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Contributions should be addressed to:

P@LETHNOLOGY REVIEW
Vanessa LEA, Research associates

CNRS / UMR 5608 – TRACES
Maison de la recherche
5 allées Antonio Machado
31058 Toulouse cedex 9, FRANCE

Phone: +33 (0)5 61 50 36 98
Fax: +33 (0)5 61 50 49 59
Email: vanessa.lea@univ-tlse2.fr

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PERSONAL ORNAMENTS OF THE SWABIAN AURIGNACIAN

Sibylle WOLF, Nicholas J. CONARD

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Aurignacian Genius: Art, Technology and Society of the First Modern Humans in Europe
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PERSONAL ORNAMENTS OF THE SWABIAN AURIGNACIAN

Sibylle WOLF, Nicholas J. CONARD

Abstract

In the caves of the Swabian Jura (Southwest Germany) excavators found numerous mammoth ivory remains, which date to the Aurignacian. Among them were at least 600 beads. These beads come from the well stratified layers of Hohle Fels cave in the Ach Valley, while others derive from the backdirt in front of the Vogelherd cave in the Lone Valley, which was completely emptied during the excavation 1931. We give an overview about the variety of forms of the personal ornaments, although the double perforated bead dominates the inventories. This special bead form gives evidence of identity formation of the Aurignacian people.

Keywords

Swabian Aurignacian, mammoth ivory, bead, personal ornaments.

Introduction

The Swabian Jura in Southwest Germany is famous for its numerous cave sites, which yielded Aurignacian deposits (e.g. Conard, Bolus, 2003). The sites Hohle Fels and Geißenklösterle in the Ach Valley between Schelklingen and Blaubeuren as well as Vogelherd and Hohlenstein-Stadel in the Lone Valley near the towns Niederstotzingen and Asselfingen are of special interest (figure 1). These sites delivered extraordinary mammoth ivory assemblages (Wolf, 2015). The paleolithic people who frequented the Swabian cave sites used ivory to fabricate tools, figurines, musical

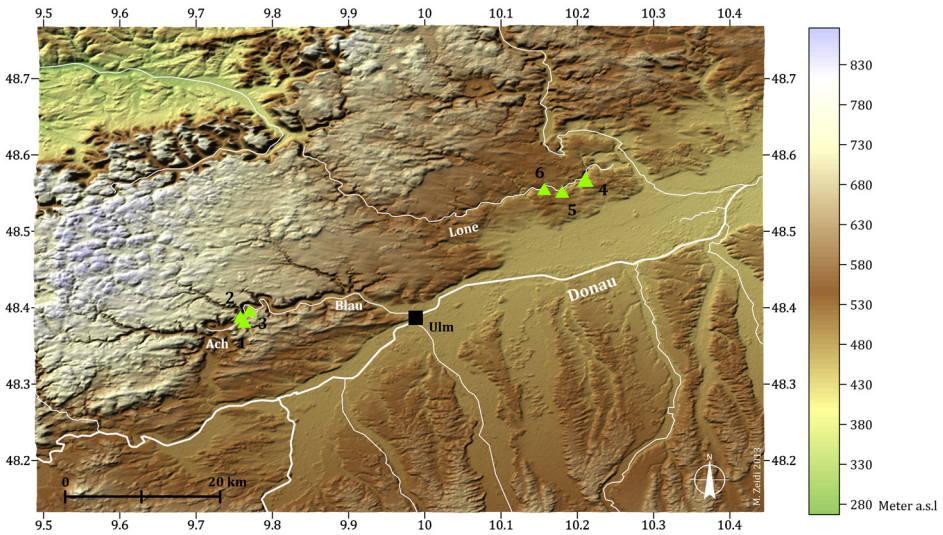

Figure 1 - Map of caves with Aurignacian deposits of the eastern Swabian Jura (Southwest Germany). 1: Hohle Fels, 2: Sirgenstein, 3: Geißenklösterle, 4: Vogelherd, 5: Hohlenstein, 6: Bockstein (CAD: M. Zeidi).

