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Additional Information

**Humanizing European Palaeolithic art: A new visual evidence of human/bird interactions at L'Hort de la Boquera site (Margalef del Montsant, Tarragona, Spain).**

Humanisation dans l'art paléolithique européen: nouvelles preuves visuelles des interactions hommes/oiseaux à L'Hort de la Boquera (Margalef, Tarragone, Espagne)

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**Abstract:**

This paper reports the discovery of a new example of portable art in North-eastern Iberia dating to the Late Upper Palaeolithic (12.250 +/- 60 BP). The piece is analysed in relation to the European Palaeolithic art assemblage to determine its significance and how it contributes to our understandings of Palaeolithic artistic practices. Both the motifs depicted (birds and humans) and the patterns of composition (a narrative scene) are unusual in Palaeolithic assemblages. In addition, this new find contributes to filling a geographic gap in the artistic record as evidence of Palaeolithic art is rare in Catalonia. The anatomical features of one of the birds suggest that it is a crane, a species that has been depicted in a limited number of sites, as summarized in this paper. Moreover, there are only three known example of birds and humans interacting in a narrative scene in Palaeolithic art. Exhibiting innovations in media, subject matter and compositional norms, this new find has the potential to change the classic definition of European Upper Palaeolithic art and integrate the region in the artistic trends circulating along Mediterranean Iberia during the Upper Magdalenian.

**Keywords:** Palaeolithic art; Portable art; Late Upper Magdalenian; Crane; Anthropomorphic figures; Scenes.

**Mots clés :** Art Paléolithique; Art mobilier; Magdalénien supérieur final; Grue; Figures anthropomorphes; Scènes

## **1. Introduction**

A new discovery at the L'Hort de la Boquera Late Upper Palaeolithic site challenges our understandings of European Palaeolithic art. The new sample of portable art presents innovations in media, subject matter and compositional norms. The 2011 fieldwork campaign at this site provided a surprising archaeological find after 14 years of continuous excavations: the first and so far only piece of portable art from the site and one of the few examples unearthed in North-eastern Iberia (Fullola et al., 2015; García-Diez and Vaquero, 2015, 2006; García-Diez, 2004). The find includes five engraved motifs. The interpretation of one of them as a quite naturalistic bird and another as a human is secure when compared to other European Palaeolithic depictions of similar subject matter (Cremades, 1994; Cremades et al., 1997; Duhard, 1996). However, the remaining figures are simplified and their identification requires the analysis of previous representations of scenes in Palaeolithic art and the ethology of species represented. The identification of the bird species as a crane is based on biological similarities between the motif engraved and the living specimens of this species (Peterson et al., 1967; Meine and Archibald, 1996), as well as in a comparison with previous representations identified as cranes in European Palaeolithic art (Cremades, 1997; Cremades et al., 1997; Simonnet, 1947; Capitan et al., 1909). The originality of the new piece rests not only on the unusual motifs engraved, birds and anthropomorphic figures, but also in their patterns of association. The motifs integrate a very neat narrative scene lacking the tangle of strokes that characterise a significant number of portable Palaeolithic artworks. This paper analyses this single example of portable art and the archaeological context in which it was recovered. It also assesses the significance of this find in terms of both the regional and global contexts of European Palaeolithic art, where representations of birds (Cremades, 1994; Nicolau-Guillaumet, 2008), humans (Duhard, 1996) and narrative scenes are unusual. The new discovery provides a well contextualized example of Late Upper Magdalenian art and enriches the meagre record of European Palaeolithic art in North-eastern Iberia and more broadly.

## **2. The archaeological context.**

L'Hort de la Boquera site is located in Margalef de Montsant (Tarragona, Spain) (Fig. 1), at 384 m a.s.l. and only 34 km away from the current coastline. Montsant massif,

with an altitude of 1000 m, separates it from the sea. The site appears in a 9 m long rock shelter. The original conglomerate overhang was partially destroyed by a combination of heat and natural disaggregation (fragments of conglomerate are visible in the final stages of level II), leaving part of the deposits uncovered. The site was discovered in 1979 during an archaeological survey (García-Argüelles et al., 2014). The chronology has been slowly clarified through an initial trial excavation of a trench (Fullola, 1978), subsequent research projects (García-Argüelles, 1983; Bergadà, 1998) and, since 1998, an uninterrupted open-area excavation exposing 22 m<sup>2</sup> (García-Argüelles et al., 2014). It preserves four stratigraphic levels with a unique archaeological deposit (Level II) resulting from several human occupations related to a single cultural entity. This level includes two hearths and several knapping areas. Several radiocarbon dates place the site in the Late Upper Magdalenian (dates on charcoal: OxA- 13595: 12.250 +/- 60 BP, OxA-23646: 11.850 +/- 45 BP and OxA-23645: 11.775 +/- 45 BP, which calibrated become 14.350 +/- 230 cal BP, 13.710 +/- 70 cal BP and 13.670 +/- 60 cal BP). This dating is also supported by the characteristics of the lithic assemblage (García-Argüelles et al., 2014). From an economic point of view the site fits well within the Late Upper Magdalenian sites located in areas of rough topography, and focusing on Spanish Ibex (*Capra pyrenaica*) hunting, with scarce remains of rabbits and no evidence of birds. These sites differ from those located in lower hills that focus on deer hunting (Fullola et al., 2012). The art piece under study was discovered when digging grid square E8, corresponding to the earliest occupation of the site (in clear association with radiocarbon date 12.250 +/- 60 BP) (Fig. 2). The piece was almost in contact with the back wall of the rock shelter. It was completely covered in mud with the decorated surface facing down.

In 2013, similar stones were found in the adjacent grid square D8, but none of them contained engravings. The potential function of this intentional accumulation of rocks is unknown. Nevertheless, the piece under discussion is closely related to a domestic occupation. Thus, it cannot be described, or not exclusively, as a space of worship. Other remains potentially related to the artistic sphere include a slate plate with traces of red colour, some functional surface striations and two flat slate pebbles with engraved lines. None of them are spatially related to the engraved block. They were recovered at the eastern side of the site in relation to the most recent occupation layer.



Fig. 1. Site location. Satellite photo and map of the Institut Cartogràfic i Geològic de Catalunya (<http://www.icgc.cat/>) with labels by the authors. Photograph by P. García-Argüelles. Localisation du site. Photo satellite et carte de l'Institut Cartographique et Géologique de Catalogne (<http://www.icgc.cat/>) avec les étiquettes des auteurs. Photos de P. García-Argüelles.

