

# The first Aurignacian technocomplexes in Europe: a revision of the Bachokirian

■ JEAN-PHILIPPE RIGAUD ■ GÉRALDINE LUCAS

**ABSTRACT** The initial stages of the Upper Paleolithic are at the origin of a long debate on the emergence of modern behavior. The acculturation model was founded on evidence which is now questionable. The contemporaneity of Neandertals and *Homo sapiens sapiens* based on interstratifications at Le Piage and Roc-de-Combe is not supported by recent studies. The Bachokirian,

one of the oldest Upper Paleolithic culture in the Balkans was for a long time considered as an “Aurignacoid” technocomplex but it doesn’t show any typological or technological characteristics of the European Aurignacian assemblages. Elaborating a definition of the Aurignacian culture should start by some rethinking of our methodology and our terminology.

## Introduction

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In Europe, the appearance of the first Aurignacian technocomplexes is a major event for our understanding of the Middle-to-Upper Paleolithic transition. Indeed, the age of the first Aurignacian industries is determining in a debate where what is at stake is to know whether the Neandertals, authors of the Castelperronian cultures but also of the Uluzzian and a few other so-called transitional industries, have developed their own technology independently by passing from Middle Paleolithic to Upper Paleolithic (Pelegrin, 1995; Rigaud, 1989, 1993, 1996, 2000 (cf. 1998), 2001; D’Errico et al., 1998, 2000) or if they have acquired what could be called a modern behavior under the influence of an acculturating process (Mellars, 1990; Demars, 1991; Demars and Hublin, 1989; Hublin, 1990). To speak of an acculturation necessarily means that Aurignacian populations, which were hurriedly and exclusively assimilated to the *Homo sapiens sapiens* kind (Stringer, 1990; Hublin, 1990) were contemporaneous with Neandertal populations and that they had developed direct or indirect contacts.

Another point of view posits the possibility of a biological continuity, and therefore of a cultural continuity, between Neandertals and modern humans; it has been supported by anthropologists as well as prehistorians (Cabrera and Bernaldo de Quirós, 1990; Valoch, 1990; Wolpoff, 1998). According to these authors, the Upper Paleolithic and more specifically the Aurignacian could be the result of a technological evolution deeply rooted in the local Mousterian. On the basis of the data from Vindija cave (Croatia), a variant of the acculturation model has been proposed by Karavanić and Smith (Karavanić, 1995; Karavanić and Smith, 1998). The association in the G1 level of an Aurignacian bone point and of Neandertal human remains has been interpreted by Karavanić and Smith (1998, 2000) as the indication of a “biocultural” interaction between Neandertals and *Homo sapiens sapiens* populations that would have been contemporaneous over a long time span. Therefore, the authors admit that Neandertals could have produced an Aurignacian industry.

If the fact that late periods of the Aurignacian are associated with anatomically modern humans is usually accepted (Hublin, 1990; Stringer, 1990), we must admit that we do not know of fossils associated with the Archaic Aurignacian (Rigaud, 1986, 1993); thus, the pos-

sibility that Neandertals could have been the authors of it cannot be *a priori* removed from further consideration. Yet, such a possibility will have to be established in a much more rigorous way, because the data from Vindija cave are not convincing, given the questionable geological context among other things. But, following Karavanić and Smith's (2000) proposal, these data can be accepted for the debate while waiting for more conclusive arguments. According to Garralda and Vandermeersch (2000), the human teeth remains associated with the first Aurignacian occupations of the El Castillo cave show morphometrical features within the variability limits of Neandertals. Nevertheless, it is not possible to assign these with certainty to Neandertals or *Homo sapiens sapiens*.

Finally, to be the more complete, we must evocate the publication by Trinkaus and Zilhão of the human remains from Lagar Velho, which pose the problem in terms of hybridization, implying contemporaneity of the two populations (Trinkaus et al., 2001).