instruments and personal ornaments (Schmidt, 1912; Riek, 1934; Hahn, 1986, 1988; Conard, 2003, 2009; Wolf, 2015). The current state of research indicates that these archeological remains were made by the anatomically modern humans (e.g. Conard *et al.*, 2006). The inventories of all of these sites are outstanding and unrivaled so far. Aurignacian figurative art made of ivory is unique in the caves of the Swabian Jura (e.g. Floss, 2007). Concerning personal ornaments, the double perforated ivory beads are typical. That is why the Swabian Aurignacian has its own character, which is not directly comparable with other European regions (Conard, Bolus, 2003; Conard *et al.*, 2006; Wolf, 2015). The aim of this article is to give a general overview about the ivory assemblages particularly of Hohle Fels cave as well as Vogelherd cave with the focus on the personal ornaments and the types of the different Swabian bead forms.

1 - Research History

Oscar Fraas first excavated the Hohle Fels 1870/1871. Field work is still going on in yearly campaigns under the direction of Nicholas Conard, University of Tübingen (Conard, 2002; e.g. Conard, Malina, 2012). The Aurignacian levels IId to Vb date back to 36 000 years BP uncalibrated (Conard, Bolus, 2008; Conard, 2009). Until today the excavators recovered more than 10 000 ivory remains in these layers (Wolf, 2015). Among the numerous waste of daily life, the most famous find is a female figurine which was excavated in 2008 (Conard, 2009).

Joachim Hahn mainly conducted the excavations in the Geißenklösterle cave (Hahn, 1988). The Aurignacian layers are II and III. The dates of the latter are with the oldest data for an Aurignacian so far with an age of at least 38 000 years BP uncalibrated (Higham *et al.*, 2012; Nigst *et al.*, 2014). Here the most elaborated find was a flute made of ivory (Conard *et al.*, 2004) among four figurines (Hahn, 1986). Hahn found several personal ornaments made of mammoth ivory and animal teeth (Hahn, 1988; Conard, 2003; Wolf, 2015). Robert R. Schmidt excavated Sirgenstein cave (Schmidt, 1912). Here, he describes one damaged double perforated bead, which probably derives from the Aurignacian layer IV; it was found during sorting the soil samples and not *in situ* (Schmidt, 1912: 27).

Gustav Riek led the excavations in Vogelherd cave (Riek, 1934). In 1931, within three months, he and his crew emptied the whole cave with an area of 125 sq.m² and sediments up to five meter high. They put the backdirt in front of the two entrances of the cave. The main layers were the Aurignacian levels IV and V, with dates between 31 000 and 36 000 years BP uncalibrated (Conard, Bolus, 2003). Vogelherd became world famous because of eleven figurines, which mainly depict Ice Age animals; Riek discovered them in both Aurignacian layers (Riek, 1934). Between 2005 and 2012 excavation teams of the University of Tübingen re-excavated the backdirt in order to recover all the small finds, that Riek had overlooked (e.g. Conard, Malina, 2006). This led to the discoveries of additional ivory figurines. The most known is the perfectly carved mammoth excavated in 2006 (Conard *et al.*, 2007). Riek found no ivory beads during his excavation, but so far more than 300 small beads have been recovered (Wolf, 2015) due to the careful methods used in the re-excavation. All of these pieces could only be determined in having an Aurignacian age by studying them in tandem with the finds from the Ach Valley caves. The latter come from secured stratigraphies.

Oscar Fraas examined the Hohlenstein complex in the 1860s, while Robert Wetzel led excavations there in the 1930s and between 1956 and 1961 (Wetzel, 1961; Beck, 1999). In 1939 the workers discovered many worked ivory fragments, which were later refitted to a hybrid, the famous lion-man. This figurine is the tallest Ice Age statuette known so far (Schmid 1989). Together with the fragments of the figurine, two ivory beads and six fox teeth pendants were discovered (Reinhardt, Wehrberger 2005). Between 2009 and 2013 Claus-Joachim Kind of the State Office for cultural heritage led excavations in the Stadel cave (Beutelspacher, Kind, 2012; Kind *et al.*, 2014).