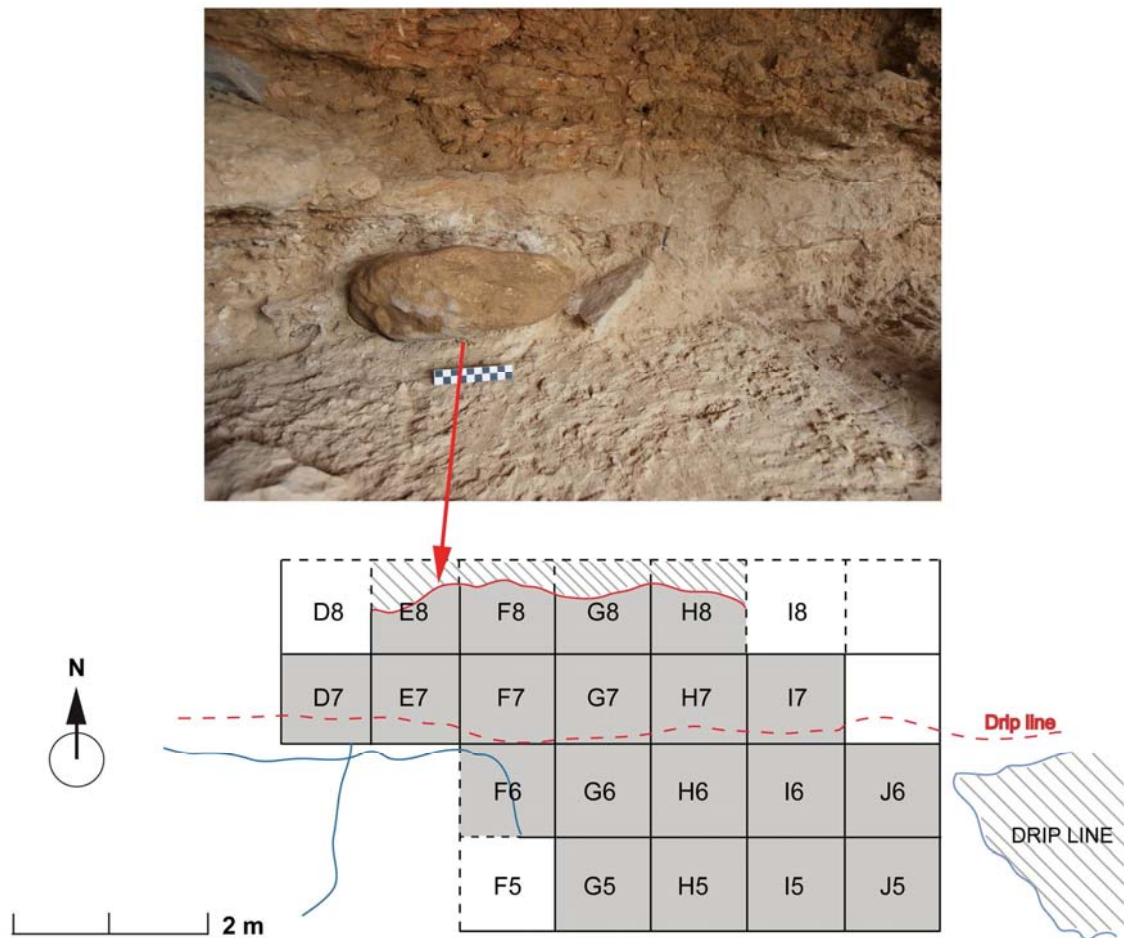


Fig. 2. Site plan indicating the location of the artwork, and photograph illustrating the position at the time of discovery. Plan du site indiquant l'emplacement du bloc gravé et photographie montrant sa position au moment de sa découverte.

### 3. Description and analysis of the artwork

#### 3.1. Digital recording method

To produce a reliable and metrically accurate reproduction of this artwork, a combination of 2D and 3D digital recording techniques were used, following previous work (Domingo et al., 2013). For the 3D reconstruction, the remote sensing recording technique selected was close-range photogrammetry due to its flexibility in reconstructing 3D objects from different scales, the high accuracy of the results and the production of fast deliverables and low-cost solutions. After the photogrammetric performance, the following deliverables were obtained: high-resolution point clouds of the carved stone (Fig. 3a) from which subsequent 3D and 2D products were generated; a low-resolution 3D model of the whole stone (Fig. 3b); a high-resolution 3D model of the area with engravings (standalone) (Fig. 3c); contour lines: ortho-image mosaics of

the artwork at different spatial resolutions, 10 microns (0.010 mm) for the close up areas with engravings and 0.100 mm for the rest (Fig. 4b); cross-sections; and a photorealistic 3D model with digital tracings superimposed (Fig. 8). A Canon 1Ds Mark III with two lenses, 24 mm and 50 mm, was used for data acquisition. The first lens was used to deliver the general (low-resolution) data on the overall stone and the latter for high-resolution deliverables. No additional device was used for the acquisition except for a calibrated ruler, a color chart and targets surrounding the stone. The 2D and 3D recording deliverables follow an adaptation of the photogrammetric workflow presented in previous publications (Lerma et al., 2014).

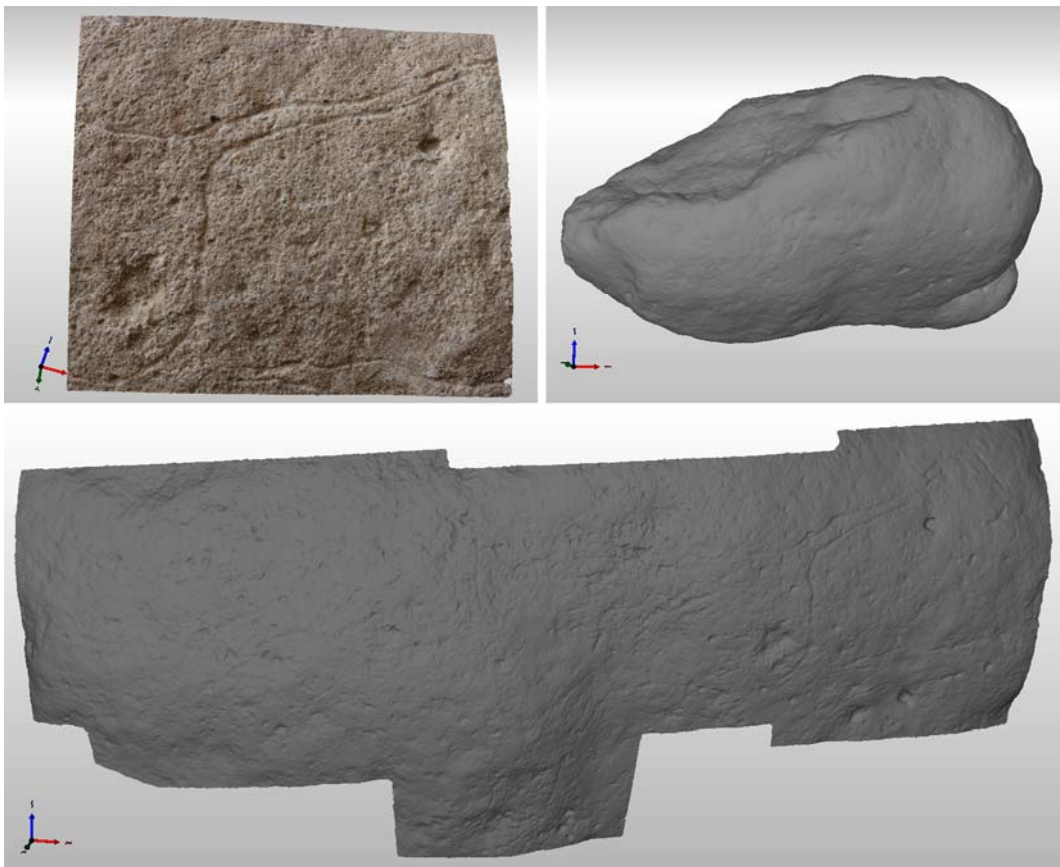


Fig. 3. 3D digital recording of the artwork: a): detail of the high-resolution point cloud; b): low-resolution 3D model; c): high-resolution 3D model. Enregistrement numérique 3D du bloc gravé: a): détail du nuage de points haute résolution; b): modèle 3D basse résolution; c): modèle 3D haute résolution

