

Chronology or Not Chronology, That Is the Question. Synthetic Analysis of the LBK Bone Assemblage from Germany to the Paris Basin

Isabelle Sidéra

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The Sound of Bones

Proceedings of the
8th Meeting of the ICAZ Worked Bone Research Group
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Chronology or Not Chronology, That is the Question

Synthetic Analysis of the LBK Bone Assemblage from Germany to the Paris Basin

Isabelle Sidéra

Abstract

The study of Linear Pottery Culture (LBK) bone series from Baden-Württemberg to the Paris Basin has made it possible to highlight interregional, regional, and intra-site ruptures and continuities that refer to the chronology – but not only this – which presents a new problem on the scale of the LBK (Sidéra 1989; 2010a).

A first rupture is apparent between the early and middle stages and the late and final stages of the LBK. This rupture, which concerns the evolution over time of the nature of the assemblages, and of the technical and functional practices associated with them, is clearly chronological. Regionalisation emerged in parallel as early as the middle stage and increased after the end of the LBK.

On the scale of the Paris Basin, a second rupture becomes apparent between the late and final stages of the LBK (RRBP – *Rubané Récent du Bassin Parisien* – Late Paris Basin LBK). The latter is characterised not so much by a new evolution in the nature of the bone assemblages as by the development of certain artefact types in the final stage of the RRBP, which come out in the late stage – continuous with the beginnings of Villeneuve-Saint-Germain.

The evolution of bone assemblages within the LBK is significant, and is obvious not only within the broad range of LBK chronology, but also at smaller intervals. Therefore, bone industries are reliable chronological indicators. We shall see, however, that as far as bone tools are concerned chronology is not the unique factor behind the assemblages' variability. The same evolutionary developments cannot always be found, at least systematically, on the intra-site scale, i.e., well-documented buildings in Cuiry-lès-Chaudardes (northern France), as well as those at other minor sites. The analysis of this distortion between the interregional, regional, and intra-site scales of

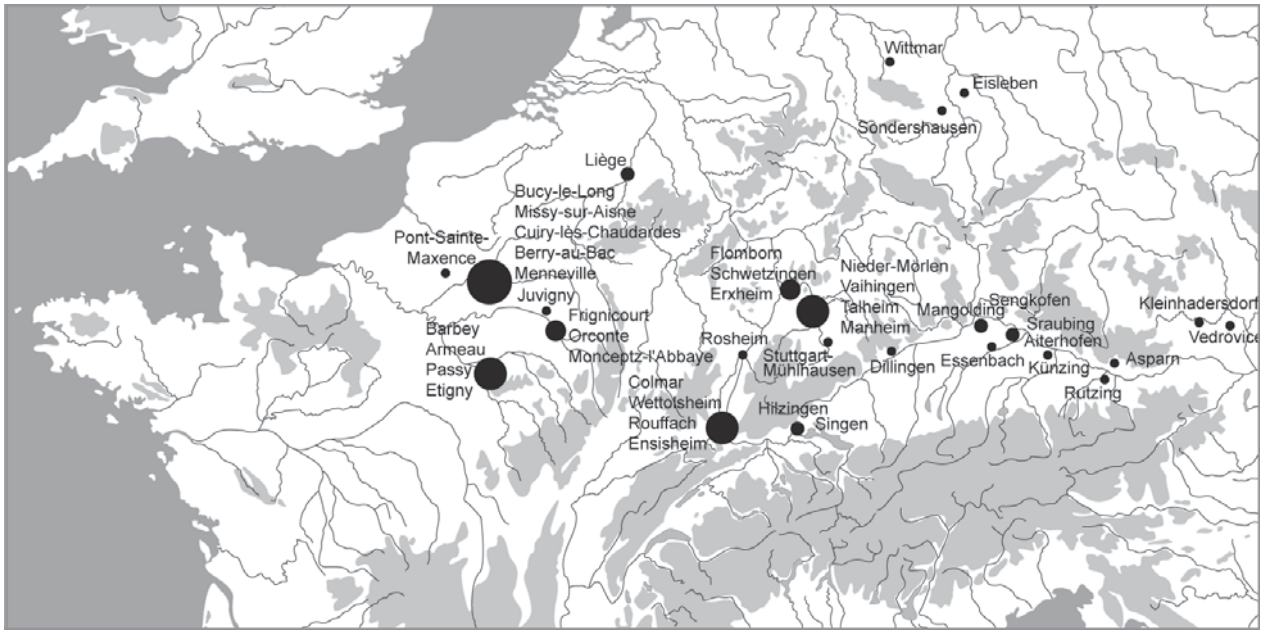


Fig. 1: Locations of the principal LBK dwelling or funerary sites with published bone industry.