The current date of the Aurignacian layer is 35 000 years BP uncalibrated (Kind, Beutelspacher, 2010). Kind found the original location of the lion-man and he recovered hundreds of new ivory fragments, which belonged to this special figurine as well as additional personal ornaments. In 2012/2013 restorers reconstructed the lion-man using these new fragments as well as fragments which could not be refitted during the first professional restoration in 1988 (Wehrberger, 2013). Many new observations were made, that are presented below.

2 - Material, Technology and Production sequence

In the sites of the Swabian Aurignacian only wooly mammoth was identified when analyzing the proboscidean remains (Münzel, Conard, 2004; Niven, 2006). The ivory inventories are homogenous in color and appearance and there are no indications for the usage of e.g. ivory of the forest elephant (Hiller, 2002; Wolf, 2015). For the Swabian Aurignacian the evidence indicates the systematic collection of tusks of perished animals in the open steppe, instead of active hunting of adult mammoths (Niven, 2006; Wolf, 2015). Tusks are composed of a pulp cavity with dentine in the inner and a sheathing cementum (e.g. White, 1995; Wolf, 2015). We are interested in the life history of the artifacts made of mammoth ivory. The whole production sequence from the acquiring of the material to the discarding was explained several times (e.g. Semenov, 1957; White, 1995; Christensen, 1999; Liolios, 1999; Khlopachev, 2006; Khlopachev, Girya 2010; Wolf, 2015). After the initial break-down of ivory, people extracted long and slender rods as raw forms for the further working. The manufacturers chopped, scraped, ground, and smoothed these unfinished objects until they reached the intended size and shape. In this context it is important to define the term bead and the different stages of bead production. A bead or a pendant is a small object, which people could apply to a substratum (e.g. clothes, bags, accessories etc.). The bead possesses a suspension – this could be an eyelet or a grooving. People also could have worn these pieces as a necklace for example. There is no absolute need to sew a bead on a substratum; it could also be used separately and in different varieties of patterns.

A differentiation of six different stages of bead- and pendant production took place (figure 2):
- raw form: a discernible base form for a special object is recognizable;
- half product: the special form is nearly complete;
- finished product: the special object is finalized, but it does not show traces of usage;
- used product: the special form is finalized and it shows clear traces of usage;
- damaged product: the half,- or finished,- or used product is damaged and broken;
- recycled product: the broken or unintentional product was fashioned for a different usage.

3 - Hohle Fels

Hohle Fels excavation teams recovered more than 10 000 ivory pieces in the Aurignacian layers IId to Vb so far (Wolf, 2015). Most of the pieces derive from layer IV, which is the thickest Aurignacian archeological horizon (AH) beside AH Va. The ivory finds range from thick smashed pieces to hundreds of small splinters and shavings. The splinters are the result of the intensive scraping and ivory working inside the cave. In all excavated square meters the excavators found ivory artifacts. The numerous rods are the raw forms for many other finalized forms like points. This form also proofs the ivory-working at the site. Typical are flakes, which are the results of controlled knapping (Heckel, Wolf, 2014). Often they were also used as tools e.g. as wedges.

Figure 2 - Examples of the production sequences of typical Swabian Aurignacian double perforated beads; from rods to broken beads (photos: S. Wolf; montage: G. Häussler).