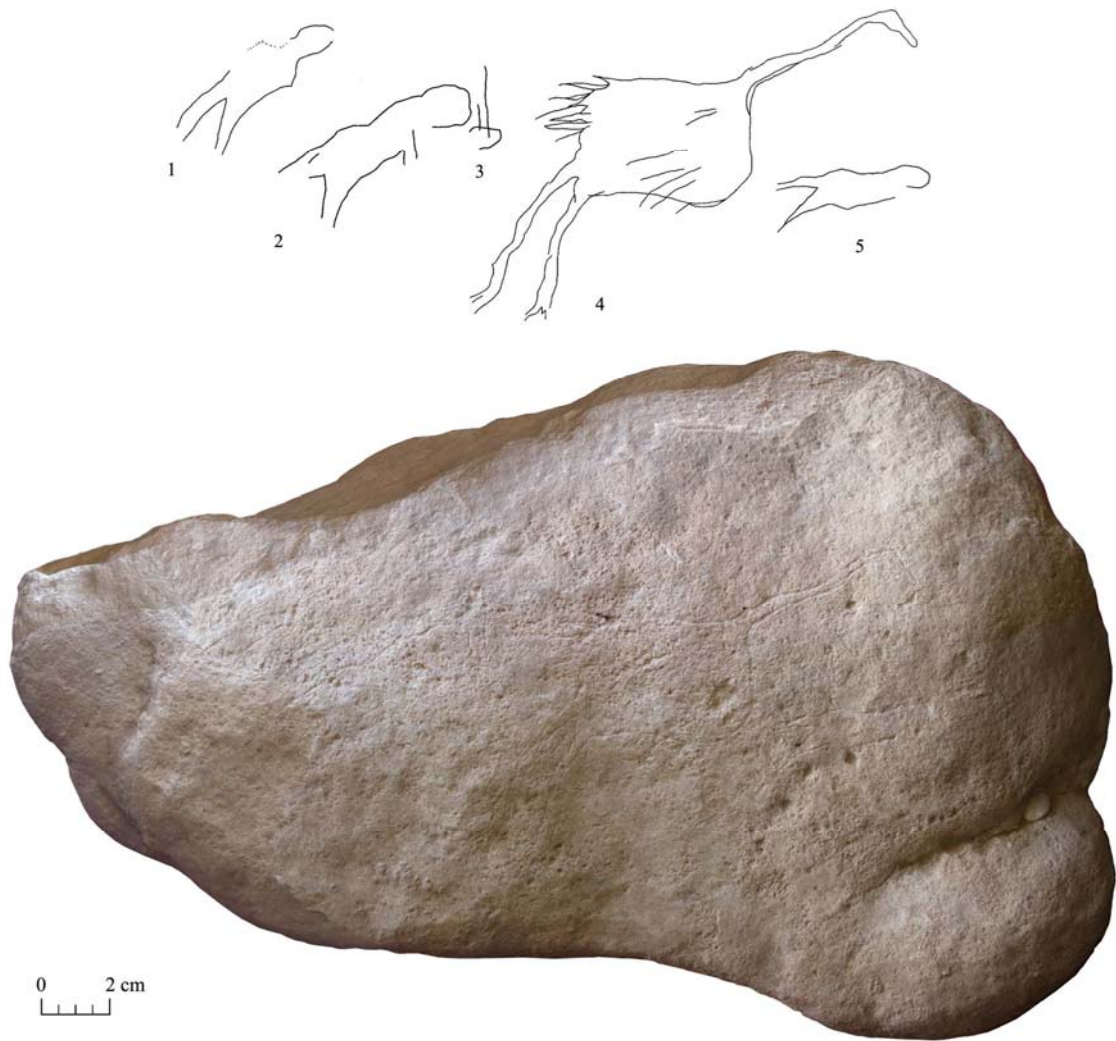


Fig. 4. Digital recording of the engraved bloque. Digital 2D drawing of the motifs and ortho-image mosaic. Enregistrement numérique du bloque gravé. Dessin numérique 2D des motifs et de la mosaïque d'ortho-images.

### 3.2. Description of the piece

The piece under study includes several figurative motifs finely engraved on a limestone rock of irregular shape and rounded edges. The rock measures 30.9 x 20.7 cm in maximum dimension, and 17 cm of thickness (Fig. 4). The round edges are all natural, suggesting a fluvial origin for the rock. These features fit well with the location of the site, on a fluvial terrace containing similar limestone rocks. This suggests that local raw material was sourced to make the artwork. The rock has triangular shape in cross-section and three main surfaces, with only one bearing engravings and the other two being un-retouched. There is no evidence of the intentional pre-treatment or



fragmentation of the rock prior to engraving. While the engraved motifs are visible to the naked eye, the use of oblique light significantly improves viewing. Four of the five motifs are facing right, in a well-ordered linear composition using the entire space of the decorated surface. The motifs are evenly spaced, avoiding overlaps and resulting in a neat composition. This contrasts with other examples of similar age, in which overlapping motifs and strokes hinder interpretations. Engraving is the only technique used on this piece. Single and sporadically repeated strokes were used to reproduce the silhouettes of the motifs in profile, while ignoring the secondary anatomy (such as eyes, etc.). The incised strokes are mostly flowing and continuous, although several intersections are visible in the outline (especially in Fig. 4). This technical homogeneity, together with the clean and well-organized structure of the composition, suggests a unique phase of artistic activity. The inventory of motifs includes:

- motif 1 (Fig. 5). Unidentified biped motif in right profile. The motif is leaning forward to the right towards the other motifs in the panel. This simplified representation only reproduces an outline, which is slightly eroded at the top left. An oval shape represents the head with no facial details. It is well differentiated from the body through the insinuation of the neck. From there, the contour lines, almost lost on the left side, widen again to indicate the start of the upper limbs, only partially depicted adopting a triangular shape. Such a shape could be interpreted as either a simplified human limb (as in the wounded humans of Pech-Merle or Cougnac) (Fig. 6) or a wing. Parallel lines sketch the lower limbs opened in an inverted “v”. The feet or any flexing of the limbs are not depicted. Bipedalism is one of the distinctive features of anthropomorphic figures in Palaeolithic art, though it is not unique to humans but shared with birds. Thus, to interpret this motif as either an anthropomorphic figure or a chick it is necessary to closely analyse the graphic context;

- motif 2 (Fig. 5). Unsexed anthropomorphic figure leaning to the right. Globular head in right profile with a slight suggestion of nasal and chin prominences. Both characteristics are considered as diagnostic signs of humanity (Duhard, 1996). The modelling dorso-lumbar line suggests the spinal curvature distinctive of humans when viewed from the side, while the neck (cervical) and the low back (lumbar) regions show the characteristic concave curve. Only one arm has been partially sketched. It is extended forward in the typical posture of other Palaeolithic anthropomorphs. Opened parallel lines, with no flexing of the limbs or representation of feet, seem to represent

open scissors legs. No hands or internal details have been depicted. The analogue stance to other simplified and incomplete Palaeolithic anthropomorphs (such as the wounded humans from Cougnac or the anthropomorphs of Saint-Cirq or Combarelles) (Fig. 6) support interpretation of this motif as a simplified human;

