Figurative graphic expressions and the first Western Mediterranean farmers: A new zoomorphic contribution from Southern France

Esther López Montalvo, Claire Manen, Jean Guilaine, François Baleux, Fabien Convertini

López-Montalvo E., Manen C., Guilaine J., Baleux F., Convertini F. (2021) – Figurative graphic expressions and the first Western Mediterranean farmers: a new zoomorphic contribution from Southern France, *Bulletin de la Société préhistorique française*, 118, 3, p. 453-473.

Figurative graphic expressions and the first Western Mediterranean farmers

A new zoomorphic contribution from Southern France

Esther López-Montalvo, Claire Manen, Jean Guilaine, François Baleux, Fabien Convertini

Abstract: In Europe, the emergence of the agro-pastoral way of life is accompanied of a novel socio-symbolic system that develops new forms of expression, themes and supports. In this sense, the shape, themes and decorative patterns in ceramics have particularly favoured the characterisation of both regional identities and spheres of influence at different temporal and geographic scales. Among the themes portrayed, the figurative motifs take on special relevance since they also invoke a symbolic sphere that underlies the complex spread of farming from the Near East into Europe. Bearing this in mind, we present the first figurative zoomorphic decoration identified on pottery from the beginning of the Neolithic in Mediterranean France. Although these depictions are well known in Italy and Spain, they were still unheard of in our country.
The analysed vase comes from the coastal site of La Corrège (Leucate, Aude), discovered in the 1970s following dredging operations. New radiocarbon dates place this site in the period of full development of the cardial complex in southern France and Mediterranean Spain, between 5300 and 5000 cal. BCE.
The three-dimensional reconstruction of the decorated vessel and the microscopic observation of technical gestures, allowed us to virtually replace the motifs on the graphic space provided by the body of the vase, and thus to reproduce the spatial and narrative structure of the decoration. The in-depth analysis of the motifs and spatial patterns allows us to determine the order of the lines and the sequence of execution of the decoration, to interpret this decoration as the representation of a wild animal, probably a wild boar if we consider certain distinctive anatomical features of this species, and to deduce a narrative dimension.
This figurative ornamentation also provides new arguments regarding both the highly diversified means and forms of symbolic expression accompany the Neolithic transition in this area, and the fact that systematic opposition between schematic graphic expression and naturalist expression does not seem to be relevant. In this context, the characterization of the diversity of the graphic expressions of the first farmers' communities is an important challenge for future research. The study of graphic traditions and their large-scale distribution can thus provide new arguments for the analysis of the spatial and temporal dynamics of Mediterranean Neolithisation, while at the same time promoting our understanding of the symbolic system of the first farming societies, as the driving force of their identity and social cohesion.

Keywords: Early Neolithic, Cardial culture, Western Mediterranean, figurative ceramic decoration, schematic rock art, Spanish Levantine rock art.

Résumé : En Europe, l'émergence du mode de vie agropastoral s'accompagne d'un changement du système socio-symbolique des sociétés qui développent de nouvelles formes d'expression graphique, de nouveaux thèmes et supports. En ce sens, la forme, les thèmes et les motifs décoratifs de la céramique ont particulièrement soutenu la caractérisation des identités régionales et des sphères d'influence néolithiques à différentes échelles temporelles et géographiques. Parmi les thèmes représentés, les motifs figuratifs revêtent une importance particulière car ils évoquent également une sphère symbolique propre aux communautés agropastorales qui diffusent depuis le Proche-Orient jusqu'en Europe occidentale, permettant ainsi d'approfondir la connaissance du cheminement des symboles identitaires dans cette vaste aire géographique.
Dans cette perspective, nous présentons le premier décor zoomorphe figuratif identifié sur une poterie du début du Néolithique en France méditerranéenne. Si ces représentations sont bien connues en Italie et en Espagne, elles étaient en effet encore inédites sur notre territoire. À ce jour, il n'est pas possible de déterminer si cette absence d'expression

Article reçu le 22 mars 2021, accepté le 14 juillet 2021, publié le 30 septembre 2021.

