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Ornaments from the Magdalenian burial area in El Mirón Cave (Cantabria, northern Spain). Were they grave goods?

Igor Gutiérrez-Zugasti [a, *], David Cuenca-Solana [b]

[a] Instituto Internacional de Investigaciones Prehistóricas de Cantabria, Universidad de Cantabria, Avda. de los Castros s/n, 39005 Santander, Spain
[b] Centre de Recherche en Archéologie Archéosciences Histoire, UMR 6566, CNRS, Université de Rennes I, Campus Beaulieu, Bât. 24-25, Ave.du Général Leclerc, CS74205, 35042 Rennes Cedex, France

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ABSTRACT

El Mirón Cave, located in northern Atlantic Iberia, has produced important evidence of human occupation during the Lower Magdalenian (19–17.5 cal kya). Among the finds dating to this period is that of a disturbed primary burial of an adult woman. The excavation of the small area around the burial yielded a considerable number of ornamental items (mainly shell beads), but the actual association of any of them with the interment is problematic. The results of our study of the perforated marine shells and mammal teeth suggest that the ornamental objects were not grave goods, but rather were simply artifacts present in the occupation layers in this part of the cave. The materials used to make ornaments were gathered by collecting shells along the Late Glacial shore and by hunting ungulates. The perforation techniques used were similar to those found at contemporary sites in the Franco-Cantabrian region and the appearance of various elements from the manufacturing operatory chain indicates that some of the ornaments were made at the site. It was also possible to determine that some of the shells were used—probably suspended or attached to other objects. From a functional standpoint, the ornaments probably played not only an aesthetic role, but also a symbolic one, facilitating communication and exchanges among human groups.

1. Introduction

In recent years, a new explanatory model has stressed the importance of marine resources among human populations of the Middle and Upper Paleolithic (Bailey and Flemming, 2008; Bicho and Haws, 2008; see also Straus and Clark, 1986). This model is derived from evidence that has been recovered from many sites (among other places) along the Atlantic and Mediterranean shores and contrasts with the traditional view that these resources had only become important in the Late Glacial (Colonese et al., 2011; Gutiérrez-Zugasti et al., 2011). Among the marine resources used by humans were mollusks that had various uses– not only for food and tools (e.g. Bailey and Craighead, 2003; Cuenca-Solana, 2014), but also for symbolic and ideological purposes as ornaments (Álvarez Fernández, 2006; Taborin, 1993).

Marine shells have been used as ornaments by humans since at least about 80 kya, as attested in Grotte des Pigeons (Morocco) (Bouzouggar et al., 2007) and Blombos Cave (South Africa) (d'Errico et al., 2005). The appearance of ornamental use of shells has been related with the development of greater capacity on the part of anatomically modern humans for expressive behavior relative to earlier hominins, and the evidence currently suggests that this first happened in Africa. This led to some scholars to defend the idea that the use of objects of symbolic character in Western Eurasia dated to the beginnings of the Upper Paleolithic (ca. 40 cal kya) (Álvarez Fernández and Jöris, 2008). However, current evidence is challenging this statement showing examples of possible symbolic behavior on the part of Neandertal populations in Europe (e.g. García-Díez et al., 2013; Morin and Laroulandie, 2012; Peresani et al., 2011, 2013; Rodríguez-Vidal et al., 2014; Zilhão et al., 2010), and contributing to the current debate on the relative capacities of Neandertals and *H. sapiens sapiens* (e.g., Caron et al., 2011; Mellars, 2010; Rendu et al., 2014; Soressi et al., 2013; Zilhão, 2007; Zilhão and d'Errico, 1999).

During the Upper Paleolithic shells, along with other materials—especially bones and teeth of animals (mammals, fish and

* Corresponding author.
E-mail addresses: igorgutierrez.zug@gmail.com (I. Gutiérrez-Zugasti), david.cuencasolana@gmail.com (D. Cuenca-Solana).

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birds), antler, ivory, and minerals were commonly used for the fabrication of ornaments (Álvarez Fernández, 2006). The use of these elements was related to the symbolic world of hunter-gatherer groups. Shell beads in particular have been defined as objects that identified human groups (Kuhn et al., 2001; Stiner, 1999, 2003), social status (Vanhaeren and d'Errico, 2005), social and personal identities (White, 2007), and even ethno-linguistic groups (Vanhaeren and d'Errico, 2006).

El Mirón Cave, located in the northern Atlantic zone of the Iberian Peninsula, has produced significant evidence of human occupations during the Lower Magdalenian (19–17.5 cal kya). In addition to rich residential deposits, the excavations uncovered the disturbed, but substantially complete burial of an adult woman that is described in all its aspects in this special issue of *JAS* (Straus and González Morales, 2015). This find is the first of its kind on the Iberian Peninsula and one of the very few ever to be discovered in Western Europe (Orschiedt, 2013). The excavation of the area where the burial was located yielded a considerable number of ornamental elements (mostly shell beads), but their actual association with the interment is not clear. Generally, personal ornaments appear in differentiated contexts during the Upper Paleolithic: habitation areas and funerary areas. In the former they are usually dispersed and found together with remains of subsistence activities (e.g. Tátá et al., 2014) or in shell deposits that may or may not be associated with hearths (Álvarez Fernández, 2006; Gutiérrez-Zugasti et al., 2013), while in funerary contexts they are found in close physical association with the human remains (e.g., in St.-Germain-la-Rivière [see Vanhaeren and d'Errico, 2005]).