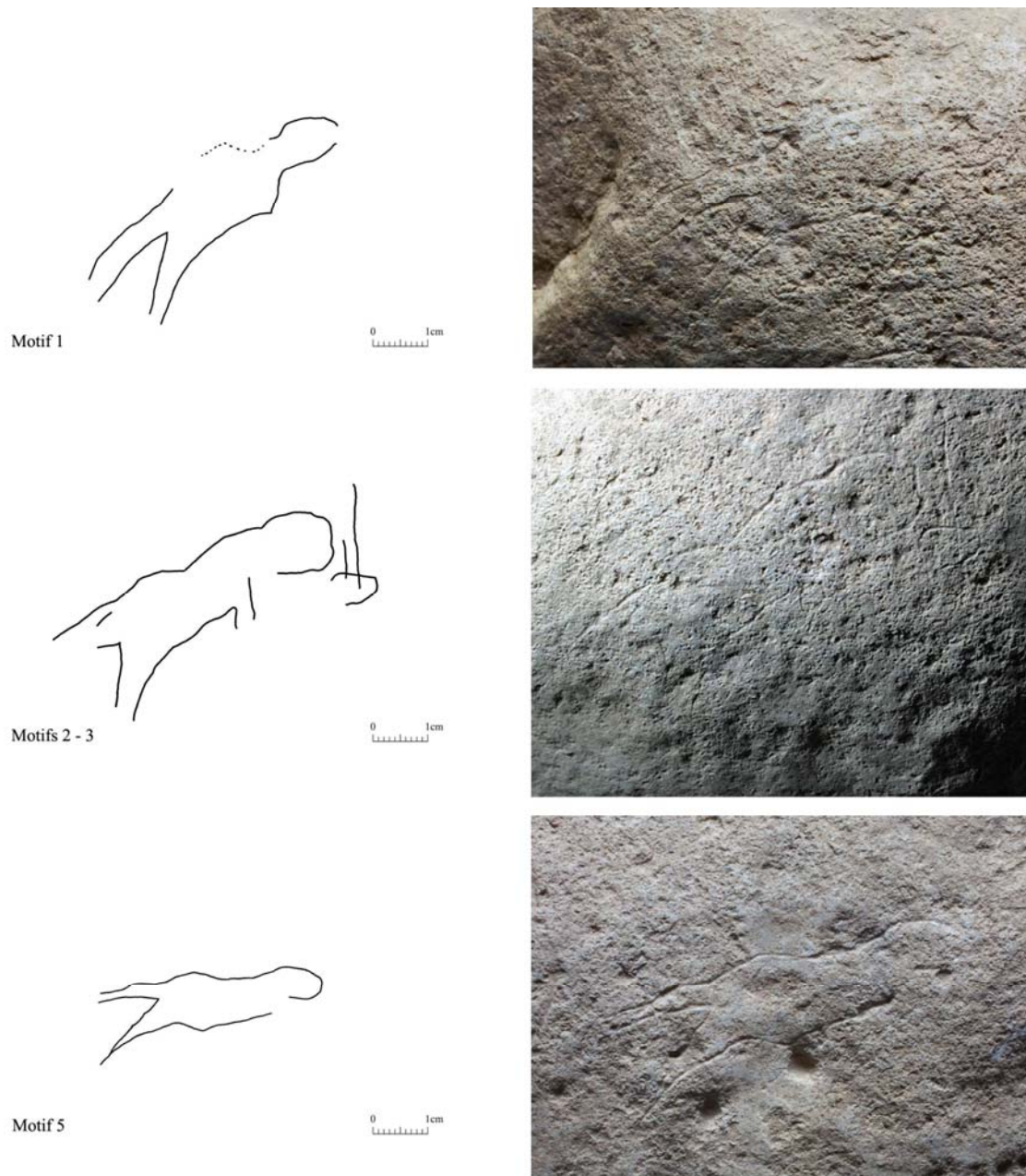


Fig. 5. Digital drawings to scale and close up photographs of motifs 1, 2, 3 and 5 to scale. Dessins numériques à l'échelle et photographies de détail des motifs 1, 2, 3 et 5 à l'échelle.

- motif 3 (Fig. 5). Unidentified motif. Open oval with similar shape and size to the head of motifs 1 and 5. It is partially traversed by two uneven parallel lines. It could be either

a discarded sketch of a figure, a sign or even a weapon related to anthropomorphic motif 2;

- motif 4 (Fig. 7). Naturalistic and complete representation of a large bird facing right. The head, with a projecting mandible representing a beak, is disproportionately small compared to the body. This motif lacks internal details such as an eye, or any sort of plumage that might signify eyebrows or whiskers. The elongated thin neck shows a slightly S-shaped curve. This particular shape has been previously observed in other representations of birds and has been interpreted as depicting a dead animal (Jimenez et al., 2011). However, this shape is in fact characteristic of some species when viewed from the side. The legs adopt a non-naturalistic, almost rigid, position. While most birds stand and walk with the thighs nearly horizontal, they generally swing the legs from the knees while their anterior toes are directed forward. But in this specimen both legs are nearly parallel, even from the knees, and the toes are directed downwards on the front leg and backwards on the back leg. This unrealistic posture may be due to the limited realism of the drawing, a deliberate aim to depict a dead animal or it may be distorted for an unknown reason. The massive rounded body includes anatomical details such as the tail feathers, as well as several slightly curved internal lines that appear to represent plumage. In contrast, the wings have not been explicitly depicted. The legs are slightly more naturalistic than in the surrounding figures, since they are complete. They include a slight bend of the ankle joint and an unrealistic representation of the toes. From a technical point of view, the dorso-lumbar line is continuous and has been produced with a single stroke, while the neck and the breast and belly line show the juxtaposition of several strokes, correcting the path at various points (the anterior part of the neck, the neck and chest joint, the belly and the belly and legs joint). In the area corresponding to the breast, an intentional hollow produced by impact could be suggesting that the animal had been hunted (whether for culinary motives, the feathers or other symbolic purposes), and not just being observed or revered. A comparison of the anatomical features of this figure with biological criteria along with finds from other Palaeolithic sites (Cremades et al., 1997; Jimenez et al., 2011), discussed below, suggests that this bird belongs to the family of cranes;

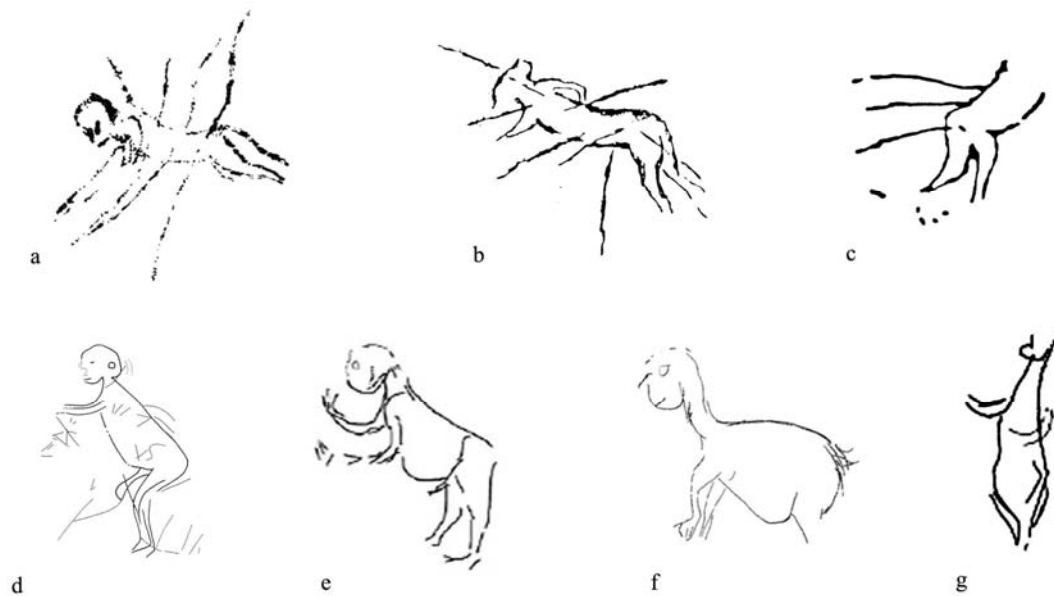


Fig. 6. Representations of humans in Palaeolithic art: a): Pech-Merle (Lorblanchet, 1984); b): Cougnac (according to Lorblanchet in Duhard, 1996); c): Cougnac (Duhard, 1996); d): Saint-Cirq (Delluc and Delluc, 1982); e–f): Combarelles (Archambeau and Archambeau, 1991); g): Molí del Salt (García-Diez, 2004). Figurations humaines dans l’art paléolithique : a): Pech-Merle (Lorblanchet, 1984) ; b) : Cougnac (d’après Lorblanchet in Duhard, 1996) ; c): Cougnac (Duhard, 1996) ; d): Saint-Cirq (Delluc et Delluc, 1982) ; e–f): Combarelles (Archambeau and Archambeau, 1991) ; g): Molí del Salt (García-Diez, 2004).

- motif 5 (Fig. 5). Unidentified biped motif. Repeating the posture of other motifs this figure is also leaning to the right, although this time almost reaching the horizontal. The shapes of the head and lower limbs are similar to those of figure one, but with no evidence of upper limbs. The lower limbs also are depicted in an open scissors posture. As with figure one, the interpretation of this motif as either a human or a chick is complex and has to take into account the graphic context. While the general shape is quite similar to Fig. 1, the lack of arms, the excessive forward leaning and, particularly, the location of this beneath the bird 4 suggests that this motif is a young bird rather than a human.

