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Some clarifications on the Middle-Upper Paleolithic transition in Abric Romaní: Reply to Camps and Higham (2012)

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The Middle-Upper Paleolithic transition and the replacement of Neanderthals by modern humans are actively debated issues in current archaeological and paleoanthropological research. Central to the debate is the association between lithic technocomplexes and specific human populations. Traditionally, the different Aurignacian industries (especially the Protoaurignacian and the Typical Aurignacian) have been considered as a proxy for the presence of modern humans (e.g., Conard and Bolus, 2003; Bailey et al., 2009; Verna et al., 2012). In southern Europe, the emergence of modern humans is associated with Protoaurignacian assemblages, whose differentiation with respect to the Typical Aurignacian is increasingly clear from both the technological and typological point of view (Mellars, 2006). Instead, the Mousterian and Châtelperronian are associated with Neanderthal populations (e.g., Hublin et al., 1996; Mellars, 1996), although the relationship between Neanderthals and Châtelperronian has been questioned recently (Bar-Yosef and Bordes, 2010; Higham et al., 2010). Moreover, the Châtelperronian has been considered as evidence of a local evolution from the Mousterian substrate to the Upper Paleolithic technocomplexes, which would demonstrate Neanderthal capability for modern behavior (d'Errico et al., 1998). The correct cultural adscription of lithic assemblages is therefore especially important to reconstruct human population dynamics and the relations between different populations. This is especially clear in the case of Châtelperronian and Protoaurignacian, as their timing and geographic distribution is essential to resolve the debate on the coexistence and cultural influences between Neanderthals and modern humans. In this sense, the finding in the same assemblage of Protoaurignacian (e.g., Dufour bladelets) and Châtelperronian (e.g., Châtelperron points) artifacts is particularly relevant because it may indicate that either the two populations coexisted in the same territory or the replacement of Neanderthals by modern humans occurred in a very short period of time.

In some cases, the study of these issues has been based on the analysis of archaeological remains from ancient excavations. This is often controversial due to lack of data on the stratigraphic and spatial location of the artifacts and the excavation methods used in those times (e.g., Zilhão and d'Errico, 1999; Zilhão et al., 2006; Higham et al., 2011). In these assemblages, the presence of artifacts of different technocomplexes must be handled with special caution because it is usually very difficult to determine whether the composite character of the assemblage shows its original characteristics or corresponds to the artificial mixture of different assemblages due to the low stratigraphic resolution of the excavation method. In these contexts, the typological classification (and therefore the chronocultural adscription) of the artifacts should be particularly rigorous and must be justified by using appropriate forms of representation.

In the recent paper by Camps and Higham (2012) on the Middle-Upper Paleolithic transition at the Abric Romaní site (Capellades, Spain), the authors discuss the chronology and cultural characterization of levels A (Early Upper Paleolithic) and B (Late Middle Paleolithic). Camps and Higham's (2012) work cites radiometric dates that corroborate the temporal framework previously obtained and published in Bischoff et al. (1994), but it contains serious inaccuracies with regard to the characteristics of the archaeological record recovered in levels A and B. As directly involved in the current research at the Abric Romaní, we think that the Camps and Higham (2012) paper may give rise to great confusion among researchers engaged in the study of the Middle-Upper Paleolithic transition.

Since its discovery in 1909, the Abric Romaní has undergone various different periods of excavation. Amador Romaní, the discoverer of the site, undertook the first excavations between 1909 and 1911. Romaní excavated most of the upper levels of the sequence, including almost all of level A and a large part of level B (Bartrolí et al., 1995). Between 1956 and 1962, Eduard Ripoll conducted a second phase of research (de Lumley and Ripoll, 1962),

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during which he dug out a small remnant of level A, which was completely sterile (Laplace, 1962), and a small area of level B. Finally, current excavations began in 1983 under the direction of one of us (EC). When this most recent work began, level A had already been entirely excavated and its stratigraphic sections yielded only charcoal samples, whose dating was published in Bischoff et al. (1994). It was possible to excavate small areas of level B, although only a small amount of remains was recovered. Therefore, most of the archaeological remains of levels A and B (all of them in the case of level A) come from previous excavations. These old collections were divided primarily between two museums, the Museu-Molí Paperer of Capellades (MC) and Barcelona's Museu d'Arqueologia de Catalunya (MAC). The third collection cited by Camps and Higham (2012), the one kept at the Vilanova Museum, consists of only ten artifacts (Camps, 2006), representing a small part of the assemblage compared with the almost 1400 artifacts stored at the Capellades and Barcelona museums.

The statements made by Camps and Higham (2012) are at odds with results reported previously by other authors (de Lumley and Ripoll, 1962; Laplace, 1962; Soler, 1986; Vaquero, 1992). First, the number of retouched artifacts is strangely high considering the percentages most frequently documented in the Abric Romaní assemblages. In level B, tools represent more than 60% of the artifacts analyzed by Camps (2006), while in the work published by Vaquero (1992) they accounted for only 7%, which is consistent with the rates documented in the recently excavated Mousterian levels of the Abric Romaní. Moreover, all of the previously published work on the Middle Paleolithic of the Abric Romaní had highlighted the predominance of denticulates as the most relevant characteristic at all levels of the sequence, but according to Camps and Higham (2012) denticulates account for only 7.6% of the tools in level B, while sidescrapers are clearly dominant (71.8%). If this were the case, the lithic industry of the Abric Romaní would be closer to a Ferrassie-type Mousterian than a denticulate Mousterian. They also note the presence of nine endscrapers and a set of bladelets, another aspect that, as pointed out by Camps and Higham (2012: 91) themselves, "had never been previously noted by researchers".