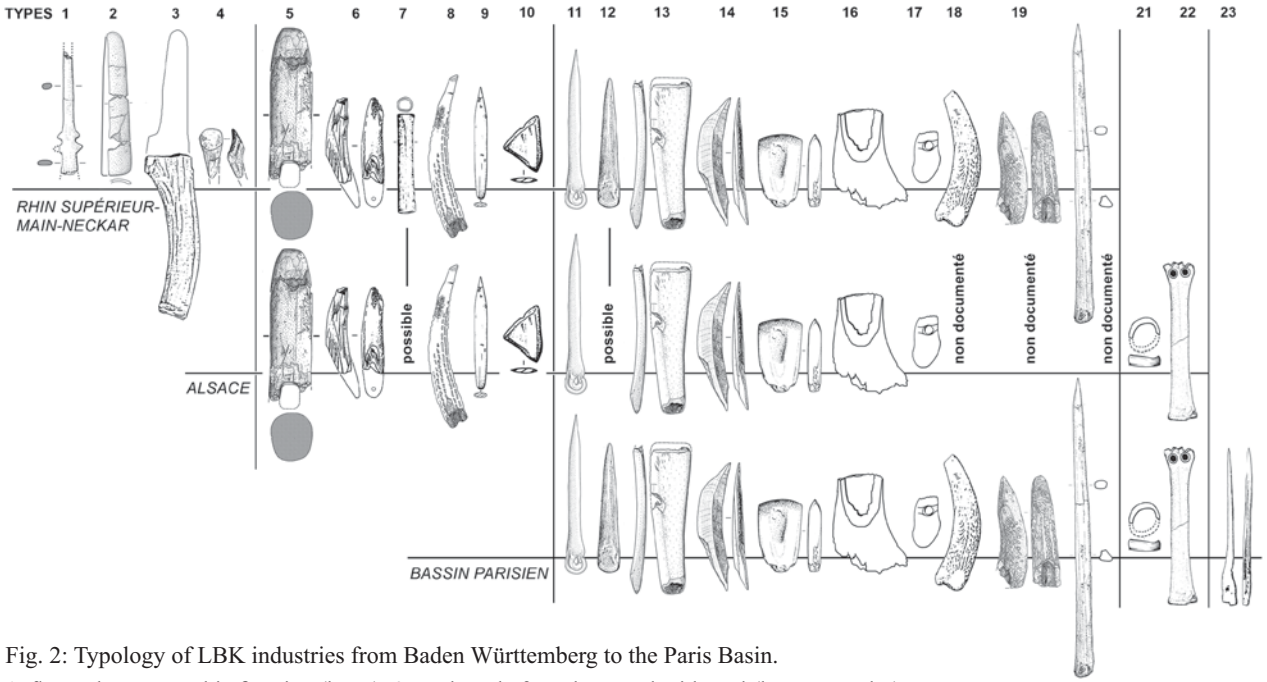


Fig. 2: Typology of LBK industries from Baden Württemberg to the Paris Basin.
1: flat anthropomorphic figurine (bone). 2: tool made from long and wide rod (bone or antler).
3: "T" axe (antler). 4: elbowed object (bone). 5: long and smooth mass with pointed or diffuse termination and central perforation (antler). 6: bevelled tine with an abraded basis - perforated or not (antler). 7: tube (bone). 8: tine (red deer) tool with a flat ative surface. 9: tool with flat surface and tip made from rod (bone). 10: triangular "arrow point" (bone). 11: pointed tool cut in two from ruminant metapodial with unmodified termination. 12: pointed tool cut in two from small ruminant metapodial with modified termination. 13: end scraper made from whole or split rib with straight or curved edge. 14: side scraper made from pig or boar canine blade. 15: bone adze or axe. 16: crude adze (bone). 17: perforated deer canine. 18: pointed antler (red deer) tool.
19: cutting tool made from antler (red deer). 20: pointed tool made from ruminant metapodial sawn in quarters. 21: transversely sawn ring (bone). 22: anthropomorphic figurine made from whole ruminant metapodial with granularised or incrusted nacre.
23: pointed tool made from distal ruminant metapodial with flattened sides.

observation leads to the conclusion that the bone assemblages from contemporary buildings on the same site each result from differentiated regional traditions. In other words, social networks with different geographic origins – probably owing to kinship and exogamy – are differentiated and cohabit within the same site, inside distinct buildings.