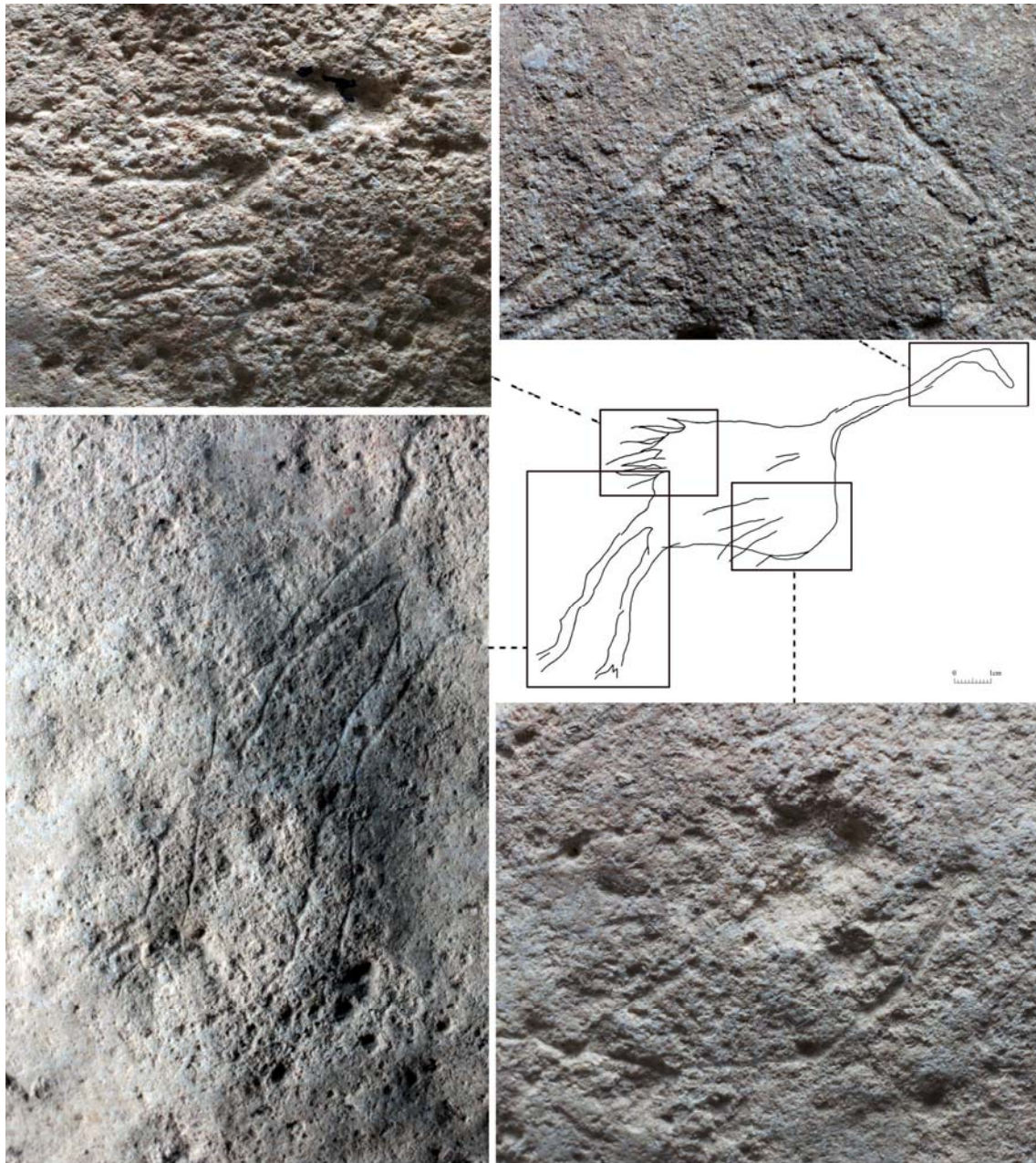


Fig. 7. Digital drawing to scale and close up photographs of motif 4. Dessins numériques à l'échelle et photographies de détail du motif 4.

Thorough analysis of the composition sheds some light on the art-making process (Fig. 8). Placement of the larger and most naturalistic figure of the assemblage, Fig. 4, the bird in the central space suggests that this was the focal point of the artistic creation. The remaining figures are smaller in comparison to this central figure. The difference in size could be interpreted as a way of emphasising the central bird or of indicating relative size differences among the motifs or as due to the reduced space available after depicting the central motif. The prominence of the central figure is increased through

reduction in the naturalism of the other figures. Figs. 1, 2, 4 and 5 are regularly spaced and aligned in an intentional linear composition facing the same direction, which creates a visual connection among them. Intentional linear arrangements, unconstrained by the morphology of the media, have been previously recorded in Palaeolithic art (Leroi-Gourhan, 1984; Macintosh, 1977). In addition, this linear composition has a narrative component as it creates a scene, discussed below. The body and limbs of motifs 1 and 2, in conjunction with the irregularities of the rock surface, draw an imaginary floor line leading towards the central bird. Though following the same direction, Figs. 4 and 5 draw a more horizontal trajectory that creates a sense of paired figures. Furthermore, Fig. 5 is not exactly located on the same level, but slightly upwards immediately under bird 4. This close connection between an adult and a potential offspring is not unique in Palaeolithic art (see previous examples in Fig. 9). What is unique to this piece from Hort de la Boquera is the presence of humans in a scenic connection that contains this sort of maternal scene.



Fig. 8. Combination of 2D and 3D reproductions for portable art recording. Photorealistic 3D model with 2D digital drawings overlaid. Combinaison de reproductions 2D et 3D pour l'enregistrement de bloc gravé. Modèle 3D réaliste avec dessins numériques 2D surimposés.