The Aurignacian people also fabricated massive chisels and percussors of ivory debris. Furthermore, points with solid bases have been found in all layers, except the oldest layer Vb. One broken raw form for a flute is known and many pieces show traces of aesthetic expressions, like cross patterns or personal markings. Altogether the team found 217 beads so far (figure 3). The pieces vary in size and shape, but the double perforated bead dominates the assemblage with 124 pieces: 18 raw forms, 13 half products, 22 finished products, 46 used products and 25 damaged pieces were excavated. The overwhelming majority of double perforated beads (98 pieces) derive from the layers IV and Va. The average length of complete pieces is 7.4 mm, the average width is 4.5 mm and the average thickness is 3.6 mm. Other types are the single perforated bead, the double perforated bead with wedge-shaped appendix, the non-perforated, constricted bead, the Swabian basket-shaped bead, the ring-shaped bead, the eight-shaped bead and the discoid bead. Some unique forms exist, which find no similar pieces in other Aurignacian regions. Bands are another interesting type of adornment made of ivory. These objects could have been sewn on clothes or they could have been worn in different ways (Didon, 1911; Peyrony, 1927, 1935; Castets, 2008). Such pieces come from the layers IIIb and Va. We also see trends in the manufacturing and use of the beads: during the younger Aurignacian phase (layers IId-IIIb) the people preferred the basket-shaped bead and the non-perforated, constricted bead, which are not known in the older horizons.

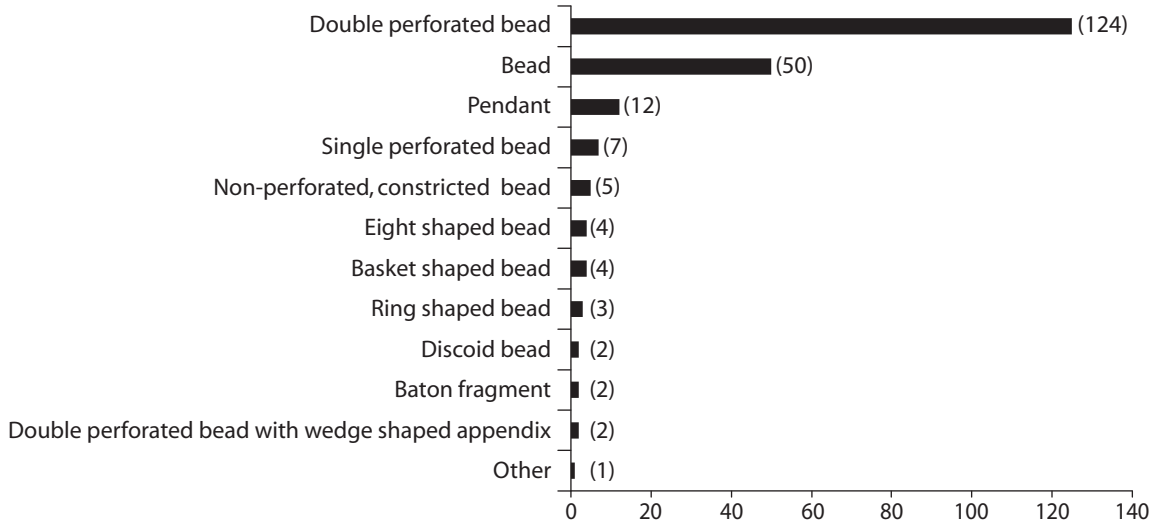

Figure 3 - Hohle Fels cave different types of Aurignacian personal ornaments and the number of these items (diagram: S. Wolf).

4 - Vogelherd

During the excavations 1931 the workers found the big ivory pieces (figure 4). At the southern entrance of the cave the team discovered segmented ivory tusks. These pieces had a length of 50 cm each (Riek, 1934). In addition, the excavators found many ivory plaques placed on top of each other there. In the southwestern entrance a bone pile was discovered and here also the excavators found large tusk-fragments. Riek describes a working area for ivory in the southwestern entrance; he recognized ivory dust on one stone and interpreted this as a proof of grinding this material (Riek, 1934). Interestingly a few pieces were found, which Riek called “ambos”. This could be supported by recent analysis which declares them as anvils, retouchers and underlays for daily work (Wolf, 2015). Most of the large pieces are naturally broken tusk pieces and they are not smashed pieces or flakes. Some of them were used as tools like smoothers, but not intensively.

Figure 4 - Vogelherd cave, mammoth tusks during the excavation 1931 (photo: Ulmer Museum).