The LBK bone industry is a recently studied subject. The first publications aiming to isolate the objects and attempt to look at them as a whole came out at the end of the 1970s and the beginning of the 1980s (Gallay / Mathieu 1988; Kaufmann 1989; Mathieu 1983; Poplin 1975, 1976; 1980; Poulain 1983; Rulf 1984; Sidéra 1984; 1989). So, to document the issue and draw up a pertinent overall portrait, time was needed to constitute a vast corpus and study the series from the point of view of the forms, techniques, and functions. Understanding the system of production seems to me to be the only way to reach a conclusion about intent. I have made a point of characterising the assemblages from the large interregional area ranging from Baden-Württemberg to the Paris Basin, as the evidence from bone material is better preserved there than elsewhere, with regular occurrences allowing comparisons. In Baden-Württemberg, as in Alsace, the bone assemblages are associated with all the stages of the LBK from the Flomborn (early LBK) to the end of the LBK. In the Paris Basin, the last stages called RRBP are represented everywhere. Taking the publications into account and enlarging the area a bit towards the east and north allows some fifty sites to be considered (Fig. 1), and the first bone industry typology for the LBK in the extreme west of Europe can be established (Fig. 2).

Keywords: Linear Pottery Culture, Germany, France, bone artifacts, chronology, regional signatures, alliance networks, movements of individuals

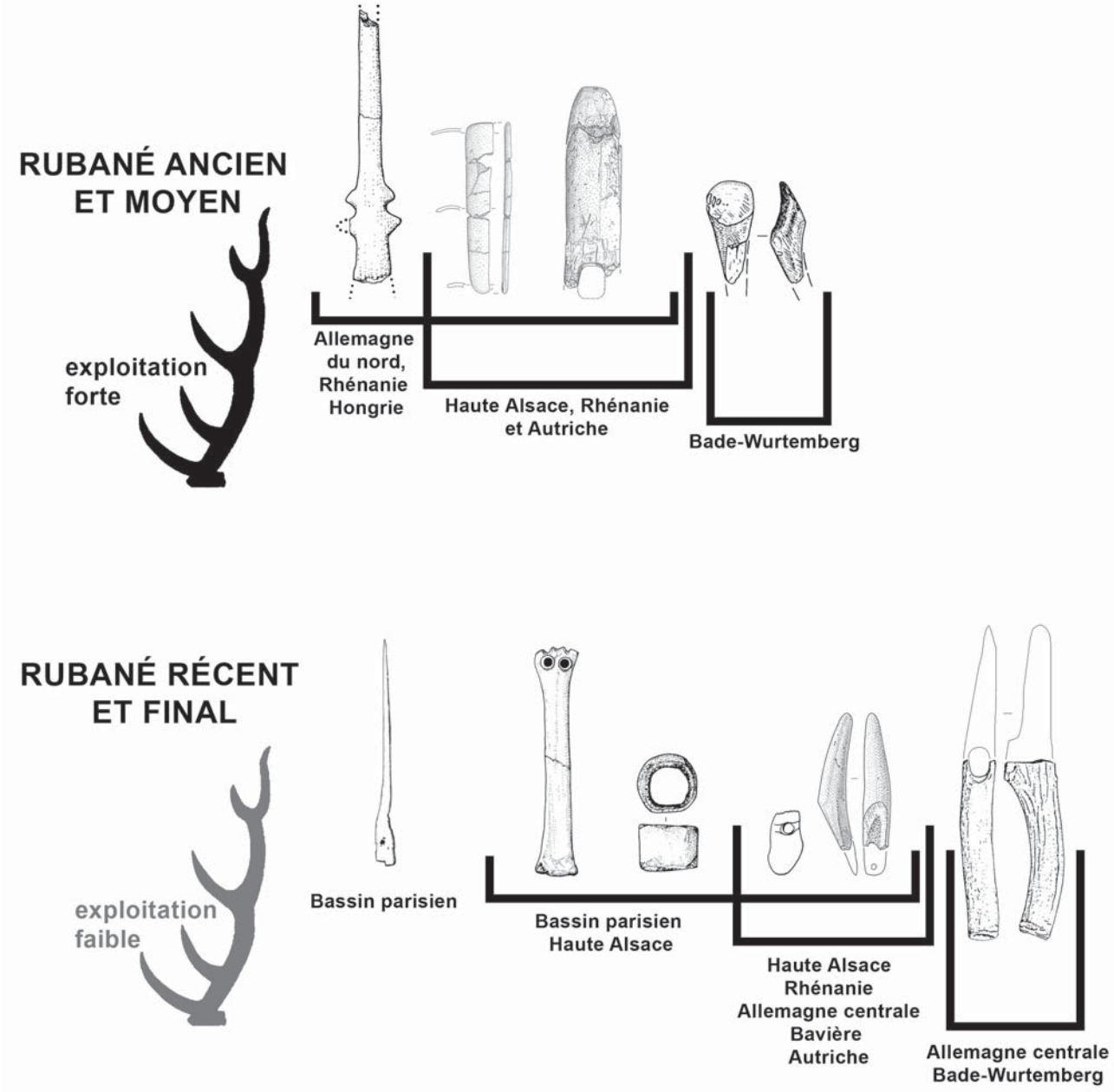


Fig. 3: Chronological evolution of LBK bone industries, between Baden Württemberg and Paris Basin.