figurative sur les poteries est corrélée à une méthodologie biaisée (difficultés à identifier les thèmes ?), ou si elle représente une véritable lacune témoignant d'une histoire culturelle différenciée. Le vase analysé provient du gisement littoral de La Corrège (Leucate, Aude), découvert dans les années 1970 suite à des opérations de dragage. De nouvelles datations placent le gisement dans la période de plein développement du complexe cardial dans le sud de la France et en Espagne méditerranéenne, entre 5300 et 5000 cal. BCE. Parmi les éléments recueillis sur ce site, on trouve plus de 600 fragments de vases décorés selon une stylistique typique du Cardial franco-ibérique. Parmi ces fragments, trois tessons présentant un décor singulier ont été identifiés comme faisant partie du même récipient dans les premiers travaux de synthèse réalisés dans les années quatre-vingt, mais leur décor n'avait jamais fait l'objet d'une étude approfondie concernant les thèmes ou la composition des motifs. Récemment, la révision de l'assemblage céramique de La Corrège nous a permis de fournir une image plus complète de la morphologie et du décor de ce récipient en identifiant trois nouveaux tessons. Ce vase présente des caractéristiques très originales tant du point de vue de la pâte que du système décoratif qui le distinguent nettement du reste de la collection. Afin de pouvoir entreprendre une analyse exhaustive de la composition décorative du vase, nous nous sommes appuyés sur une modélisation et une reconstruction tridimensionnelle virtuelle du vase, fondée sur les caractères morphométriques des tessons conservés, ainsi que sur une observation détaillée des motifs identifiés et des techniques d'impression à l'aide d'un microscope stéréoscopique. Cette restitution 3D nous a permis de replacer virtuellement les motifs sur l'espace graphique fourni par la panse du vase, et ainsi de reproduire la structure spatiale et narrative de la décoration. L'analyse approfondie des motifs et des schémas spatiaux nous permet de déterminer l'ordre des tracés et la séquence d'exécution du décor, d'interpréter ce décor comme la figuration d'un animal sauvage, probablement un sanglier si nous considérons certains traits anatomiques distinctifs de cette espèce, et d'en déduire un sens narratif. Ce décor s'organise selon une frise horizontale, localisée à la jonction entre le col et la panse du vase, composée d'au moins 4 figurations animales opposées deux à deux.
Les caractéristiques du vase à décor figuratif de La Corrège ouvrent ainsi la discussion sur le phénomène graphique, pariétal et mobilier, qui accompagne l'émergence et l'expansion du Néolithique méditerranéen, et nous invite en même temps à nous interroger sur la valorisation de la sphère du sauvage dans le système symbolique des premières communautés agropastorales. Les parallèles formels, thématiques et techniques établis entre le vase de La Corrège et celui issu du célèbre gisement de la Cova de l'Or en Espagne, livrent de nouveaux arguments en faveur des liens existants entre les horizons cardiaux languedocien et ceux du pays Valencien. Ces expressions graphiques participent ainsi, comme les autres catégories de vestiges, à la définition des paysages culturels et des sphères d'influence des communautés néolithiques. D'une manière plus générale, on peut observer qu'il existe un fonds graphique commun aux sociétés agropastorales de Méditerranée occidentale, caractérisé par le partage de certains thèmes, notamment les anthropomorphes, ou symboles schématiques. La réalisation de décors figuratifs sur support céramique (anthropomorphes, zoomorphes et signes) est, par exemple, un mode d'expression bien connu qui accompagne l'implantation du Néolithique, bien que leur répartition sur les sites côtiers italiens, français et ibériques soit très hétérogène. On observe néanmoins, au sein de ce spectre symbolique, une hétérogénéité des moyens et des formes d'expression, comme de fortes disparités.
Cette ornementation figurative fournit également de nouveaux arguments pour relativiser l'opposition systématique faite entre l'expression graphique schématique et l'expression naturaliste. Le décor du vase de La Corrège, comme d'autres vases espagnols, montre en effet à quel point il est parfois difficile d'assigner tel caractère à telle tradition graphique et que les plages de recouvrement d'une tradition à une autre sont importantes. Dans ce contexte, la caractérisation de la diversité des expressions graphiques des premières communautés d'agriculteurs est un défi important pour la recherche future. Dans le même temps, il semble désormais intéressant d'envisager la décoration céramique sous l'angle de la production graphique. L'étude des traditions graphiques et de leur distribution à large échelle peut ainsi apporter de nouveaux arguments à l'analyse des dynamiques spatiales et temporelles de la néolithisation méditerranéenne tout en favorisant notre compréhension du système symbolique des premières sociétés paysannes, moteur de leur cohésion identitaire et sociale.

Mots-clés : Néolithique ancien, Cardial, Méditerranée occidentale, céramique, décoration figurative, art schématique, art levantin.

Complex mechanisms underpin the Neolithic transition in Western Europe, and decrypting these mechanisms is a major challenge for current research. Attempts to reconstruct the diffusion of techno-economic innovations in Europe from Near Eastern areas of origin are sometimes contradictory, and oppose cultural diffusion, demic diffusion or a more complex combination of these processes (Zvelebil and Lillie, 2000; Guilaine, 2013; Hofmanová *et al.*, 2016). In this debate, the latest researches emphasize radiocarbon, paleogenetic or paleoenvironmental data (Berger and Guilaine, 2009; Bocquet-Appel *et al.*, 2009; García-Martínez de Lagrán *et al.*, 2018). Material and artistic productions are more rarely used in large-scale works despite of the fact that they are fundamental for identifying the filiations and cultural recombinations intrinsic to the Neolithisation process (Shennan *et al.*, 2014; Bernabeu *et al.*, 2017; Rigaud *et al.*, 2018).

The first evidences of agro-pastoral societies in the Western Mediterranean date from the beginnings of the 6th millennium BCE. The expansion of the agricultural systems was a complex process showing disparate rhythms and modalities that have not been properly characterized so far. Recent overviews, based on radiocarbon dating on short-lived samples strictly contextualized, show very rapid dispersion from the south Italian and Adriatic

Fig. 1 – Location of La Corrège (Leucate, France) and some of the most emblematic Early Neolithic sites in Western Mediterranean mentioned in this paper. Italy: Kronio (Sicily), Rendina (Potenza), Passo di Corvo (Foggia), Lama Marangia (Minervino), Ripa Tetta (Lucera). France: Pendimoun (Castellar), Grotte des Fées (Leucate). Espagne: Cova del Toll (Moià), Cova Bonica (Vallirana), Cova Gran (Collbató), Can Sadurni (Begues), Cova del l'Or (Beniarrés), Cova de la Sarsa (Bocairent), Cova de les Cendres (Teulada).

***Fig. 1 –** Localisation du site de La Corrège (Leucate, Aude) et des principaux gisements du Néolithique ancien de Méditerranée occidentale cités dans l'article.*

nuclear area (ca. 6000/5900 cal BCE) towards the coastlines of Northern Italy, the South of France (ca. 5800 cal BCE) and the Iberian Peninsula (ca. 5600 cal BCE) (Binder *et al.*, 2017; Isern *et al.*, 2017; García Puchol *et al.*, 2018). However, the spatial and temporal dynamics of this diffusion are not regular and considerable discontinuities have been identified (Manen *et al.*, 2019).

