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The use of quartz during the late Upper Palaeolithic of central Portugal

Cristina Gameiro[1], Thierry Aubry[2,1], Bárbara Costa[3], Sérgio Gomes[4], Luís Luís[2,1], Carmen Manzano[3], André Tomás Santos[2,1]

1 - UNIARQ, School of Arts and Humanities. University of Lisbon, Portugal · 2 - Fundação Côa Parque (Portugal) · 3 - Arqueologia & Património, Portugal · 4 - CEAACP - University of Coimbra, Portugal.

Quartz has traditionally been regarded as a raw material of lesser/poor knapping quality. Indeed, the structure of this mineral determines the presence of cleavage planes which generate fractures and influence débitage. The fact that it is naturally available in regions where there is no flint or silcrete, however, resulted in its frequent exploitation by the Palaeolithic human communities that inhabited the Portuguese territory. An outstanding example is the preferential use of this raw material for the production of marginally backed bladelets during the Protosolutrean of Estremadura [1]. Moreover, at sites located in the Hercynian massif (Guadiana, Sabor and Côa river valleys), several different varieties of quartz constitute the most widely used lithic raw materials during the Upper Palaeolithic [2,3,5]. Furthermore, at sites located in the Lusitanian basins (Estremadura and Algarve) and despite the availability of flint, quartz (along with quartzite) is always present in the Upper Palaeolithic lithic assemblages [2]. Considering the recurrent exploitation of quartz in different regions, its study is particularly relevant, enabling an inter-regional comparison that broadens our understanding of the cultural variability of Upper Palaeolithic communities.

The present research focuses on comparative data on the use of quartz in the Côa Valley (Fariseu and Cardina) and the Vouga Valley (Vau and Rôdo) sites. The work carried out since the identification, in 1995, of the first human occupation contemporaneous with the Côa Valley Palaeolithic engravings resulted in the accumulation of data on raw material procurement and on the production and use of lithic artefacts. As a result of the surveys carried out in this region, a number of different types of quartz could be sourced [3]. In 2014, as part of the Ribeiradio-Ermida river dam archaeological mitigation works, the first sites featuring Upper Palaeolithic occupations in the Vouga Valley were identified and excavated [5].

Furthermore, the lithic assemblages recovered from the Rôdo and Vau (Vouga) and Cardina and Fariseu (Côa) archaeological sites featured both free-hand/not supported and bipolar/supported on-anvil quartz cores. In the absence of cores, it is sometimes possible to recognize the application of these knapping strategies, based on the presence of characteristic flakes, fragments and chips. Assigning splintered pieces a use as cores or as tools is a problematic issue inherent to this type of assemblages [4].

Bipolar débitage on anvil, for the production of small flakes or chips, was used in these two regions since the Gravettian [2,3,5] and can still be found in Magdalenian and Azilian assemblages [4]. This strategy has been interpreted as an attempt at improving the profitability of raw materials; its use over a long period of time does not allow it to be used as a chronological indicator. The use of hyaline quartz crystals, using the natural planes of the crystals, for the production of bladelet blanks has also been documented in these two regions. Transformation of blanks, however, is still unclear because the available data only support comparisons between tools on flake, since the quartz armatures recovered at the Vouga sites are quite rare.

The volume of data on the two areas being compared is uneven and we have little information on the technical tradition and functionality of the Vouga sites. There is, however, enough information to compare and identify, in these archaeological sites located in two different regions, the same conceptual scheme inherent to the chaîne opératoire applied to the different types of quartz.

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