Discrepancies with previous works are even more pronounced in the case of level A. First, it is important to stress the unusually high number of retouched tools (169) identified by Camps and Higham (2012), especially compared with the 44 published by Laplace (1962), the 28 documented by Soler (1986), and the 27 cited in Vaquero (1992). These differences can also be seen in the typological classification. Previous studies indicated that bladelets with semi-abrupt retouch (Dufour bladelets), together with the presence of a set of backed blades and points were the main features of the level A assemblage. In addition to these morphotypes, Camps and Higham (2012) suggest the presence of tool types that had never previously been identified in level A. Particularly striking among these is the presence of ten Châtelperron points, 19 atypical Châtelperron points, and a triangle considered by Camps and Higham (2012) as typical of Magdalenian assemblages. If this were in fact the case, these alleged Châtelperron points would be particularly significant, as they would imply that level A of the Abric Romaní represents one of the most important Châtelperronian assemblages on the Iberian Peninsula. The number of Châtelperron points would be much higher than that documented at well-known Châtelperronian assemblages like level IX of Labeko Koba (three Châtelperron points) and level 10 of Cueva Morin (seven Châtelperron points). If their data were accurate, level A of the Abric Romaní would contain more Châtelperron points even than level Ejop of Saint-Césaire (Soressi, 2011)! Despite this potential interest, none of these Châtelperron points found by the authors have ever appeared drawn or photographed, either in Camps and Higham (2012) or in Camps (2006).

Camps and Higham (2012: 92) point out that level A does not fit the "expected characteristics of Aurignacian assemblages in the Catalan region (abundance of carinated endscrapers, presence of ogival and nosed endscrapers, Aurignacian and strangulated blades, a high percentage of burins)". However, this argument makes no sense in the case of Romaní level A, since the characteristics listed by Camps and Higham (2012) are those of the Early or Typical Aurignacian and, since the first study conducted by Laplace (1962), level A has been always considered Protoaurignacian or Archaic Aurignacian. This technocomplex is fairly different from the Early Aurignacian. Protoaurignacian industries are largely based on the production of small bladelets from single-platform prismatic cores. The most distinctive artifacts are bladelets with semi-abrupt inverse retouch, such as Dufour bladelets and Font Yves points.

According to Camps and Higham (2012: 91), discrepancies with previous studies of level B can be explained by the fact that Ripoll and de Lumley (1964–1965) analyzed layers 4 to 9 as a group and Vaquero (1992) studied only the materials stored in the MC and "did not take into account the large group of pieces stored in Barcelona". However, even if Ripoll and de Lumley (1964–1965) presented together the artifacts from layers 4 to 8, their results are still inconsistent with those published by Camps and Higham (2012). For example, de Lumley and Ripoll (1962) found 32 sidescrapers in levels 4 to 8, but according to Camps (2006) there are more than one hundred sidescrapers only in level 4. That is, Camps (2006) identified three times more sidescrapers in only one archaeological level than de Lumley and Ripoll (1962) in three archaeological levels. It seems that sidescrapers are overrepresented in Camps' (2006) study. This inconsistency has never been explained by Camps and, as we will show below, is due to the inaccurate classification of unretouched flakes as sidescrapers.

Camps and Higham (2012) claim that their study is based on the complete collection of both levels, including materials stored at both the MC and the MAC. They may have studied artifacts from both collections, but they clearly have not studied the complete level B assemblage. While the assemblage analyzed by Camps (2006) consists of 230 artifacts, the study by Vaquero (1992), based exclusively on the MC collection, indicates the presence of 846 artifacts in level B. This suggests that Camps studied only a small part of the level B collection stored at the MC. In addition, the level B assemblage stored at the Barcelona museum is very small (only 39 artifacts from this collection were studied by Camps). It seems therefore unlikely that the inclusion of these artifacts can change the general picture obtained from the Capellades collection.

With regard to level A, it is true that previous studies by Soler (1986) and Vaquero (1992) included only the MC materials, but Laplace's (1962) study is based on the analysis of both collections. Camps and Higham (2012) do not explain the causes of the discrepancies between their study and Laplace's (1962). It is important to point out here that Laplace was a highly experienced analyst and did not identify any of the 29 Châtelperron points found by Camps and Higham (2012). In addition, Campillo et al. (1999) published a study of the entire Abric Romaní collection stored in the Barcelona Museum, including all of the artifacts from level A. They reported 461 lithics from this level and presented a technological study and a typological classification of the retouched artifacts. Their results are also clearly inconsistent with the Camps (2006) study, since they found only 13 retouched tools (Campillo et al., 1999).

In any case, the cause of the differences between the study by Camps and Higham (2012) and those of other researchers does not lie in the number of artifacts respectively studied. We have analyzed the complete collections of levels A and B stored at both the MC and in the MAC and we have concluded that the Camps and