Among the techno-economic developments in Western European Neolithic communities, the manufacture of pottery was an emblematic innovation and represents a means of socio-symbolic expression accompanying a new way of thinking and a new relationship with the environment. Ceramic productions, and in particular the way they were decorated, were considered very early on as the common denominator of the first Neolithic expressions in the Western Mediterranean (Western Impressed-ware) (Bernabò Brea, 1950; Guilaine, 2007). Many works on decorative techniques and the composition of decorative patterns have been carried out with a view to characterizing regional identities and tracing the spheres of influence and interactions at different temporal and geographic scales (Manen, 2002; Radi, 2010). However, little work has been undertaken from the perspective of graphic production. In this context, figurative graphic expression on pottery is of major interest as it allows us to trace back and characterize a widespread social and symbolic trend, originating in the Near East.

Bearing this in mind, we have recently carried out a new study of the ceramic collection of the La Corrège site (Leucate, Aude, France) in order to undertake a more comprehensive multi-proxy analysis of its decorations. Although the interdisciplinary research conducted in this Neolithic site during the 80's was published in a monograph directed by one of us (Guilaine *et al.*, 1984), our new approach to the study of its ceramics has shed light on a particular decoration that does not fit the patterns identified in this site so far. A thorough analysis of the manufacturing and decorating process, based on a virtual three-dimensional modelling and reconstruction of the vessel, led us to identify a figurative zoomorphic decoration with a rather complex spatial composition, the first one reported on pottery from the French Mediterranean Early Neolithic so far. Putting the figurative decoration from La Corrège into the context of the Neolithisation process of the Western Mediterranean allows us to further discuss both the complexity and disparate forms of figurative graphic trend emerging during the earliest phases of the expansion of agricultural systems and the cultural links within this area.

LA CORRÈGE (LEUCATE): CONTEXT AND CHRONOLOGICAL DATA

The French site of La Corrège (Leucate, Aude) is located on the french Mediterranean coastline of the Gulf of Lion, about one hundred kilometres from the Spanish border (fig. 1), and was discovered in the 1970s after dredging operations (Guilaine *et al.*, 1984). This discovery was important for two main reasons. Firstly, it brought to light the existence of a probable large-scale open-air cardial coastal settlement since the main habitat sites known until then, often in caves or shelters, were

Level	Sample		Laboratory code	Conventional Date BP		Cal BCE (HPD 95.4)		Method	Reference
Point 1	Charcoal		Gif 2747	5410	140	4545	3955	Conventional	Guilaine *et al*., 1984
Point 1			Gif 2748	3210	110	1865	1205		
Point 2			Gif 2749	5900	140	5210	4450		
Point 1	Waterlogged wood		MC 788	6800	90	5890	5535		
Point 1	Animal bone	*Ovis aries*	**Beta_398927**	**6280**	**30**	**5325**	**5130**	AMS	Manen *et al*., 2019
Point 1			**Beta_398928**	**6210**	**30**	**5300**	**5050**		
Point 2		Caprini	**Beta_398929**	**6320**	**30**	**5365**	**5215**		
Point 1		*Ovis aries*	**Beta_398930**	**6270**	**30**	**5320**	**5080**		
Point 2		*Bos taurus*	**Beta_398931**	**6120**	**30**	**5210**	**4945**		
Indet.	Animal bone-tool	*Cervus elaphus*	**Beta_398932**	**6230**	**30**	**5305**	**5060**		
Point 1			**Beta_398933**	**6190**	**30**	**5290**	**5035**		

Table 1 – Radiocarbon dates of La Corrège (Leucate, Aude, France).
Only results obtained on short-lived samples are considered (dates in bold type). Calibration Oxcal 4.4 ; IntCal 2020.

Tabl. 1 – *Datations radiocarbone de La Corrège (Leucate, Aude, France).*
Seules les mesures obtenues sur échantillon à durée de vie brève sont retenues (datations en gras). Calibration Oxcal 4.4 ; IntCal 2020.

rather located inland. Secondly, it then made it possible to illustrate the rise in sea level at the beginning of the Holocene. Indeed, the low lagoon coasts of Languedoc, favouring horizontal sea movements, were particularly affected by these sea level variations, which led to a significant loss of information about coastal settlements in the late Palaeolithic and Early Neolithic. These alterations in the landscape could explain the gap regarding cardial coastal settlements in the Languedoc region.

The La Corrège site has yield an impressive collection of archaeological material including over 600 fragments of vessels decorated in a typical French-Iberian Cardial style (Bernabeu, 1989), a varied toolkit in local flint, many macro-tool elements, fishnet weights, polished stone axes and bone industry. Several bones attest to husbandry practices, hunting and coastal and high sea fishing (Guilaine *et al.,* 1984). In spite of the absence of stratigraphic context, La Corrège is an emblematic site for the Cardial culture in the South of France on account of the quantity of material gathered, the diversity of economic activities recorded and its open-air coastal location. In fact, no other major open-air cardial site has been excavated to date on the west side of the Rhône river, being the emblematic Spanish lake site of La Draga (Banyoles, Gerona), around 100 km away, the closest site providing a sound point of comparison (Bosch i Lloret *et al.*, 2011; Terradas *et al*., 2020).

Although the material recovered at La Corrège allows it to be framed unquestionably within the Cardial horizon, we have recently developed a dating program that has allowed us to refine the chronology of this site (Manen *et al.*, 2019) (table 1). Despite the constraints linked to the decontextualized nature of the available samples, 5 faunal bones and 2 bone tools associated at the time of their discovery with the cardial ceramics have been chosen for radiocarbon dating. The fauna samples correspond to caprini and bovine domestic taxa, while bone tools are two punches shaped on deer metapods. Despite their long immersion in the marine environment, all these samples yielded a well-preserved collagen in sufficient quantity to obtain completely concordant results. The analysis of the dates obtained shows that they are evenly spread out in time, between 5350-5000 cal BCE (table 1). The site of La Corrège is thus part of the period of full expansion of the Cardial complex in the South of France and Mediterranean Spain (Oms *et al.*, 2016a; Manen and Guilaine, 2010). During this period, the network of sites became increasingly dense on the Mediterranean coastline and in more continental regions while the types of ecosystems exploited and economic models became more diversified (Rowley-Conwy *et al.*, 2013; Antolín, 2015).