Whatever model is chosen, the relative chronological position of the last Neandertal productions and of the first Aurignacian technocomplexes becomes of great importance. The chronological frame of reference was initially based on stratigraphic data. By the end of the 1950s, the Castelperronian (= Lower Perigordian) underlying the Aurignacian was considered as earlier on the basis of the stratigraphies of Le Moustier, La Ferrassie and many other sequences of Atlantic Europe. Yet, Bordes and Labrot (1967), on one hand, and Champagne and Espitalié (1967), on the other, based on the Roc-de-Combe and Le Piage, wrote that they had found stratigraphic sequences where Castelperronian and Aurignacian levels were interstratified. Their conclusion was that there was contemporaneity between the Castelperronian and the Aurignacian in southwest France. At the same time, in Spain, González Echegaray signaled that there was a Lower Perigordian (Castelperronian) level over an Aurignacian occupation at the site of El Pendo (González Echegaray, 1982).

Two 1998 symposia, "Gibraltar and the Neandertals", in Gibraltar, and "The first modern humans of the Iberian Peninsula" in Vila Nova de Foz Côa, called the stratigraphic argument in favor of a contemporaneity between Castelperronian and Aurignacian into question (Rigaud 1998, 2000 (cf. 1998)).

At Le Piage, Champagne and Espitalié (1967), as well as Laville (1981), wrote about the difficulties they had met to follow the continuity of some of the deposits. Laville had then mentioned the possibility of disturbances caused by renewed karstic activity. Furthermore, Pelegrin (1995), much as Demars (1990), mentioned Aurignacian contaminations in the Castelperronian assemblages.

At the Roc-de-Combe, the interstratification described by F. Bordes was based on stratigraphic correlations between the porch and the interior of the cave, and mainly based on the identification of a Level 8 (Bordes and Labrot, 1967). Some really detailed arguments developed by one of us (Rigaud, 1998) demonstrated that, on one hand, there was no continuous stratigraphic sequence and, on the other hand, that the identification of a Level 8 by F. Bordes was largely hypothetical. Thus, it was possible to give a different interpretation of the Roc-de-Combe stratigraphy and to call the interstratification of Castelperronian and Aurignacian levels into question again. Recently, J.-G. Bordes undertook a taphonomic analysis of these two sites that led him to confirm our conclusions while bringing new arguments to bear on the issue (Bordes, 2002).

The same thing happened with the El Pendo sequence, where new work conducted by Hoyos and Laville (1982) revealed some geological abnormalities that did not allow it to be considered as an acceptable reference anymore.

We also have showed that radiometric data related to Castelperronian and Archaic Aurignacian confirmed the precedence of the former over the latter in southwest France, as well as the precedence of the Castelperronian of southwest France relative to the Castelperronian

of central France (Rigaud, 1998). Thus, we have demonstrated that any contacts between Castelperronian and Aurignacian cultures could have been possible only after the first stages of the Castelperronian.

Yet, in the Balkans, in central Europe, and in Spain, Aurignacian or “Aurignacoid” technocomplexes have been dated back to more than 40 000 years ago (Kozłowski, 1982, 1983; Hahn, 1988, 1995; Cabrera and Bischoff, 1989; Bischoff et al., 1989). A reappraisal of sites from Spain, Belgium, Germany, Austria, Hungary, Ukraine and the Balkans led Zilhão and d’Errico (2000) to conclude that the age of some of these Archaic Aurignacian industries was questionable, and that Aurignacian technocomplexes systematically post-dated the Castelperronian and similar industries from central and eastern Europe. This is closely related to what we had already written about the southwest of France (Rigaud, 1998). So, we had to be sure that industries considered by some as part of the earlier stages of the Aurignacian really belonged to this culture. This we did in 1997 for Level II from Bacho Kiro, whose attribution we had been questioning as early as 1998 (Rigaud, 2000).