It is fundamental to obtain information on the acquisition, transformation and use of ornaments by Upper Paleolithic forager groups in order to understand their symbolic world. Together with the technological activity related to ornament manufacture is their symbolic function, and the study of both aspects provides a more complete vision of the social relations that existed among such groups. The principal objectives of this article are to 1) determine whether the ornamental objects found in El Mirón Cave had any actual relationship with the Magdalenian burial or rather simply with the habitation layers into which the grave had been dug at the rear of the cave vestibule, and 2) establish the technical, functional and possible social characteristics of the identified ornaments. To do this, we analyzed the species represented in the whole shell assemblage and their characteristics, the taphonomic alterations that the shells had undergone, and the attributes of the perforated elements, their spatial distribution and morphometrics.

2. El Mirón Cave and the Magdalenian burial

El Mirón Cave is located at about 255 m above present sea level in the middle valley of the Asón River, in the central sector of the Cantabrian region of Spain (Fig. 1). The large cave mouth faces West and dominates the Asón valley at its confluence with the Calera and Gándara rivers from the steep side of Mount Pando. The site is about 20 km from the present shore of the Bay of Biscay at the mouth of the Asón, and would have been some 25–30 km from the shore during the Oldest Dryas, at the time of the Lower Magdalenian. The site was excavated by teams directed by Lawrence G. Straus and Manuel R. González Morales between 1996 and 2013. It contains a very long cultural sequence, with especially impressive occupation levels pertaining to the Cantabrian Lower Magdalenian. The excavations of these levels were conducted in the outer vestibule (Cabin area) and vestibule rear (Corral area), connected by the Mid-Vestibule Trench (González Morales and Straus, 2009; Straus and González Morales, 2012).

The disturbed but primary human burial was excavated between 2010 and 2013 at the rear of the vestibule in a narrow area separated from the Corral area and the cave wall by a large engraved and ochre-stained block (Fig. 1). It is the first substantially complete Magdalenian burial to be found on the Iberian Peninsula. In this area, parts of meter-squares X5-7 and Y5-7 were dug (see Straus and González Morales, 2015, for a detailed discussion of the excavation, stratigraphy and radiocarbon chronology). Levels 501 and 502, although they yielded artifacts of clear Magdalenian attribution (including an antler harpoon barb in 502), were disturbed in recent times (probably by shepherds), as they contained modern artifacts such as shards of glass. The rest of the layers in the area were intact, beside the existence of the pit that had been dug in Lower Magdalenian times for the interment of the corpse. The human remains were mainly associated with intensely red ochre-stained Level 504 (dated to 18.9–18.7 cal kya) in square X7, subsquares B + D and adjacent subsquares. However, the rest of the area dug between the engraved block and the rear cave vestibule wall contained human habitation deposits that evidenced subsistence and flint-knapping activities (see articles respectively on mammalian fauna and artifacts by Marín-Arroyo and Geiling and by Fontes et al., 2015). The skeleton, corresponding to an adult woman (see Carretero et al., 2015), was deposited during the formation of Level 504 in a pit that affected both that layer and underlying Level 505 (c. 18.9 cal kya). According to the taphonomic study of the human remains, the corpse would have been laid down in flexed, lateral position in a small pit dug into the sediments. After it had become skeletonized, it was slightly disturbed by a carnivore and finally certain large bones (including the cranium) were apparently removed by humans for transport to another (unknown) location, while the carnivore-gnawed tibia, mandible and several smaller bones were (re-)stained with ochre and reburied (Marín-Arroyo, 2015).

3. Materials and methods

The materials analyzed here were recovered during the excavation campaigns of 2010, 2011 and 2013 and come from levels 502, 503, 504, 505 and 506 in squares X5-7 and Y5-7. The marine mollusks and other aquatic organisms (e.g., sea urchins) were taxonomically identified using specialized manuals (Poppe and Goto, 1991, 1993) and the comparative collection of one of the authors (IGZ). In terms of systematics, we used the nomenclature proposed by the World Register of Marine Species (WORMS) for marine mollusks (http://www.marinespecies.org/aphia.php?p=taxdetails&id=140293). The few perforated mammal teeth were anatomically and taxonomically identified with the help of the reference collection of the Bioarchaeology lab at the IIIPC (Cantabria, Spain). With respect to measures of abundance, we calculated absolute frequencies by Numbers of Identified Specimens (NISP) and Minimum Numbers of Individuals (MNI). To obtain the MNI for shells we used a method based on the creation of categories of levels of fragmentation, developed from patterns of mollusk disarticulation (Gutiérrez Zugasti, 2011a; Moreno, 1994). Given the small number of ornamental objects that were piece-plotted with 3-dimensional coordinates during the excavation, the spatial distribution of the ornaments was analyzed using the subsquare (50 × 50 cm) information of each find.

The complete teeth and shells, as well as the substantial shell fragments used in the MNI calculations were examined for taphonomic alterations. The shells were observed with a Leica S8 APO binocular microscope. In order to evaluate the state of conservation, each shell was inspected using the method proposed by Yanes et al. (2012), with some modifications. The taphonomic descriptors used in the analysis were carbonate coating, manganese staining, biodegradation (loss of proteins), burning, color loss and ornamentation loss. The taphonomic study was conducted using three