THE CERAMIC ASSEMBLAGE OF LA CORRÈGE

General considerations and methodological points

The catalogue and synthesis study of the morphology and decorations of the ceramic assemblage of La Corrège were already published by one of us (Guilaine *et al*., 1984). In this preliminary work, three sherds having a singular decoration (L1-L3) were identified as being part of the same vessel, but their decoration was not subject of a comprehensive study concerning the themes or compositional patterns. Recently, the revision of the ceramic assemblage of La Corrège has allowed us to provide a more complete picture of the morphology and decoration pattern of this vessel by identifying three new sherds (L4-L6), whose decoration and characteristics of the fabric do not cast doubt on the fact that they belong to the same vessel (fig. 2).

In accordance with the specific protocols used in the study of Early Neolithic pottery in the Western Mediterranean (Binder *et al*., 2010), we present here a detailed

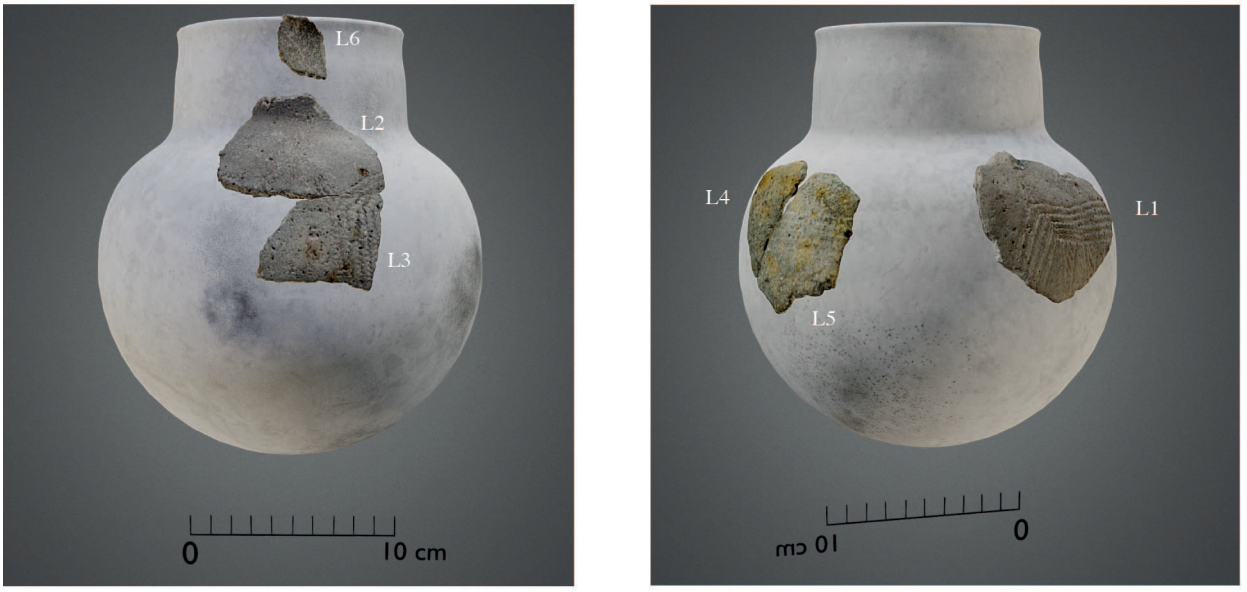


Fig. 2 – 3D reconstruction model of the decorated vessel from La Corrège. Final 3D texture model created by Sketchup open-source software. Images a and b show the identification code of the preserved sherds.

Fig. 2 – *Modèle numérique 3D du vase décoré de La Corrège. Modèle 3D texturé réalisé sous Sketchup. La numérotation des tessons préservés est détaillée sur les images a et b.*

description of the manufacture, morphology and decoration sequences of the six sherds (L1-L6), which opens the prospect of a more accurate reconstruction of the vessel and supports a new interpretative proposal of the motifs and their spatial organisation. Regarding the characterisation of the raw material, a slide-mounted thin section (30 µm thick) has been analyzed under a polarizing microscope, to observe the distribution of the mineral components and their optical properties. First, in order to assess an accurate reading of the decoration composition a three-dimensional virtual reconstruction of the vessel has been developed. This virtual reconstruction was carried out in two stages: first, the digitization of the six preserved sherds by photogrammetry using Argisoft's Photoscan Professional software; second, the virtual reassembly including 3D approximation of the missing parts using Sketchup open-source software. This 3D reconstruction model reproduces the original shape, volume and size of the vessel thereby permitting to study, first, the identification of motifs; second, the decoration spatial patterns and, finally, the eventual narrative sense of the themes depicted (fig. 2 and S1 File). Second, as for the in-depth study of the potter's gesture and the organization of the different parts that make up the motifs, an on-axis zoom microscope Axio Zoom.V16 Zeiss has been used.

The vessel of La Corrège: manufacture and decoration sequences

Raw material

A thin-section analysis of a sample has provided information on both petrographic fabric and mineralogy of its temper material. A clay family with sedimentary inclusions, rich in carbonates and quartz, to which grog grains were added as temper material has been identified. The carbonates, unrecognisable due to their strong alteration, present detritism as distinctive trait.