### **The industry from Bacho Kiro, Level II**

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The industry from Level II was first called “Bachokirian” by J. K. Kozłowski and A. Dagnan-Ginter (Kozłowski, 1982) in the monograph dedicated to the publication of the work carried out at Bacho Kiro cave between 1971 and 1975. In more recent publications, they called it “Pre-Aurignacian” (Kozłowski and Otte, 2000). The <sup>14</sup>C dating results were >43 000 BP (GrN-7545) (Kozłowski, 1982), 33 750±850 BP (OxA-3184), 34 800±1150 BP (OxA-3212) and 38 500±1700 BP (OxA-3213) (Hedges et al., 1994).

According to the authors, the industry from Level II includes endscrapers, some of them “on blades with Aurignacian retouch” (Kozłowski, 1982, p. 125), “carinated and elevated atypical endscrapers” (p. 125), some “not so typical nosed endscrapers”, a few “Aurignacian retouched blades” (n = 9), four distal parts of “Font-Yves points”, and an object that looked like a “Caminate endscraper”. Dufour bladelets were completely missing (“they do not include any classical Dufour type bladelets” (Kozłowski, idem, p.137). According to these typological criteria, Kozłowski and Ginter stated that Level II was typologically homogenous, that the (stratigraphic?) subdivisions the level is made of, represented not only the same cultural tradition but also the same development phase, and, finally, that the technological and typological structure of the industry put it in the Aurignacian tradition (Kozłowski, 1982, p. 162).

H. Delporte and F. Djindjian (1979) carried out a comparative study of series of the early western Aurignacian and of this Archaic Aurignacian from the Balkans based on the typological inventory made by Kozłowski and Ginter but without having seen the industry. They came to the conclusion that “the Aurignacian from Bacho Kiro shows typological features close to those of Aurignacian levels 9 to 6 from Cueva Morin...” and that “the presence in these levels of Dufour bladelets (...) reinforces the resemblance”. Later, H. Delporte (1998) confirmed the Aurignacian attribution using as arguments new and contrary typological and statistical data published by Kozłowski (1982; Kozłowski and Otte, 2000). Thus, Delporte (1998, p.108) wrote that the industry contained about 41% of blades with Aurignacian retouch and a few Dufour bladelets.

A new study of the industry had to be done, contradictions being too numerous. In 1997, we had the possibility to study the Level II collection from Bacho Kiro kept at the Archeological Institute of the Bulgarian Academy of Sciences in Sofia. We were able to do the following preliminary observations:

## **Raw material**

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Flint is highly predominant, most often in varieties of a good grade, and colors are very variable (brown, beige, grey). We were not able to check on the field the origin of the different varieties to evaluate distances to the site, but information given to us by N. Sirakov indicated that the sources were at least 10 km away, and that there were no pebbles of the same raw-material in the river bed near the cave.

Volcanic rocks (basalt) as well as quartzite and sandstones are also to be found, but in smaller amounts than in the underlying Mousterian levels (Kozłowski, 1982). The size of flint blocks ranges from 5 to 7, cm and the products are of medium size.

## **Laminar products**

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Nearly one third of the flint production is made of laminar products. They are highly fragmented, proximal and medial parts are dominating, the unbroken blades are rather large and thin. Cores most often have only one striking platform.

## **Lamellar products**

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The absence of bladelet nucleus and of carinated pieces clearly indicates that lamellar production was rather marginal. The examination of sieving products allowed the identification of 25 bladelets <5 mm wide and with an average thickness of 13 mm. Such low numbers are obviously not the result of intentional bladelet production but rather represent the byproduct of operations of shaping out or retouching thick blanks.

## **Percussion techniques**

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The specific shape of the striking platforms and of the bulbs seems to indicate that hard hammer stones were mostly used.

## **Retouched artifacts**

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The retouched tool kit found in Level 11 of Bacho Kiro has endscrapers, some times made on crested blades, which lends them a carinated shape, but where no lamellar “retouch” can be seen. There are also a few endscrapers made on flakes, some really rare burins, and many blades retouched on one or both sides. No blades can be called Aurignacian blades, since no scaled or stepped retouch is present. The Font-Yves point fragments described by Kozłowski are actually distal fragments of small retouched blades frequently found in any Upper Paleolithic assemblage.