The most famous finds are eleven, small figurines. Ten are made of ivory. Each piece is designed individually. They mostly depict Ice Age animals, but one anthropomorphic figurine exists, too (Riek, 1934; Floss, 2007). Remarkably, some of the figurines possess a double function, because they also served as pendants (see in detail e.g. Hahn, 1986; Floss, 2007). The nearly complete mammoth possesses perforations between its forelegs and its hind legs (figure 5). In addition the oval bone piece, which shows a mammoth relief, displays a broken perforation at one end. This is the proof that this find formerly was a pendant, too. This reflects the mobile character of these pieces: they are "mobile objects in a mobile society" (Floss, 2007: 308).

Riek did no water screening and sorting during his excavation. That is why he did not find any splinters, which would indicate ivory working on site. Furthermore he did not discover any beads made of ivory. As adornment he mentions only one pierced cervid canine, which was decorated by notches and one pierced brown bear canine. One ivory object, which is drawn-in at the top, could be interpreted as jewelry (Riek, 1934; Wolf *et al.*, 2013).

Figure 5 - Vogelherd cave, mammoth figurine - and pendant.
Length: 5 cm (photo: H. Jensen, copyright University of Tübingen).

During the excavations of the backdirt and the sorting between 2005 and 2012, 345 beads in all stages of production have been found and are analyzed so far (figure 6). At present, about two thirds of the water screened sediments from the excavations have been sorted, so future work at Vogelherd will produce additional finds. Most of the beads have forms also known in the caves of the Ach Valley. That is why we are sure to date them to the Aurignacian. There are 219 double perforated beads and four double perforated beads with wedge-shaped appendix, 43 beads,

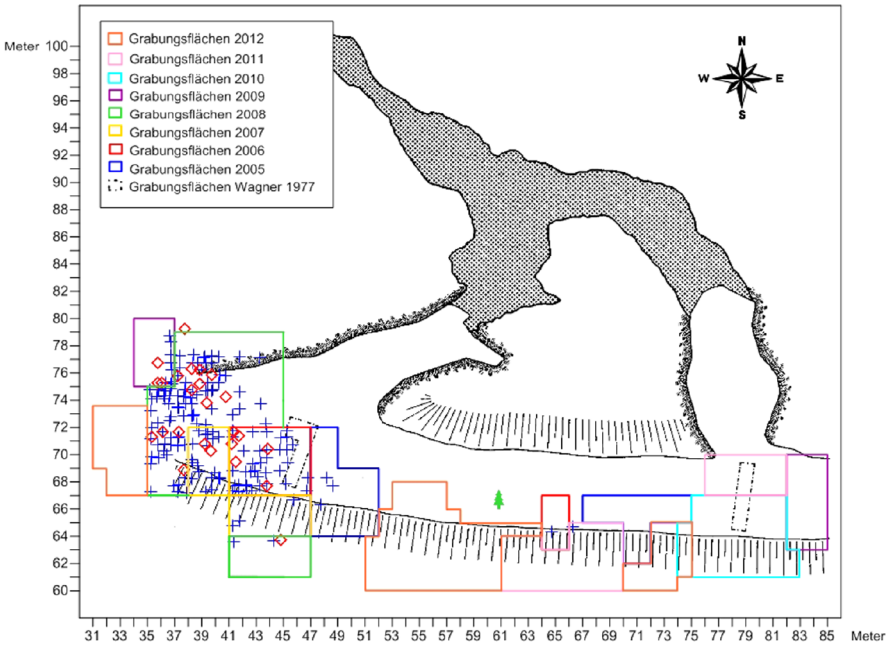

Figure 6 - Vogelherd cave, plot of all double perforated (blue) and single perforated (red) beads in the backdirt in front of the southwestern entrance.

35 pendants, 34 single perforated beads, four Swabian basket-shaped beads, two complete cone-shaped beads, a broken eight-shaped bead, a fragment of a non-perforated, constricted bead, and three pieces which clearly belong to jewelry, but their exact allocation cannot be resolved. The double-perforated beads are divided into 23 raw forms, three half products, 16 finished products, 73 used products and 104 damaged pieces. The average length of all the complete pieces is 8.7 mm, the width is 5.5 mm and the thickness is 3.6 mm. All these beads are double perforated beads, and each piece shows individual characteristics.