Shaping and finishing

The macroscopic analysis of the fabric shows a well-preparing clay (compacteness and low-porosity) while the careful regularisation of the preform precludes a precise reconstruction of the shaping techniques used for this vessel. It is worth noting that several marks observable on the radial plane on the sherds demonstrate the assembling of elements, probably coils, but it is not possible to go further. The internal wall of the vessel presents smoothing wet clay surfaces while the external wall has been burnished before the decoration process.

The graphic reconstruction of the preserved fragments associated with 3D modelling enables us to reconstruct the overall morphology of the vessel, resulting in a small bottle of 19,5 cm high and a maximum diameter of 18 cm (fig. 2 and S1 File). This vessel presents a composite profile: the belly is spherical, and the inflection of the profile underlines the junction between it and the neck. The latter was probably short intended to narrow the vessel opening.

Decorative technique

The vessel was decorated by impression on a leather hard paste; the edge of the impressions is very clear, with no bulges. The characteristics of the impressions permit to identify a *Cerastoderma* shell (Manen and Salanova, 2010) as the tool used to make the decoration. Concerning potter's gestures, the shell was held perpendicularly to the paste or in a more tangential way, depending on the

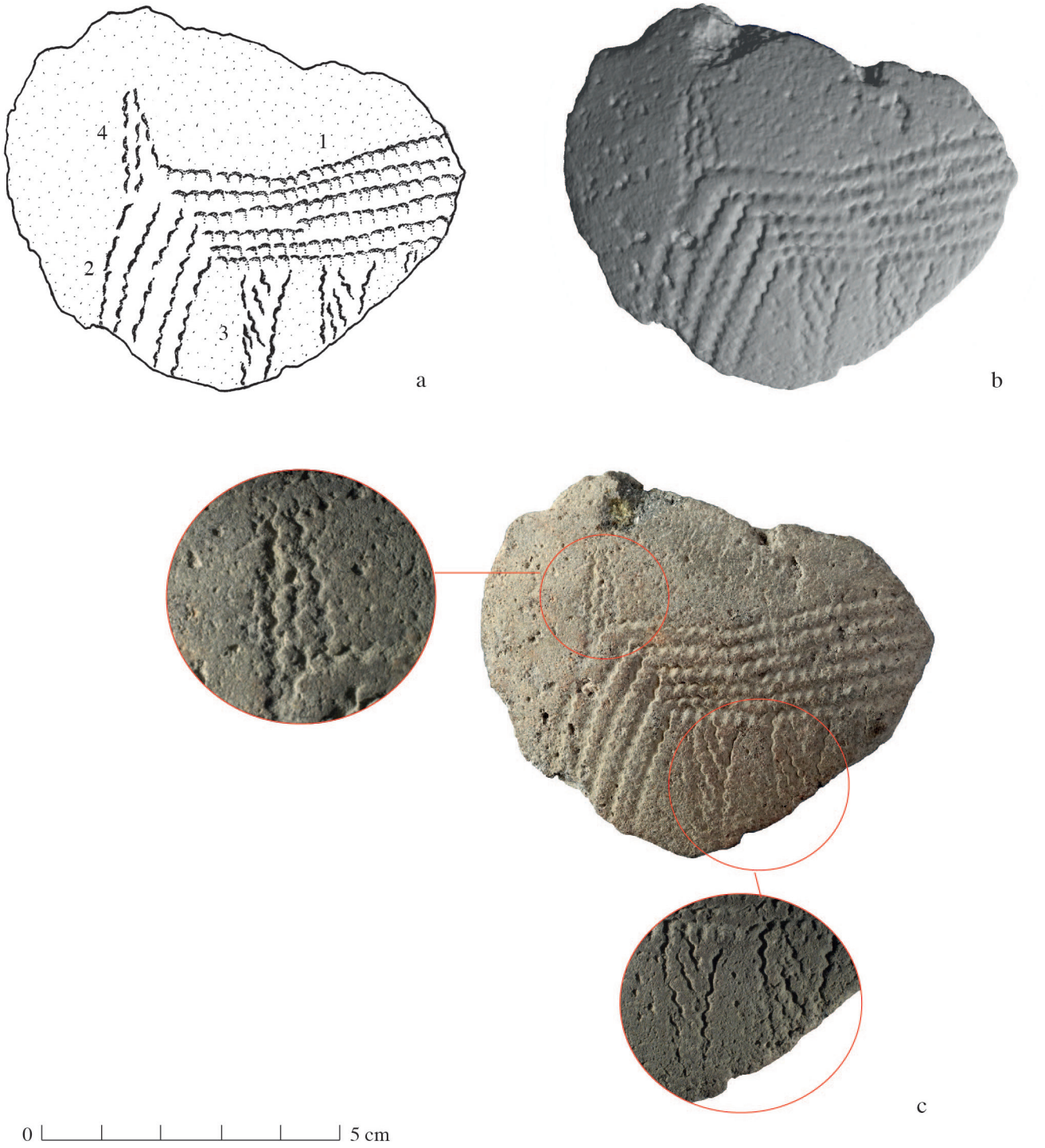


Fig. 3 – Sherd L1: **a**, sketch of the motif showing the different parts of the decoration; **b**, virtual non-texturized 3D reconstruction; **c**, digital picture showing the magnified detail of the triangular element and the juxtaposed truncated cones (Zeiss Microscope Axio Zoom V16).

Fig. 3 – *Tesson L1 :* ***a****, reconstitution du motif et désignation des différentes parties de la décoration ;* ***b****, modèle numérique 3D sans texture ;* ***c****, détail agrandi de l'élément triangulaire et des troncs de cônes juxtaposés.*

zone of the decoration, and it was well separated from the paste between each impression.