The diversity of imported raw-materials, the scarcity of cores and of initial markers of the operating sequence, the abundance of re-sharpening and re-use, and the huge number of retouched artifacts, leads us to think that the industry from Level 11 of Bacho Kiro represents an exhaustion facies where siliceous raw-materials were processed to the limit.

Aurignacian retouched blades, carinated pieces (end scrapers or burins) that could be used to produce bladelets, Dufour bladelets, and more generally microlithic tools, are absent. Thus, we reject the possibility that the industry from Level 11 belongs to an early or archaic phase of the Aurignacian, even if we take into account the regional techno-typological peculiarities of this culture as patent in later stages of the same sequences.

It is obvious that, even if the Upper Paleolithic characteristics of this industry were developed, it is in no way within the limits of variability of the Aurignacian. As we had suggested in 1998, it is much closer to some industries linked with the Initial Upper Paleolithic of the Near East. While waiting for a better definition, it should be connected to a polymorphic group of “Initial Upper Paleolithic” industries to which the Beauronnian also belongs (Sackett, 1999; Rigaud, 2001)

## Discussion

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As it is clearly shown by its title — “Towards a definition of the Aurignacian” — one of the goals of this symposium was to define techno-typological features that could allow assignment of any given assemblage to the Aurignacian culture. The goal we want to pursue relates to taxonomy and terminology, as well as to issues of lithic assemblage variability.

## About terminology

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A few expressions widely used in our community are actually rather vague. Thus, they can generate some dangerous confusion. In order to illustrate this problem, we have chosen the example of the Dufour bladelets. Demars and Laurent (1989) defined two subtypes: the “Dufour” subtype, with a length ranging from 30 to 45 mm and curved profile; and the “Roc-de-Combe” subtype, with a twisted profile and 15 to 20 mm long. These two subtypes not only had different sizes and morphologies, their production modes were also different, as widely described (Lucas, 1997, 1999; Ortega, 1998; Teyssandier, 1998; Bon, 2000; Bordes, 2002). These pieces, whose morphology and technology are different, should be given different names. They can be found together or separated in many Aurignacian industries in Europe, and they have been given the same chronological and/or cultural meaning.

## On taxonomy

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The goal of this symposium was not really to establish a “stereotype” of the Aurignacian, or to give a “legal definition” of it, which would be immediately contradicted by its own techno-typological variability. Its goal was more to establish the criteria that will help to identify the Aurignacian as a technocomplex. To do so, the rules of taxonomy establish that the characteristics chosen will have to be: 1) defined without any ambiguity but also 2) patent or continuous (their absence being significant) and 3) exclusive to the culture studied.

Respecting of the rules of taxonomy also means that the limits of variability of a cultural assemblage are determined by the presence of the techno-typological criteria used to define the culture.

## Conclusion

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More than its implications for our knowledge of the Aurignacian peopling of Europe, the reconsideration of Level 11 from Bacho Kiro allowed us to point to the necessity of a methodological rethinking.

Distinguishing Aurignacian assemblages, within their limits of variability, cannot be limited to summing-up a list of techno-typological diagnostic forms. The whole lithic and osseous production (with, for the later, all the reservations needed) must be taken into account. For example, variants in the operating sequence can be cultural markers as good as the finished products resulting from such operating sequences. They have allowed to characterize regional features (Bon, 2000), as much as the Caminade endscrapers characterize the Aurignacian of the Dordogne river valley.

We can also face a few dangers if we try to use a chronological framework to establish cultural attributions. This is frequently done with parietal art, yet it is completely independent from the techno-typological criteria used to define the cultures, and thus it must find in other domains of human activity the necessary diagnostic elements. Some of the contributions in this symposium dealt with bone and ornament technologies; nevertheless, we will have to find the diagnostic criteria especially in the lithic production, because bone conservation can be somewhat problematic. Developing our analytic tools in the various domains of human activity will certainly allow us to isolate numerous facies, be they of a cultural, functional, regional, or chronological nature. Nonetheless, at the end, we still will have to argue as best as we can our hypothesis and our interpretations.

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