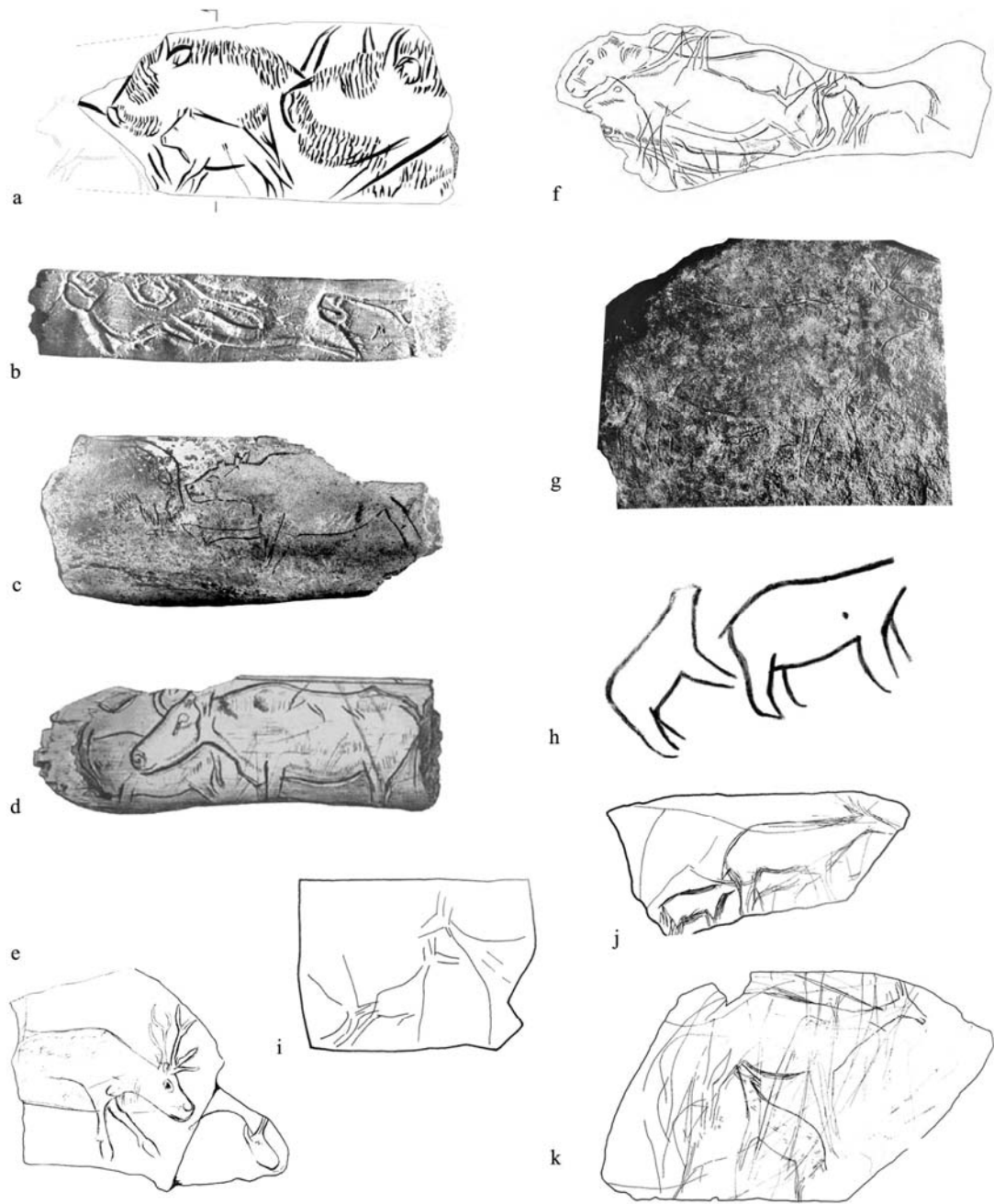


Fig. 9. Palaeolithic scenes including adult animals and their offspring: a): bisons and calf from abri Morin (Deffarge et al., 1975); b): two deer from Lauregie-Basse (Chollot, 1964); c): bison and her calf from Brassemmpouy (Chollot, 1964); d): cow and calf from Mas d'Azil (Piette, 1907); e): reindeer licking her fawn from Abri Lachaud (Cheynier, 1965); f): horse and foal from Mas d'Azil (Delporte and Mons, 1975); g): female reindeer and her offspring from La Madeleine (Sieveking, 1979); h): headless bear and potential young from Ekain (Barandiarán and Altuna, 1969); i-k): deers and fawns in different attitudes from Cova del Parpalló (Villaverde, 1994a). Scènes du Paléolithique montrant des animaux adultes et juvéniles : a): bisons et veaux, abri Morin (Deffarge et al., 1975) ; b): deux cerfs, Lauregie-Basse (Chollot, 1964) ; c): bison et son veau, Brassemmpouy (Chollot, 1964) ; d): Vache et veau, Mas d'Azil (Piette, 1907) ; e): renne léchant son faon, Abri Lachaud (Cheynier, 1965) ; f): cheval and poulain, Mas

d'Azil (Delporte and Mons, 1975) ; g): renne femelle et son petit, La Madeleine (Sieveking, 1979) ; h): ours sans tête et probable jeunes, Ekain (Barandiarán and Altuna, 1969) ; i-k): cerfs et faons dans différentes attitudes, Cova del Parpalló (Villaverde, 1994a).

### 3.3. Interpretation of the overall piece: birds, humans and a scenic composition

The interpretation of this piece calls first for a bird identification. This interpretation is crucial to interpreting the remaining figures as well as the scene as a whole, which takes into account the behavioural patterns of the species. Animal identification in ancient forms of art is not straightforward (see for example Macintosh's unsuccessful interpretation of most of the animals depicted at the Indigenous site of Doria Gudaluk, Northern Territory, Australia in 1977) (Macintosh, 1977). Nevertheless, the physical accuracy used to depict most mammals in European Palaeolithic art leads to the expectation that other less represented taxa also will be accurately reproduced. Analysis of the anatomical features (small head, elongated neck, globular body and long legs) together with previous taxonomic designations of Palaeolithic depictions of birds is key to our bird identification. Previous studies have demonstrated that birds are depicted more often in portable art than in rock art (Cremades et al., 1997). Aquatic species, including Anatidae and waders, dominate (35%); followed by birds of prey (9,5%), passerine birds (6%), including corvidae; and galliformes (1%). Unfortunately, nearly 48% of the birds are taxonomically unidentifiable (Nicolau-Guillaumet, 2008). It is our understanding that Gruiformes (which are non-strictly aquatic but highly terrestrial birds) were probably counted as waders in this scheme. Our proposal is to include the bird under study within the group known as Gruiformes. Palaeolithic depictions previously included in this order have been classified as either bustards (Otididae family) or cranes (Gruidae family). While bustards have large heads, pointed beaks and shorter and thicker necks and legs, cranes have smaller heads, more elongated beaks and thinner and longer necks and legs. Long, narrow and snake-like necks have also been identified among the anatidae, and more specifically among swans (such as those from the Gourdan and Teyjat sites) (Cremades et al., 1997). Considering in relation to these parameters the taxonomy of bird 4 should be restricted to these families: Otididae and Gruidae. The beak of otididae, and specifically of bustards, is relatively shorter than their head. The neck, while long, is substantially shorter than the body and is particularly thick at the base, where the ruff or collar is located. This species has long and robust legs, since they are highly terrestrial. Their feet have three forward-facing



toes. The male bustards have long neck bristles, and they expand their chin and tail feathers to attract females (Alonso and Palacín, 2009). Cranes have a more graceful complexion, with a more balanced proportion between head and beak.

Their neck and legs are more extended in relation to their body when compared to Otididae. Their neck can adopt a snake-like sinuosity, as in the image at Hort de la Boquera. Reference to these biological criteria suggests that bird 4 should be interpreted as a crane. The Palaeolithic artistic assemblage includes other representations of cranes, such as the bird of Arancou, La Vache, Gargas, Cauna de Belvis and one of the birds from Laugerie-Basse [6], two complete birds from Labastide (Hautes-Pyrénées) (D'Errico, 1994; Simonnet, 1947) and the bird from Bruniquel (Tarn-et-Garonne) (Capitan et al., 1909) (Fig. 10). The bird of Gargas also has been interpreted as a potential Great Auk, though D'Errico (1994) does not support this view.

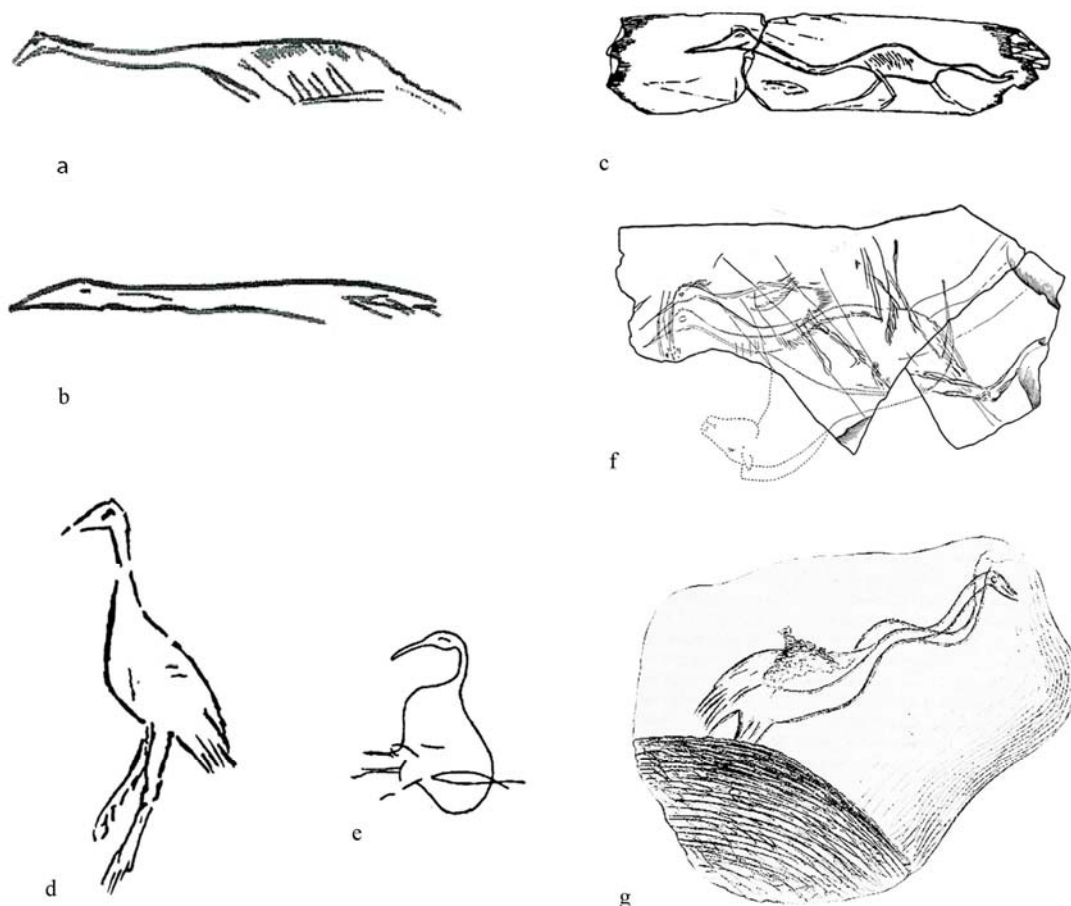


Fig. 10. Palaeolithic representations of cranes: a): Arancou (Cremades et al., 1997); b): La Vache [Buisson in (Cremades et al., 1997)]; c): Cauna de Belvis (Sacchi in Cremades et al., 1997); d): Laugerie-

Basse (Paumier in Cleyet-Merle and Madelaine, 1995); e): Gargas (Barrière in Cremades et al., 1997); f): Labastide (Simonnet, 1947); g): Bruniquel (Capitan et al., 1909). Représentations paléolithiques de grues : a): Arancou (Cremades et al., 1997) ; b): La Vache [Buisson in (Cremades et al., 1997)] ; c): Cauna de Belvis (Sacchi in Cremades et al., 1997) ; d): Laugerie-Basse (Paumier in Cleyet-Merle and Madelaine, 1995) ; e): Gargas (Barrière in Cremades et al., 1997) ; f): Labastide (Simonnet, 1947) ; g): Bruniquel (Capitan et al., 1909).