Motifs description

Sherd L1. This fragment (fig. 2 and 3) presents a pattern made up of four parts. The first part (1) consists of a horizontal band with six lines of sub-parallel horizontal impressions. It is worth noting that the upper line presents a slight interruption. The second part (2) is a band comprising five lines of oblique impressions, which converge towards the horizontal band at 80 degrees. The third part (3) consists of two juxtaposed truncated cones, filled with subparallel oblique lines, on the lower part of the horizontal band. The fourth part (4) is a triangular element, composed of three convergent lines, just beside the junction of the two bands.

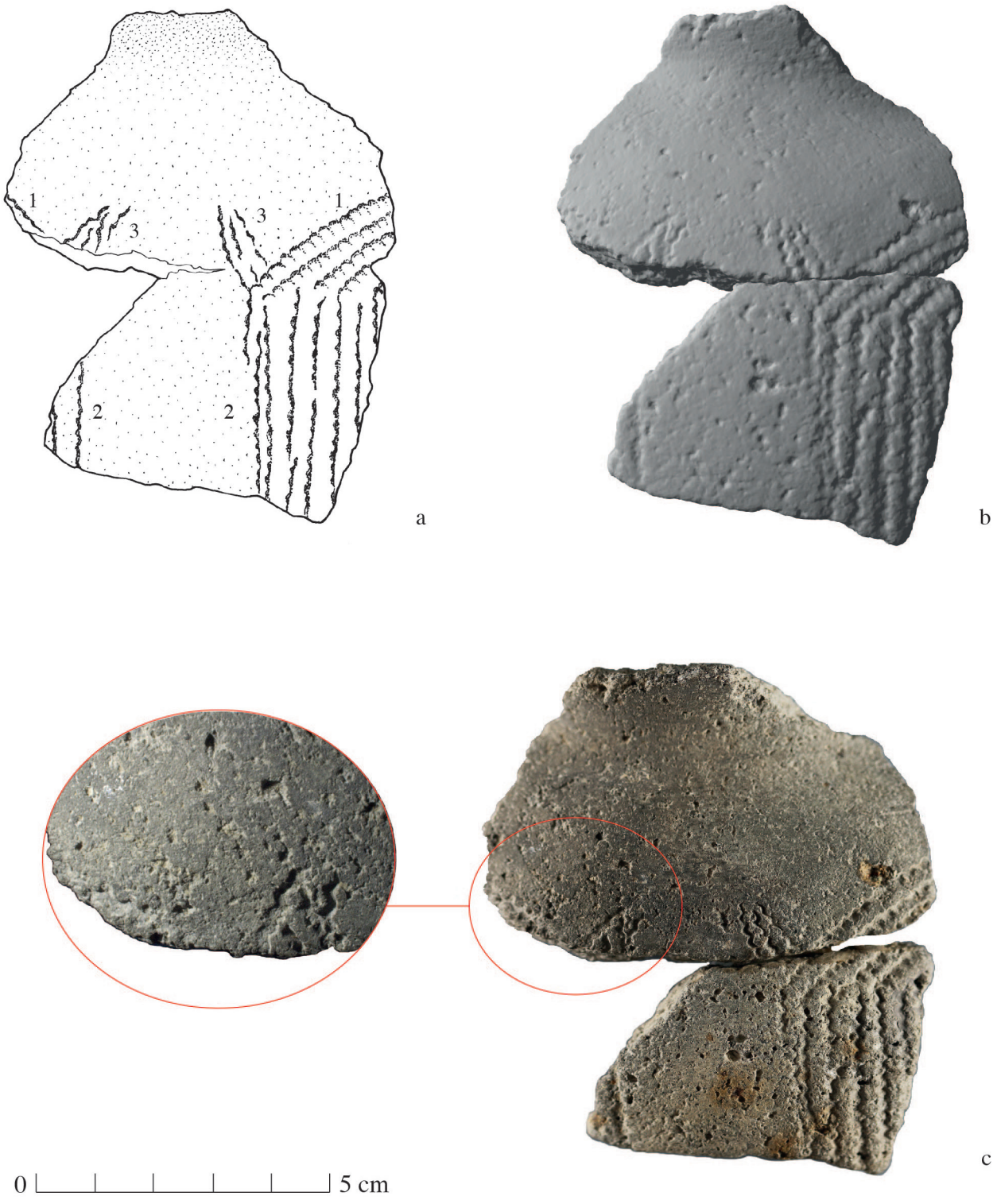


Fig. 4 – Sherds L2-L3: **a**, sketch of the two motifs showing the different parts of the decoration; **b**, virtual non-texturized 3D reconstruction; **c**, magnified detail of the triangular element on the left (Zeiss Microscope Axio Zoom V16).

Fig. 4 – *Tessons L2 et L3 :* ***a****, reconstitution des deux motifs composant les différentes parties de la décoration ;* ***b****, modèle numérique 3D sans texture ;* ***c****, détail agrandi de l'élément triangulaire de gauche (Zeiss Microscope Axio Zoom V16).*

Sherds L2/L3. These two fragments (fig. 2 and 4) bear a decoration consisting of two very partially preserved motifs. The more complete motif comprises three parts. The first (1) is a band made up of at least five lines at an angle of 45° in relation to the horizontal plane of representation. The second part (2) is a vertical band made up of six subparallel lines. The end of these lines is not visible. The third part (3) is a triangular element, comprising three convergent lines, directly beside the junction of the two bands. This same motif is repeated with a mirror effect along a vertical axis. It is very poorly preserved, but we can nonetheless identify the upper line of the band angled at 45°(1), two subparallel lines belonging to the vertical band (2), and finally, the extremity of the triangular element (3).