1. From Baden-Württemberg to the Paris Basin

The typology has been organised according to the major regions studied: 1. upper Rhine/Main/Neckar, 2. Alsace, and 3. Paris Basin. It distinguishes 23 types of objects made from bone, teeth, and antler – the details of which we shall not go into here[1] – calling for several comments:

1. A batch of objects common to all three of the regions considered clearly forms the base of the LBK identity (Fig. 2: 11-19).
2. Two major groups can be distinguished – one with a strong presence of antler, including large perforated pieces (Fig. 2: 1-10), the other with smaller objects mainly made from bone and, secondarily, from teeth and antler (Fig. 2: 11-23). These groups divide the east and west of the geographic area considered.
3. Specific characteristics shared between two neighbouring regions appear, such as between Alsace and Baden-Württemberg (Fig. 2: 5-10) and Alsace and the Paris Basin (Fig. 2: 20-21).
4. Specific regional characteristics are apparent, peculiar to the two major eastern/western groups already mentioned: upper Rhine/Main/Neckar/Alsace (Fig. 2: 1-4) and Paris Basin (Fig. 2: 23).

If the types of objects are arranged in two large chronological parcels – one early and middle LBK, the other late and final LBK – it then becomes possible to identify chrono-regional indicators (Fig. 3).

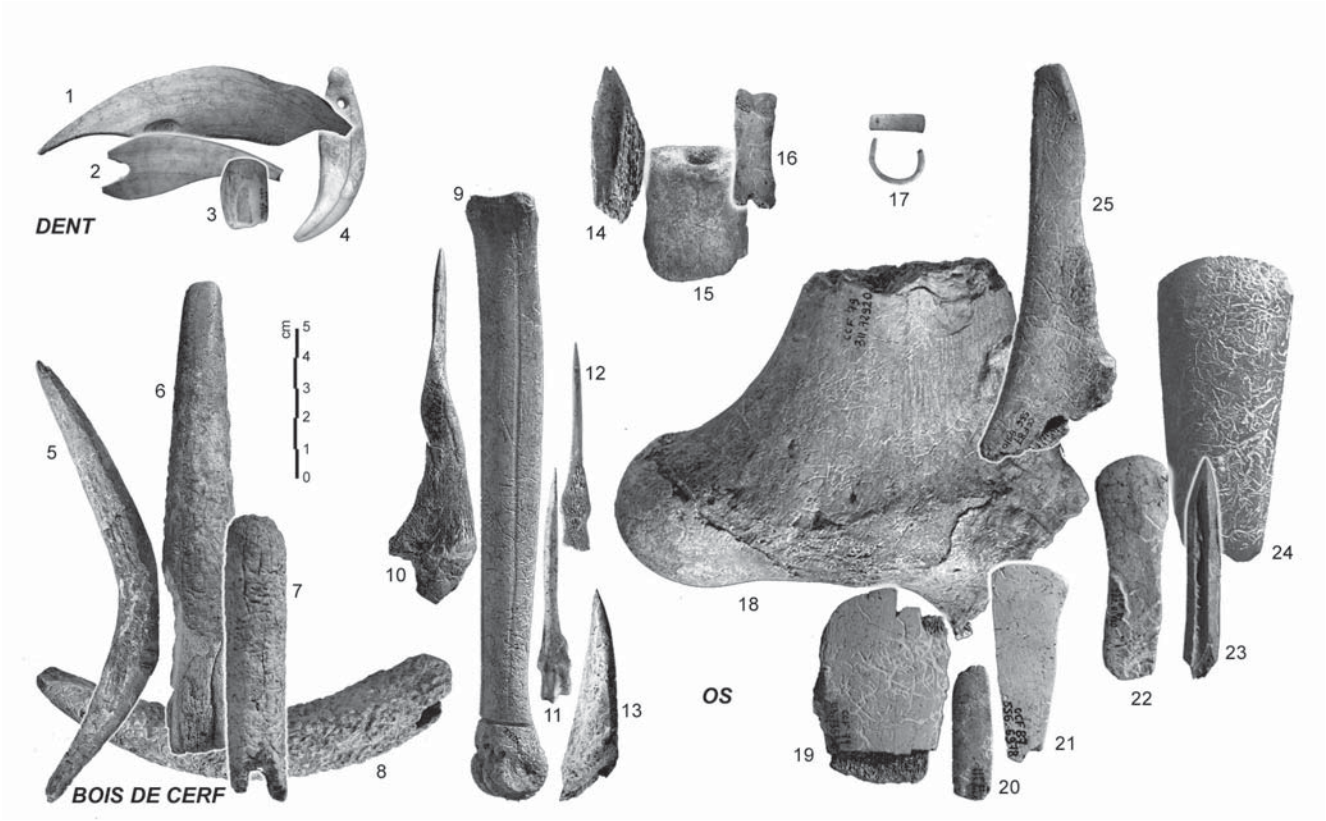
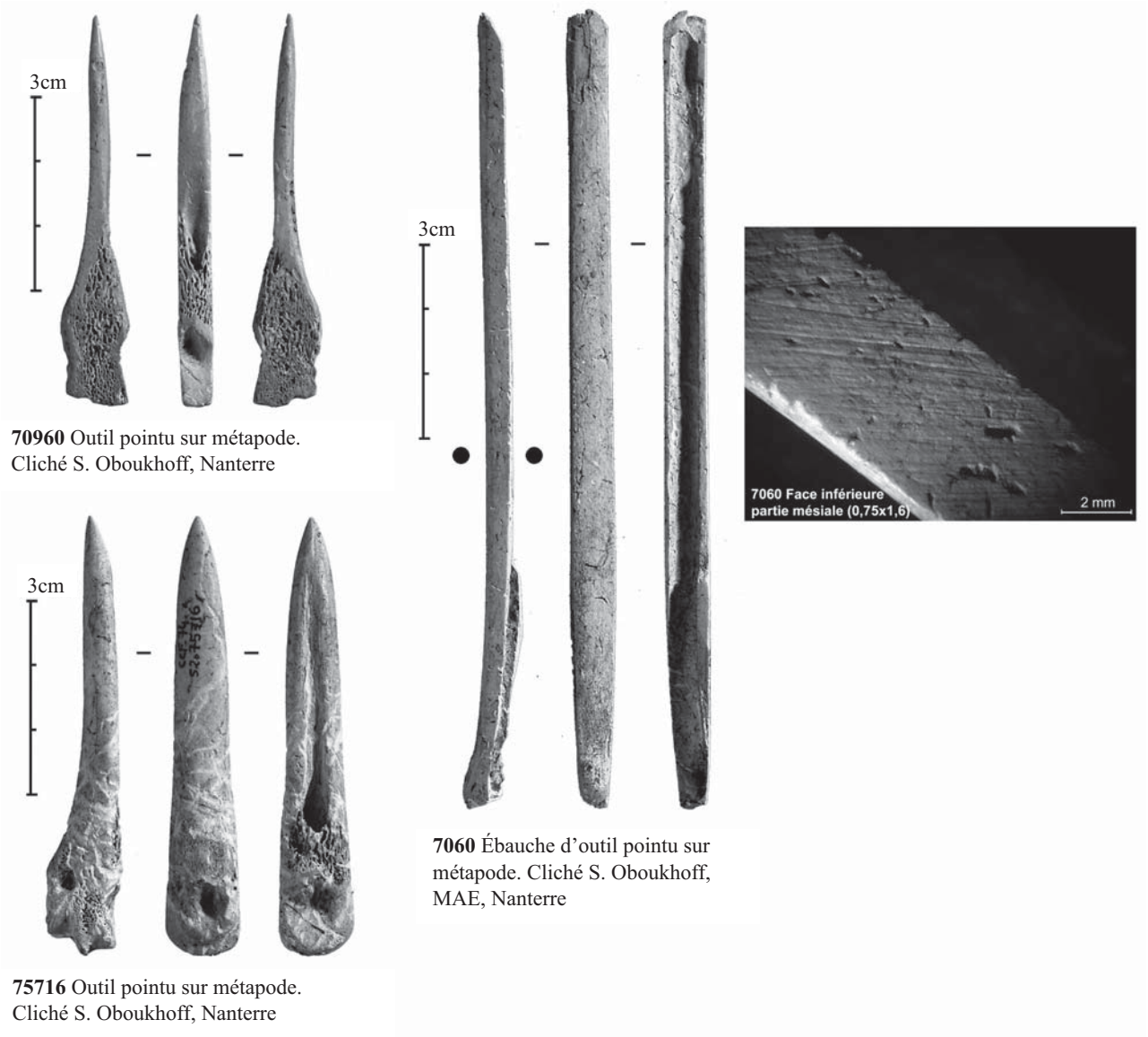