The narrowest width of the double perforated bead is 3.5 mm. The width of this bead type could be up to 11 mm. About 80% of the 364 rod fragments (293) are classified in the area between 3.5 mm and 11 mm width. The conclusion is that the rod fragments were the main raw form for the serial production of beads. Additionally, excavators recovered 37 decorated pieces. They mainly show cross patterns and they often belonged to rods. Some are fragments of figurative art. E. Dutkiewicz currently examines these decorations in her Ph.D. project at the University of Tübingen.

The beads from Vogelherd come exclusively from the backdirt in front of the southwestern entrance of the cave. The sediments were dumped near the respective excavation area during the excavation in 1931. Therefore, we suggest that Aurignacian people sat and worked in the south-western entrance of the cave while the ivory stock was stored in the area of the southern entrance. The pieces in all stages of the manufacturing processes show that these objects were produced locally at the site. The large amount of other finds speaks for an intensive use of the cave. The jewelry items ended up together with the other objects in the everyday waste.

5 - Hohlenstein-Stadel

Recently the lion-man was restored in the State Office for cultural heritage in Esslingen. Currently more than two thirds of the figurine are preserved, because the restoration team added more than 60 new pieces. After the restoration the lion-man changed his appearance (figure 7).

Figure 7 - Hohlenstein-Stadel cave, right view of the lion-man after the restoration 2013. Length: 31,1 cm (photo: Y. Mühleis, State Office for cultural heritage Baden-Württemberg).

The figurine gained more volume and the proportions are different than before. The right arm could be refitted, lamellae of the mouth were found as well as many new layers in between the body as well as both scapulae. During the work it became clear that we are dealing with a male statuette, because the platelet between the legs is completely worked and discharged and therefore indicates a penis. The whole refitting work was extremely complex (for all details see Ebinger-Rist, Wolf, 2013; Wehrberger, 2013). Apart from its meaning, the piece is of interest concerning prehistoric ivory working: The figurine was carved of a complete mammoth tusk. The head is oriented to the tip of the tusk, while the crotch of the figurine is at the end of the pulp cavity. The hands and parts of the back show the cementum layer while the rest is manufactured of the pure and softer dentine. The Aurignacian carver knew exactly the composition of a mammoth tusk and he saved labor, by creating the figurine this way.

During the excavation 1939 in the Hohlenstein-Stadel two extraordinary ivory beads and six pierced fox-canines were excavated together with the lion-man (Hahn, 1977; Reinhardt, Wehrberger, 2005; Wolf, 2015). This figurine lay in isolation in the rear chamber of Stadel cave, only accompanied by these special personal ornaments. The first bead is a huge, polished basket-shaped form with two broken eyelets at both sides (figure 8). The second piece is a nearly globular bead, but the eyelet is not preserved, too. The recent excavation in 2010 yielded nine pierced animal teeth as well as another globular pendant. Both ivory bead forms do not show any similarities with other forms of the Aurignacian sites so far (Wolf *et al.*, 2013).

Figure 8 - Hohlenstein-Stadel cave, extraordinary basket-shaped bead with broken eyelets, excavated 1939. Length: 2,1 cm (photo: Ulmer Museum).

6 - Discussion

The meaning of jewelry is mostly a symbolic one (e.g. Vanhaeren, d'Errico, 2006). A piece of jewelry can be a small decorative item or a mean to beautify the bearer. In general jewelry represents a social status (Hahn, 1992; Haidle, 2003). People use jewelry primarily to increase the attractiveness or the value of themselves within a society or a group. Any kind of jewelry like hairstyles, body painting, scarification, embroidery, chains, rings, applications on clothing and other is perceived by other people, read and evaluated. Adornment creates identity and foremost it is a means of communication. Once a form in the artifact inventory of a site recurs, it was preferred within a group over a longer period of time. The unification of jewelry for long periods of time indicates an identification of groups with this particular form (Haidle, 2003). This testifies to a stylistic and traditional craftsmanship (see also Wiessner, 1983).

