

## **The management of symbolic raw materials in the late Upper Palaeolithic of South-Western France: a shell ornaments perspective**

The Rigaud *et alii* paper, is a very interesting contribution to the study of Magdalenian ornament from SW France. It provides new data and analyses that will undoubtedly contribute to a better understanding of this type of material. The unusual fact of finding a huge number of unperforated pieces gives it a specific relevance that suggest new interpretations, as well as the fact that it focuses on the mode of acquisition of this raw material.

The following are some minor issues that could be considered when publishing this paper.

Title and abstract, both are correct, clearly describing the content and objectives of the article. In the Keyword, I will suggest adding a term referring to symbolism, since the important symbolic contribution of this set is highlighted, as well as the term social network, the main subject of the work.

From introduction, the works cited in this section do not include Whallon (2006), which the authors mention at the end of the paper, as refer to the relationship between ornament and mobility.

The methodology is correct and adequate. In this section on microscope analysis, a detailed list of experimental work is given. Maybe the paper of Avezuela et al (2011), which presents a detailed experimentation on the gastropod *Littorina obtusata*, could also be taken into account.

Regarding *Tritia gibbosula*, we can note as on the French Mediterranean coast, in southern Europe it is also present in the Gravettian levels of Cova Beneito (Muro, Alicante)(Soler, 2019) and in Solutrean and Magdalenian levels of Cova del Parpalló (Gandia, Valencia) (Soler, 2015 and Soler y Aura, e.p.). Further east, in Croatia, it appears in Palaeolithic and Mesolithic levels of Vela Spila site (Boric and Cristini, 2018), evidence for long-term regional and diachronic differences and similarities in types of body adornment among foragers of the European area.

Table 2 shows the list of pieces from the three studies carried out at different times in level II of this site. We note that Taborin (1992) describes at least 3 species that do not appear in the current study.

From morphometric, technological and use-wear analysis we would note the accurate work do in this part, especially in the perforation's description. The Kubicka (2017) paper could help in the study to discriminate predation holes because it is a review of animal predation perforations and their implications for the archaeological record that may provide some more concrete input to this work.

Regarding the use of ochre, it's only mentioned in a *Glycimeris* described as a container. None of the ochre shells show traces of dye? It is quite common that when traces of dye appear, they do not appear on a single piece. In case there are no traces of dye in any of the other pieces, we consider that this should be mentioned. It will be interesting to know the composition and origin of this ochre.

In line 339 it is said that in 213 remains, no anthropogenic action can be determinate due it post-depositional alterations. If they are so important, perhaps they should be described in detail. It would be useful to have this information in an annex.

From discussion

The authors propose us two hypotheses to the raw material Rochefield accumulation, but more hypotheses are possible; we do not know what the ultimate meaning of these pieces is. The second hypothesis is clearly unacceptable because of the support proves to be adequate in on other perforated pieces.

From conclusions, in line 652 the quotation from White, 1997 does not appear in the final bibliography.

Finally, it is remarkable the attention paid to the procurement strategies of these objects. Nevertheless, we would need more evidences to know that Rochereil is a central place in the manufacturing process, control and diffusion of these pieces throughout the area. Also the number of *Tritia* unperforated is remarkable, considering the number of pieces of that size that we needed for a single necklace, a cap or a garment, the interpretation of storage for the whole area is, at the very least, an idea for discussion. Examples of the need for hundreds of beads to make a single object or to apply them to clothing can be found in burials, where the pieces are brought in their context of use; for example the burial of Sungir, with more than 5000 pieces, or the hundreds of pieces found in the skull of the young man discovered at the site of Arene Candide. In short, it cannot be ruled out that they could be, for example, elements designs for a single necklace.

The proposal of the term embedded catching to explain a specific aspect of mobility is interesting to talk about connected societies based on movement and information exchange. The work of Romano, Lozano and Fernández-López de Pablo, 2021 is an interesting work on the reconstruction of prehistoric social networks and cultural transmission. The Rochefiel data suggest such interaction and exchange, although we certainly would not hypothesize the number of undrilled pieces as an accumulation and control of subsequent distribution as the only possible hypothesis.

The consideration of Rochefield as an aggregation site, as Conkey described, need more justification, the record of this site is not comparable to Isturitz or Altamira.

The bibliography used is ample and correct; we have already mentioned some citation that would be good to incorporate.

In sum, this manuscript is a welcome contribution to the knowledge of the record of Magdalenian SW France and analysis of shell ornaments data.