Fig. 4: Presentation of the types of the bone industry of Cuiry-lès-Chaudardes.
1: side scraper made from pig canine blade. 2: side scraper made from perforated pig canine blade. 3: element of mass made from bovine molar. 4: pierced bear canine. 5: bevelled antler base perforated or not. 6: cutting tool made from antler. 7: perforated handler made from antler. 8: pointed tool made from antler probably hafted. 9: pointed tool made from ulna. 10: pointed tool made from large ruminant proximal metapodial sawn in quarters. 11: pointed tool made from small ruminant metapodial sawn in two with sides and epiphysis little or non-transformed. 12: pointed tool made from small ruminant distal metapodial with flattened sides. 13: pointed tool made from undifferentiated bone flake. 14: two-toothed bone comb. 15: perforated ox phalange.
16: possible figurine made from goat phalange. 17: ring. 18: cutting tool made from transverse section of large bone (crude adze). 19: cutting tool made from transverse section of large ruminant rib, with straight or convex smooth cutting edge. 20: cutting tool made from transverse section of large ruminant rib, with straight or convex notched cutting edge. 21: cutting tool made from split large ruminant rib, with straight or convex cutting edge. 22: cutting edge made from long undifferentiated bone flake with wide and facial cutting edge, straight or convex. 23: cutting edge made from undifferentiated bone flake with narrow axial cutting edge. 24: bone shoemaker's last. 25: cutting edge made from large ruminant ulna.

The large perforated maces present on many sites from Alsace to Austria became typical of the early and middle LBK (Fig. 2: 5) (Fehlmann 2010; Hüser 2001; Rück 2000; Sidéra 1998; 2000). This was accompanied by antler being exploited on a large-scale: 25% of the studied sample from the Vaihingen series[2] (Sidéra 1998) (Fig. 3). These instruments are no longer present in the late and final LBK, in Alsace or the upper Rhine/Main/Neckar region, and are absent from the RRBP. In the final LBK, antler exploitation fell to 9% both in Alsace and the Paris Basin (Sidéra 1993; 2000).

The use of bone as a material became prevalent, as did new artefact types in both the Alsace and the Paris Basin series, when rings – common to the final LBK of Alsace and the RRBP – came onto the scene, as well as awls with flat sides and epiphyses, which are present all over the Paris Basin (Sidéra 2010a) (Fig. 3). These data reveal a bone assemblage evolving rapidly within the stages of the LBK, closely linked to the coevolution of economic and functional activities as well as to the interplay of exogenous interactions.

Alongside the material's chronological evolutions, regional variations in bone production started to become clear in the early and middle LBK, with bent bone objects specific to Baden-Württemberg (Fig. 2: 4) (Sidéra 2010a). The regionalisation becomes more apparent in the late and final stages, when certain types of objects have a limited geographic diffusion (Fig. 3). The same applies to the 'T-axes' in the late and final LBK of Baden-Württemberg (Sidéra 1998; 2010a), where they continued to develop in the Hinkelstein (Fritsch 1992), Grossgartach (Schlitz 1901), and Roessen (Dümmer: Werning 1983; Heidelberg: Spatz 1988).



70960 Outil pointu sur métapode. Cliché S. Oboukhoff, Nanterre

7060 Ébauche d'outil pointu sur métapode. Cliché S. Oboukhoff, MAE, Nanterre

75716 Outil pointu sur métapode. Cliché S. Oboukhoff, Nanterre

Fig. 5: Not very thick pointed tool with flat epiphysis and sides obtained by complete abrasion (no. 70960). Rough working of a not very thick pointed tool with flat epiphysis and sides obtained by complete abrasion (no. 7060). Traces of abrasion connected to its production by cutting present on the body of the tool, photograph taken where marked by points of the piece (© I. Sidéra). Pointed tool sawn in two with working on the epiphysis by abrasion (no. 75716).

Likewise, although the flat-based tines with or without perforation (Fig. 2: 5) have a very broad area of diffusion – from the Neckar to Alsace and from Bavaria to Austria – it does not extend as far as the Paris Basin (Sidéra 2010a). In this region, only a single isolated specimen exists at Cuiry-lès-Chaudardes and it has a strong morphological drift (Fig. 4: 5).

Various bone instruments have a regional distribution different from and more circumscribed than that of the antler items. Thus, the rings and fully 3-dimensional figurines join the Paris Basin and Haute Alsace together (Jeunesse 1995; Sidéra 2000). The thinner, pointed tools with flat epiphyses and sides (Fig. 2: 23) are exclusive to the Paris Basin: Aisne, Oise, Champagne, Yonne and Seine-et-Marne (Fig. 3) (Sidéra 2008; 2010a; 2010b).

The chrono-geographical distribution of the types of bone material objects suggests diffusion and exchange networks that are complicated and which change over time within defined micro-regional entities. All this describes an interconnected world in movement.

2. The Paris Basin

Let us now consider chronology and space more closely and focus on the RRBP. We shall rely on the 25 artefact types from the corpus of Cuiry-lès-Chaudardes (456 pieces) – the most complete corpus on the regional level (Fig. 3).