The personal ornaments of Hohle Fels derive from all layers. The double perforated bead form occurs in the layer Vb, which is the oldest Aurignacian deposit. People carved this form for millennia until the end of the Aurignacian. Nevertheless we see trends in the bead forms, namely the unique forms appear in the older layers, while people developed the basket-shaped form as well as the non-perforated, constricted bead later.

The beads from Vogelherd come exclusively from the backdirt at the southwestern entrance of the cave, along with thousands of stone artifacts and bone fragments of the prey. As mentioned above, we think that the excavators put the backdirt close to the excavation area. Therefore, we can assume that during the Aurignacian people sat and worked at the southwestern entrance of the cave. The beads are represented in all stages of the manufacturing, use and discard. That shows that the objects were produced locally. People wore them and they also lost beads or discarded them. The large quantity of other finds proves the intensive usage of the cave. The jewelry ended along with the other artifacts in the everyday waste. The double perforated beads as well as the single perforated beads from the backdirt show striking resemblance to the objects of jewelry from the Ach Valley caves. The wealth and the variety of pieces from Hohle Fels and Vogelherd testify to the high mental and manual skills of the Aurignacian people. Carvers produced the beads in series, but each piece was manufactured individually and therefore represents the work of an individual.

For millennia Aurignacian people sought out the Ach – and the Lone Valley. During this long time period, they favored the same style of beads. Since especially the double perforated beads exclusively occur in the Swabian Jura and here in large numbers, we assume that they reflect a specific group membership and group identity. Many Aurignacian sites yielded personal ornaments (e.g. Otte, 1979; White, 1995; Vanhaeren, d'Errico, 2006; Wolf *et al.*, 2013). Few personal ornaments of for example the Belgian sites show similarities with pieces of the Swabian Aurignacian like a half preserved basket-shaped bead from Spy (Otte, 1979, 1995; Wolf *et al.*, 2013). But in general the numerous Swabian personal ornaments possess their own special character.

Aurignacian hunter-gatherers used the caves in both valleys. Perhaps different small groups occupied the Ach- and the Lone Valley at the same time. This would mean that they shared the same material culture; hence they knew each other and exchanged ideas and objects. In this case the people maintained similar beliefs and they created a common culture in the valleys of the Swabian Jura. However the temporal depth could not be recorded in detail to make definitive statements; it also would be possible that one valley was settled temporary while the other valley was not visited. In any case it is evident that the Aurignacian people in this region retained the desire for certain bead forms over eras. This is true at least for the stratified pieces of Hohle Fels. The specimens from backdirt of the Vogelherd sediments could also derive from one or a few visits and thus they could be the result of intensive carving. However, there are numerous pieces

and the Aurignacian layers were the thickest in the cave. These are rather arguments for an accumulation over a long period of time. The apparent deposition of the strikingly large lion-man and the special pendants in the small cave chamber suggest that this was a place, which was visited for special occasions in comparison with the neighboring Vogelherd. The lion-man provides potential clues to the beliefs of the first modern humans in southwestern Germany. The situation changes abruptly during the Gravettian, when the Swabian Gravettian people only manufactured and used the tear-dropped-shaped beads (e.g. Scheer, 1985; Wolf *et al.*, in press).

The extraordinary rich Aurignacian ivory items and especially the beads occur in a huge variety of forms and an impressive quantity. This allows many insights into the innovative material culture of the Swabian Aurignacians. But we have to bear in mind, that these are the results of 150 years of intensive and detailed research in this region. The excavations and the research of the following decades will provide additional informations about this key region of Central Europe.

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Sibylle WOLF
Nicholas J. CONARD
Department of Prehistory and Quaternary Ecology
Eberhard Karls University of Tübingen
Center for Human Evolution and Paleoenvironment
Burgsteige 11, Senckenberg, 72 070 Tübingen, GERMANY
sibylle.wolf@ifu.uni-tuebingen.de
nicholas.conard@uni-tuebingen.de

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