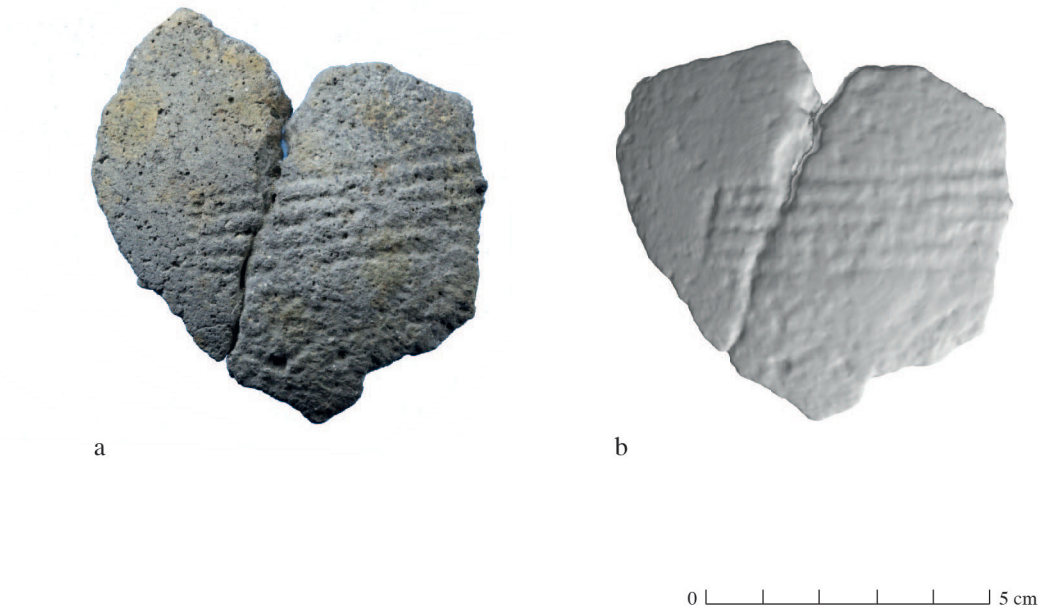


Fig. 5 – Sherds L4-L5: **a**, digital picture; **b**, virtual non-texturized 3D reconstruction.

Fig. 5 – *Tessons L4-L5 : **a**, photographie ; **b**, modèle numérique 3D sans texture.*

Sherds L4/L5. In spite of surface erosion, it is possible to observe a motif made up of a horizontal band of five subparallel horizontal lines (fig. 2 and 5). The preserved extremity of the band is limited by a vertical line. The lower part of the sherd is totally eroded and does not enable the identification of other lines.

Sherd L6. This is a small fragment of a non-decorated neck with a thinned lip (fig. 2). The macroscopic characteristics of the fabric are identical to those of the other fragments.

Interpreting the themes, their decoration composition and narrative

The most complete and well-preserved motif of sherd L1 (fig. 3) allowed us to assess the reading of the rest of the motifs of sherds L2/L3 and L4/L5. We propose interpreting the pattern of sherd L1 as a zoomorphic figure only preserved in its front part: the band of horizontal lines represents the body (1); the oblique lines shape the head (2); the truncated cones portray the front legs (3), and the ear is depicted by the triangular element (4).

This would be a rather semi-naturalist anatomical depiction, although it must be stressed that certain details were carefully represented, such as the ear or the cervico-dorsal line with a slight inflection at the neck. The face, even if it is not possible to have an overall vision of it, would be clearly disproportionate in relation to the body. The anatomical format of this specimen, with parallel layout of the cervico-dorsal line and the belly, the ear cocked as a danger signal, the probably short legs and the marked projection of the face, is characteristic elements of *Sus sp*. (fig. 6), and more specifically of the wild boar (*Sus scrofa*). The hypothesis of a small carnivore should not be ruled out, on account of the pointed shape of the ears and the anatomical characters, but the proportion of the face does not correspond to the silhouette of a canid (dog, wolf or even fox).

Following the reading made for motif L1, the assemblage of sherds L2-L3 enables us to identify the face (vertical band) (2), the neck (oblique band) (1) and the ear (triangle) (3) of two zoomorphs which, in view of their design, would be of the same species as L1. Considering the position of the face and the tension of the line drawing the neck, we can deduce that these animals are depicted with their heads down and facing each other.

Finally, the interpretation of motif L4-L5 is more problematic due to the poor conservation of sherds. However and following the anatomical structure of motif L1, the horizontal lines could correspond to the body of a fourth animal. In this case, we cannot go any further in species identification since neither the head nor the extremities of the animal are preserved.

Considering the profile, shape and curvature of the decorated sherds, the graphic arrangement would be situated below the junction between the neck and the belly, coinciding with the median and upper part of the vessel. The three-dimensional reconstruction has yielded a circumference-decorated area of 56,5 cm. Regarding the spatial arrangement of a two mirror-effect motifs in L2-L3 as well as their probable size, based on motif L1 (8,5 cm long), we propose that four specimens were juxtaposed following a symmetrical layout. The resulting decoration could be organized in a horizontal frieze consisting of at least four animal depictions facing each other in pairs: L2/L3 on one side of the vessel; L1-L4/5 on the opposite side (fig. 2, fig. 7 and S1 File).

Finally, the spatial arrangement of these figures, especially in the case of L2-L3, leads us to propose a possible narrative component that could be related to the behaviour of this species.