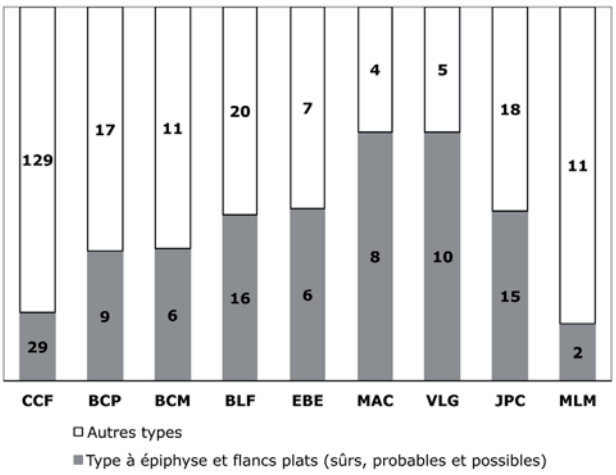


Fig. 6: Proportion of flat-sided pointed tools in relation to the other types of pointed tools in the LBK and Villeneuve-Saint-Germain sites in the Paris Basin (following Sidera 2010).

As we have seen, bone was valorised to make objects with substantial morphological diversity. The cutting tools have the most varied forms (Fig. 4: 18-25). The pointed tools come next (Fig. 4: 9-13).

Amongst the rare or remarkable bone items, let us mention a comb with two teeth, doubtless used to decorate ceramics (Fig. 4: 14), possible small handles made from phalanges (Fig. 4: 15), a probable figurine made from a goat phalange (Fig. 4: 16) and rings (Fig. 4: 17). The antler objects are not very numerous, not very diversified and mainly manufactured from tines (Fig. 4: 5-8).

The teeth include, primarily, side scrapers made from boar tusks (Fig. 4: 1-2), curious cylindrical objects used percussively and most often manufactured from bovine molars (Fig. 4: 3), and one artefact for personal ornamentation – in this case made from a bear canine (Fig. 4: 4).

Between the late and final stages of the RRBP, no typological difference clearly appears (Fig. 3). An increase in the use of the thinner, pointed tool form, with flat epiphyses and sides, which were very probably produced purely by abrasion, occurred on a regional scale at the expense of the other types of pointed tools, especially those sawn in two. The latter became significant from a chronological point of view and are characteristic of a regional continuity manifest up till the early stage of the Villeneuve-Saint-Germain (Sidéra 2008; 2010a; 2010b) (Fig. 5).

3. At Cuiry-lès-Chaudardes

Let us examine the intra-site scale and consider the building-by-building distribution of the chronologically significant items such as pointed (thinner) tools with flat epiphyses and sides and bone rings, following the chronological phases established by Mr. Ilett on the basis of decorated ceramics (Fig. 5). In the earliest phase, the flat-sided pointed tools and rings are rare. They are represented by single units found in a few buildings. In the middle phase, the flat-sided pointed tools are present as single units, but their presence is systematic in the well-documented assemblages, with the exception of at least one house (no. 440) or, possibly, two (no. 380[3]). As for the rings, they have been found in several buildings, including houses 440 and 380. In the late phase, the flat-sided pointed tools are represented by more than one specimen in all the well-documented assemblages. The rings are still represented in several buildings. The building 225 assemblage – one of the latest from the site (Constantin / Ilett 1997) – includes more than half of the total number of tools of this type. It also contains a large number of rings and ring-making matrices. Therefore, the pointed tool assemblages constitute – certainly in the case of the 440 building, perhaps for the 380 one, too – anomalies from the chronological point of view (Sidéra 2010 a). Thus, on the intra-site scale the chronological factor is not entirely effective. It does not explain the absence of pointed tools with flat epiphyses and sides from certain buildings. Another paradigm is needed to explain this absence.

In reality, the composition of the 'ring – no flat-sided pointed tool' assemblages corresponds to the final LBK of Haute Alsace and Baden-Württemberg (Fig. 2). Thus, it is possible to attribute the origin of these compositions to these regions. In contrast, it seems to me that the 'ring, flat-sided pointed tool' composition has a different geographic origin. It evokes a mixture of the LBK technical tradition and the Cardial tradition – as I have already explained in a previous article (Sidéra 2008; 2010a). Champagne, where both types of objects were found in a funerary context (Sidéra 2000) and from where a large part of the lithic raw materials also came (Allard 2005), may have been the centre of diffusion for these southern traditions and the zone of origin for this composition.

The hypothesis I am suggesting, therefore, is to see in these manufacturing traditions, for bone objects which are differentiated by buildings, the visible part of a circulation network for people through two alliance networks which crossed inside the LBK: a first network with the east, perhaps connected to the Haute Alsace, and a second with the south – for example, with Champagne. Of course, this would concern the movements of a few individuals, not entire groups.