Nowadays the European Gruidae family includes the common crane (*Grus grus*) and the demoiselle crane (*Grus virgo*) (Peterson et al., 1967). However, the Pleistocene fossil record also includes *Grus primigenia*, *Grus bogatshevi* and *Grus melitensis* (Arribas, 2004). Seasonal movement is typical of these species, especially in migratory cranes. This genus almost invariably lays two eggs, and exceptionally three, an observation that is relevant to interpretation of the scene discussed in this paper. Young cranes remain with their parents throughout the non-breeding period (Meine and Archibald, 1996). Thus, both migratory patterns and the presence of the juvenile are indicators of seasonality.

Interpretation of the figures surrounding bird 4 is far more complex. Are they humans, young chicks or a mixture of both? The distinction between humans and animals often is ambiguous in Palaeolithic art, as it is in this piece. Bipedalism is a key to identifying humans in a graphic repertoire dominated by quadrupeds. However, distinguishing between birds and humans is not straightforward, since both are bipedal. Therefore, other details are needed for identification. In the art object under discussion, except for bird 4, the figures are unrealistic and simplified. For some researchers interpretation of motifs 1, 2 and 5 as chicks would fit well with our current understanding of Palaeolithic scenic compositions, as there are several maternal scenes known so far (Fig. 8). Furthermore, this interpretation is consistent with the reproductive patterns of cranes, as cranes usually lay two eggs (and exceptionally three or even four), with a survival rate of one or two young chicks (and exceptionally three). Within this scenario, the representation of a maternal scene of a mother crane surrounded by three young chicks would sound reasonable.

However, two of the figures in this scene include traits that previously have been identified as signs of humanity. These are the presence of a globular head with some facial traits (motif 2), over a thin neck (motifs 1 and specially 2), the indication of arms (motifs 1 and 2) and the upright position (motifs 1 and 2). In our view, the humanity of

Fig. 2 is indisputable, considering the characteristics discussed above. The interpretation of motifs 1 and 5 is less secure. However, the scenic coordination between motifs 1 and 2 and motifs 4 and 5 supports an interpretation of the former as potential humans and the later as potential birds. Without the presence of motif 2, motifs 1 and 5 could be interpreted as chicks, on the basis of their formal similarities, except for the excessive forward bending and the lack of arms of the later. Furthermore, the triangular shape of the arm of motif 2 could be interpreted as matching the shape of a wing, and the lack of beak, also absent in motif 5, could be argued to be due to a simplification of juveniles in Palaeolithic art. According to Lorblanchet ambiguity in Palaeolithic human representations, rather than the artists' inability to reproduce the human body, could be related to what he identifies as a voluntary denial of the human shape (Lorblanchet, 1989), which he argues is used by Palaeolithic artists to reflect the close liaison between humans and animals. This connection between humans and birds has been previously identified in some bird-headed humans discovered at Altamira and Lascaux (Lorblanchet, 1989: 122). In both cases, these human figures include a pronounced lengthening of the face that Lorblanchet interprets as deliberate (Lorblanchet, 1989: 124). Interestingly though, while in these examples the ambiguous images have beaks, in the scene under study none of the anthropomorphic figures have elongated faces. Thus, what moves us to interpret Fig. 5 as a chick, in contrast to motifs 1 and 2 as humans, is the lack of neck and arms, the position of the body nearly reaching the horizontal and particularly the analysis of the narrative context, that is, the location beneath bird 4.

Thus, to us the identification of motifs 2 and 4 as a human and a crane respectively is unquestionable. Moreover, the ambiguity of motifs 1 and 5 forces us to deeply consider the graphic context and to discover a scene in which a crane and her chick are being observed, followed, hunted or mimicked by two humans. Such a scene is unique in Palaeolithic art, as discussed below.

#### **4. Discussion: placing the piece in the artistic context**

Evidence of Palaeolithic art in North-eastern Iberia is rare. All examples are located in southern Catalonia and belong to the final stages of the Upper Palaeolithic (Fullola et al., 2015; García-Diez and Vaquero, 2015, 2006; García-Diez, 2004). Rock art examples include a potentially Magdalenian engraved deer at la cova de la Taverna

(Fullola and Viñas, 1985) and the already destroyed black silhouette of a rampant bull at Moleta de Cartagena site (Ripoll, 1965). The recently discovered engraved deer at Parellada IV (Serra de Llavería, Tarragona), controversially ascribed to the Levantine rock art tradition (Viñas et al., 2010), fits better within Final Palaeolithic artistic conventions (Villaverde et al., 2012: 106–107).

The portable art assemblage is a little more extensive, although only two sites include figurative motifs so far, since the hypothetical ibex head from Tut de Fustanyà (Girona) has been already discarded (Villaverde, 1994b: 140; García-Diez et al., 2002: 167). The figurative assemblage of Palaeolithic portable art includes the engraved plaques from Sant Gregori del Falset (Vilaseca, 1934; Fullola et al., 1990) and more recent finds at Molí del Salt (Vimbodí, Tarragona) (García-Diez et al., 2002; García-Diez and Vaquero, 2006, 2015). The latter date to between 12.500 ± 100 BP (15.129–14.230 cal. BP) and 10.840 ± 50 BP (12.801–12.682 cal. BP), with a former phase or phase A dated to the Late Upper Magdalenian (plaques 1 and 2), which is contemporary to the piece from Hort de la Boquera. The most recent phase is dated to the Epimagdalenian (plaques 3 and 4). Sant Gregori finds are ascribed to the Epimagdalenian (García-Argüelles et al., 1992; Fullola et al., 2015). Interestingly, one of the pieces from Molí del Salt that is contemporary to our find also includes a potential anthropomorphic figure (García-Diez et al., 2002) (Fig. 6g). This is the only human parallel in the region even though it lacks formal similarities to those from l'Hort de la Boquera. The new find fits well within the so called Ancient Phase of the portable art assemblage in Northern Mediterranean Iberia (García-Diez and Vaquero, 2006), which is characterized by the local procurement of raw materials, incomplete anatomical formats (except for bird 4), the absence of secondary anatomy, scarce infilling and synthesised formal figurative conception. However, the new discovery introduces innovations in the region, such as:

- an almost complete and naturalistic figure (bird 4), in contrast to the synthetic and incomplete character of previous finds;
- the lack of non-figurative motifs which is quite common in previous examples (except for motif 3 which could be a sign, but also an incomplete figure or a weapon);
- the cleanliness and clarity of the composition, with no overlaps in the separate depictions, in contrast to previously known pieces;

- the narrative component of this new scene, absent in previous examples;
- and the first evidence of a bird.

Taken together, these characteristics establish this piece into a singular find within the region.

