areas, where mammoths were rare or absent. In Eastern Europe mammoth and ivory remains dominant until the end of the Upper Palaeolithic.

Observations concerning shamanistic or animistic practices are often mentioned together with animal representations and therianthropic creatures, but it might be dangerous to conclude that the same thoughts were behind similar appearances. We can be rather sure that people reflected on the abilities and qualities of animals and compared some of these qualities with their own. It could also be that myths and legends influenced the preference of certain animals.

As far as cave art is concerned, the main difficulty for an interpretation is the lack of a secure chronological setting of many representations. This inhibits conclusions concerning the layout of the paintings in a cave, or the intentional arrangement of scenes. It also makes it impossible to trace the development of different styles.

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