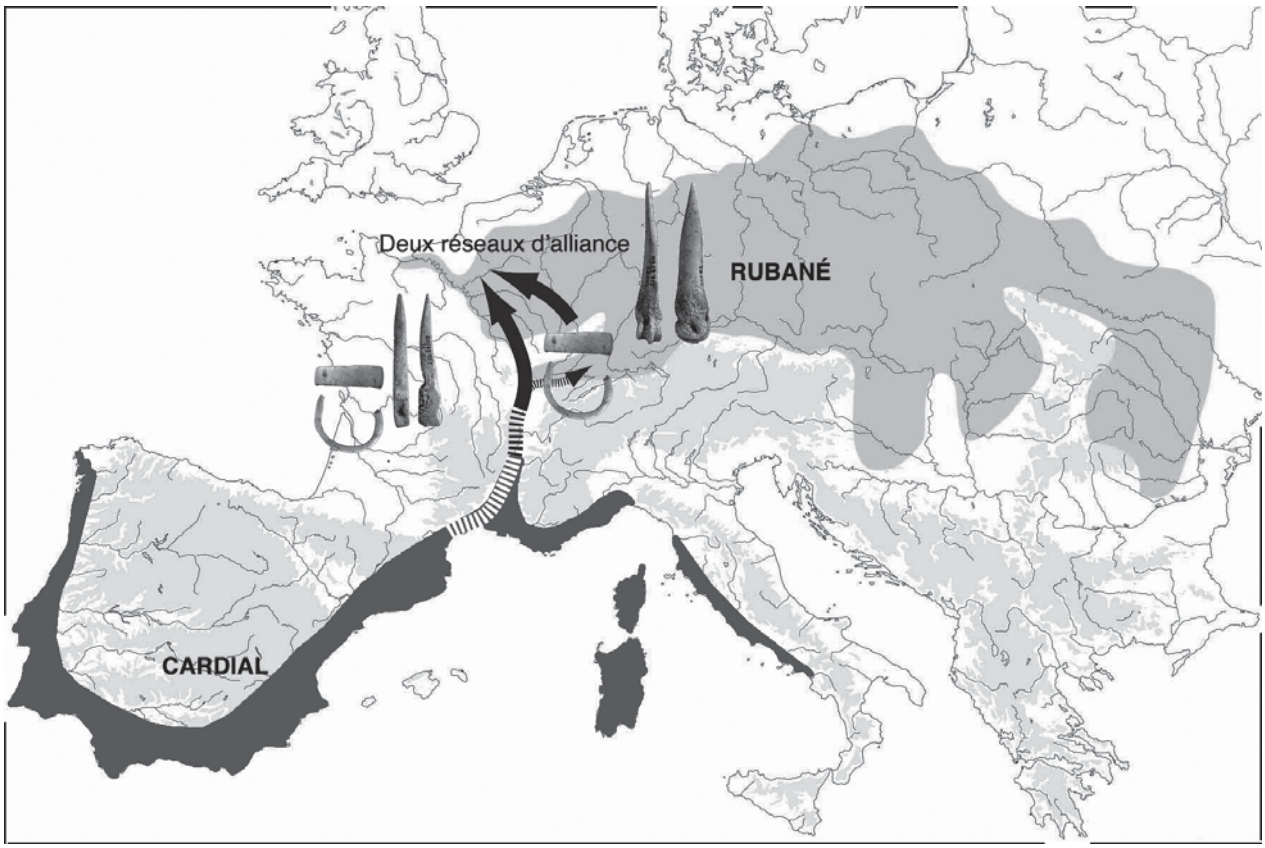


Fig. 7: Two alliance networks in the late LBK Paris Basin. PAO G. Monthel.

These hypotheses postulate the non-homogeneous character of the settlement of villages in the LBK and give a new anthropological perspective to the diffusion of the Neolithic and its chronology. These villages, then, do not result from the movement of a single population, such as settlers coming from one place and installing themselves in another, having followed and perpetuated a single route. On the contrary, they may be the result of aggregations arising from various exogamic alliances, and be founded on the movements of individuals associated with the exchange of women. In this way, the different hallmarks would be due to the variations in the manufacturing traditions in the regions from which the toolmakers came. Indeed, the evolution of these tools cannot be linear even in narrow chronological bands such as the late and final stages of the RRBP, which cover about a hundred years. Being more anthropological in nature, this evolution is, on the contrary, characterised by irregularities and ruptures.

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Notes

[1] The detailed information is currently available in a 2010 university study (Sidéra 2010), and will be accessible in a forthcoming volume of the Cuiry-lès-Chaudardes monograph (Sidéra, to be published).

[2] This figure is provisional, since the count concerns a small sample of 131 pieces from the series (Sidéra 1998). It should, however, be pointed out that waste material from working on antler is found in very considerable quantities on this site.

[3] One pointed tool made from a metapodial is too incomplete to be attached to one type or the other: whether flat-sided epiphysis or sawn in two.

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