If we expand our view to the Palaeolithic assemblage as a whole, the scene from l'Hort de la Boquera maintains its singularity. Representations of humans (excluding female figurines) and birds are not unique in Palaeolithic art but they are infrequent when compared to other represented species (aurochs, horses, deer or ibex). Both types of figures have been recorded since the Aurignacian (the Lion man from Hohlenstein Stadel, the anthropomorph from Geissenklösterle; or the water bird figurine from Hohle Fels – Germany –, to name a few) (Lorblanchet, 1989; Conard, 2003). Nonetheless, their frequency increases significantly from the Magdalenian (Duhard, 1996; Cremades et al., 1997), reflecting a shift in the decisions made by prehistoric human groups. To some researchers this growth of human representations during the Magdalenian reveals an increasing anthropocentrism (Archambeau and Archambeau, 1991: 80), or a sign of awareness of the people's social role (Duhard, 1996: 14). An increase in the depictions of birds could be due to an upsurge in the exploitation of small game at the end of the Palaeolithic. However, as observed by Cremades et al. (1997: 214), migratory species are the birds that are most represented, which demonstrates that Palaeolithic artists did not necessarily depict the most common species, but also included rare species. Both would have had some sort of symbolism.

The uniqueness of the find at L'Hort de la Boquera also is apparent when considered in terms of composition. While anthropomorphs are occasionally integrated into scenic compositions, especially in portable art (the scenes of Bruniquel, Château des Eyzies, Laugerie-Basse, Mas d'Azil, Pechialet, Raymondien, Roc-de-Sers or La Vache) (Duhard, 1996), birds almost always are depicted in isolation or in relation to other animals [the bird–bison association at Altxerri or Altamira sites (Altuna and Apellaniz, 1976)] or the association of chicks, deer, seals and fish at La Vache cave (Cremades, 1997), and rarely with humans. As noted by Duhard, in the scenic relation between humans and animals there is a positive and a negative selection of species (Duhard, 1996: 178). Given their rarity in Palaeolithic art, birds are among the negative selections. This drew Duhard's attention since birds were certainly eaten in the past.

Our discovery at Hort de la Boquera is one of the few exceptions to Duhard's observation.

Previous examples of scenes with humans and birds in Palaeolithic Europe include the Lascaux Shaft Scene (France) (Aujoulat, 2004: 158–161), which is the only one in rock art; and two examples in portable art: a perforated baton discovered at Abri Mège (Teyjat, Dordogne) (Capitan et al., 1909) and the Great Hunter plaque from Gönnersdorf (Germany) (plaque 168A) (Bosinski, 2006) (Fig. 11). The perforated baton from Abri Mège includes a complex composition of three swans and three potentially anthropomorphic figures, described as diabolotins (little demons), sharing space with two horses, three snakes or eels and the head of a hind (Capitan et al., 1909; Duhard, 1996: 116–119). This composition, however, lacks the scenic or narrative component of the piece under study.

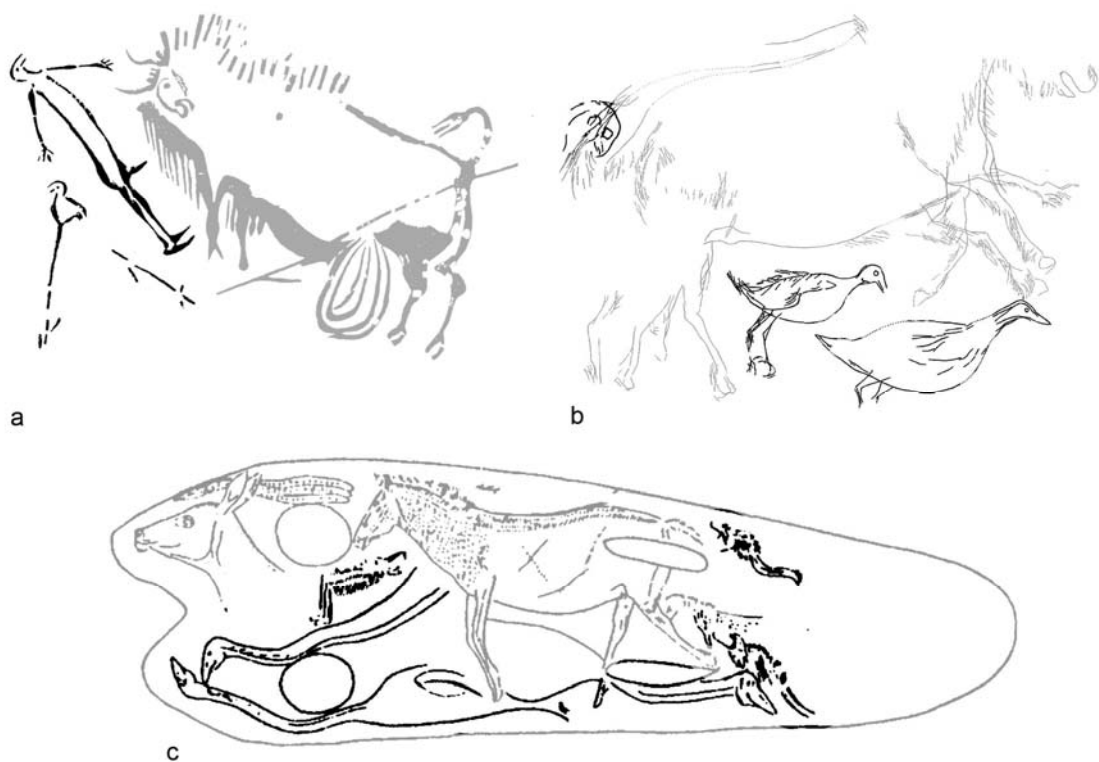


Fig. 11. Palaeolithic compositions and scenes including humans and birds: a): Lascaux shaft scene [according to Glory in (Duhard, 1996: 98)]; b): piece of portable art from Gönnersdorf (Bosinski, 2006); c): perforated baton from Teyjat (according to Marshack in Duhard, 1996: 116). Compositions et scènes du Paléolithique comprenant des humains et des oiseaux : a): scène du puits, Lascaux [d'après Glory in (Duhard, 1996 : 98)] ; b): bloc gravé, Gönnersdorf (Bosinski, 2006) ; c): bâton percé, Teyjat (d'après Marshack in Duhard, 1996 : 116).

While motifs are endowed with a narrative component in the Lascaux shaft scene, none of the bird-like forms are literal representations of birds. One is a bird-headed human apparently being hunted by a bison, and the other is a bird carved at the end of a stick, reminiscent of the spear-thrower with a carved capercaillie from Mas d'Azil (Charrière, 1968). Thus, while reflecting some symbolic meaning for birds in Palaeolithic art and certain connections between birds and humans, as in the scene under study, there is no narrative content as there is with the piece from l'Hort de la Boquera or Gönnersdorf.

Finally, the piece from Gönnersdorf includes a composite animal (half reindeer-half horse) that seems to be rushing impetuously to the right and two birds (a water hen and a goose), which Bosinski (2006: 22) interprets as fleeing a partial representation of a hunter (a head with rounded eyes). Within this scenario, the birds would be the target or at least the point of attention of an anthropomorphic figure, which makes this piece the closest to the new find at l'Hort de la Boquera. In the piece from Gönnersdorf, however, the incomplete human and the tangled nature of the scenic composition hinders any reading of a possible narration, contrary to the scene on the new object from l'Hort de la Boquera.

The new piece from l'Hort de la Boquera is an outstanding visual sample of human/bird interaction during the Late Upper Magdalenian in Europe. Its unique combination of qualities includes the singularity and naturalism of bird 4, the cleanliness and clarity of the scene, a clear narrative component, and a composition in which a possible maternal scene of birds coexists with one or two humans. Taken together, these graphic elements introduce a new aspect to European Palaeolithic art.

## **5. Conclusions**

The new sample of portable art recovered at l'Hort de la Boquera provides a singular visual sample of human/bird interaction during the Late Upper Magdalenian both in Northeast Iberia and in the European Palaeolithic.

This new find is exceptional in terms of the rarity of Palaeolithic art in the area and the infrequency of the motifs depicted (birds and humans) and themes (a scenic composition) in the region and in European Palaeolithic art. Moreover, this find is one of the few visual examples of human/bird interactions during the Palaeolithic. This new example not only includes a narrative scene, which is infrequent in Palaeolithic art, but

also combines within the same scenic composition a potential maternal scene and a hunting scene, or at least a visual account in which birds are the target of human attention, or followed or imitated by one or two human figures. As such, this new find is unique in the European Palaeolithic repertoire.

Though the specific meaning of the scene cannot be determined, this new discovery reminds us that birds had both an economic and a symbolic role in European Palaeolithic societies.

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