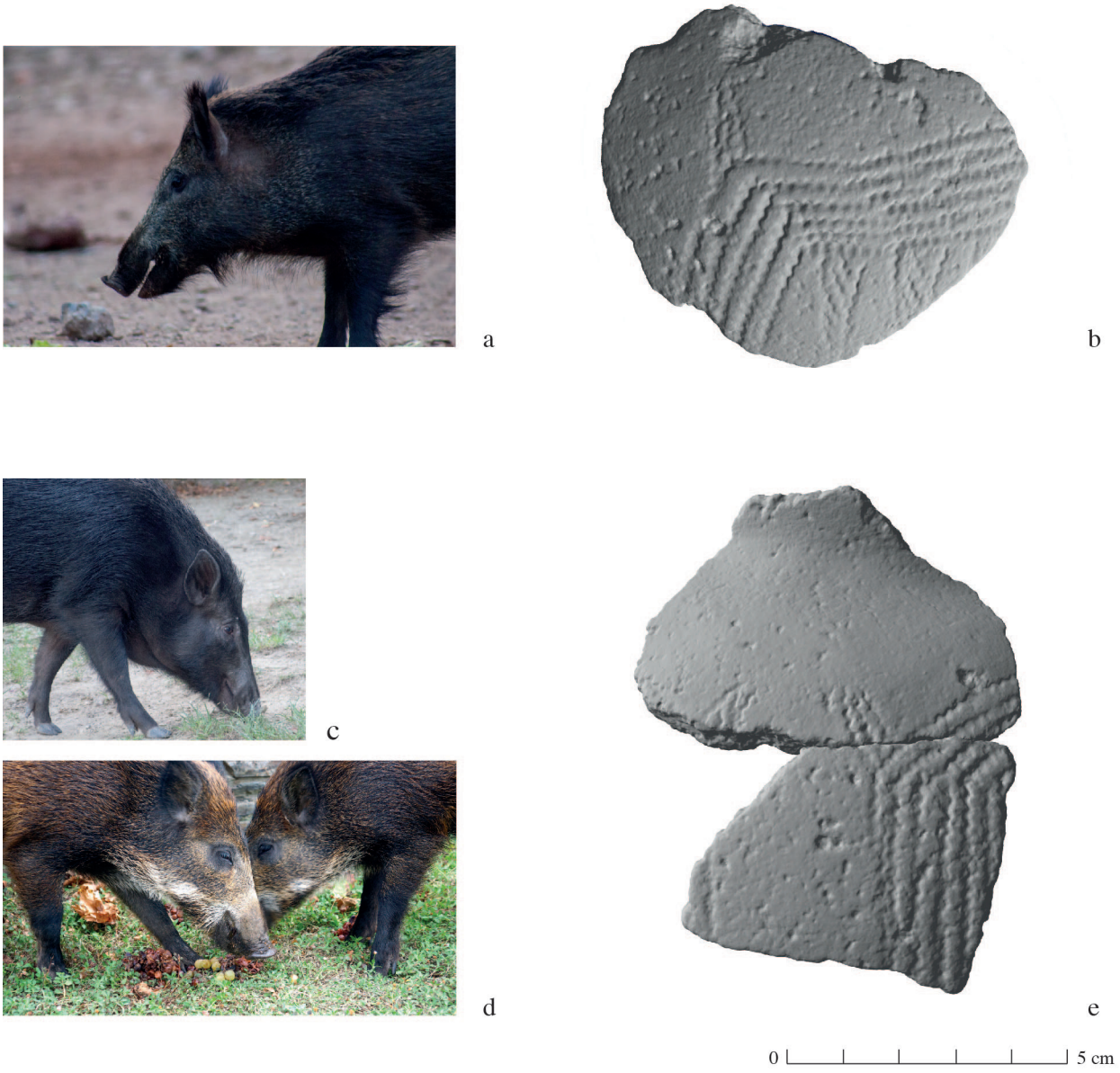


Fig. 6 – The anatomy of the zoomorphs depicted (**b** et **e**) is reminiscent of that of the Suidae, specifically of the *Sus scrofa* (**a**, **c** et **d**). The specimens of sherds L2-L3 (**e**) show the heads down, in an attitude of watering or fighting (**c**-**d**). Picture (**a**) by Esther Garrido under CC BY-NC-ND 2.0 license; picture (**c**) by Hacheme26 CC BY-ND 2.0 license. Picture (**d**) by Sam Romilly CC BY 2.0 license.

Fig. 6 – *L'anatomie des zoomorphes représentés (b & e) rappelle celle des Suidés, plus précisément de* Sus scrofa *(**a**, **c** et **d**). Les spécimens des tessons L2-L3 (**e**) montrent les têtes baissées, dans une attitude d'abreuvement ou de combat (**c**-**d**).*

DISCUSSION

An exceptional vessel?

In the ceramic assemblage from La Corrège, this vessel presents several distinctive features. Up to 18 sherds have been analysed, resulting in two petrographic families: earths with crystalline inclusions and earths with sedimentary inclusions. The vessel we present here is ranked in the last family, and it is distinguished by the presence of carbonates containing detrital elements (quartz, feldspar, white mica and quartzite). Moreover, the paste contains highly altered carbonates during firing. Although this sedimentary formation is present 2 km to the west of the present-day lagoon of Leucate, we cannot rule out the hypothesis of a more distant origin, since it is impossible to conclude whether this vessel is local or imported.

It should also be noted that the macroscopic characteristics of the fabric allows us to distinguish these sherds from the rest of the assemblage both by the colour and texture of the paste (compacity and size of the inclusions) and by the fine thickness of the walls. We cannot go further concerning the forming techniques. On the other hand, the figurative themes and the decoration patterns make this vase unique as the ceramics from La Corrège present exclusively linear and geometric motifs (fig. 8), while no other figurative depiction is known on the French Mediterranean shoreline, apart from the vessel from Grotte des Fées (Leucate) (Guilaine, 1985) of uncertain chronology (Huet, 2018). This vessel is therefore exceptional, not only within the La Corrège site, but also

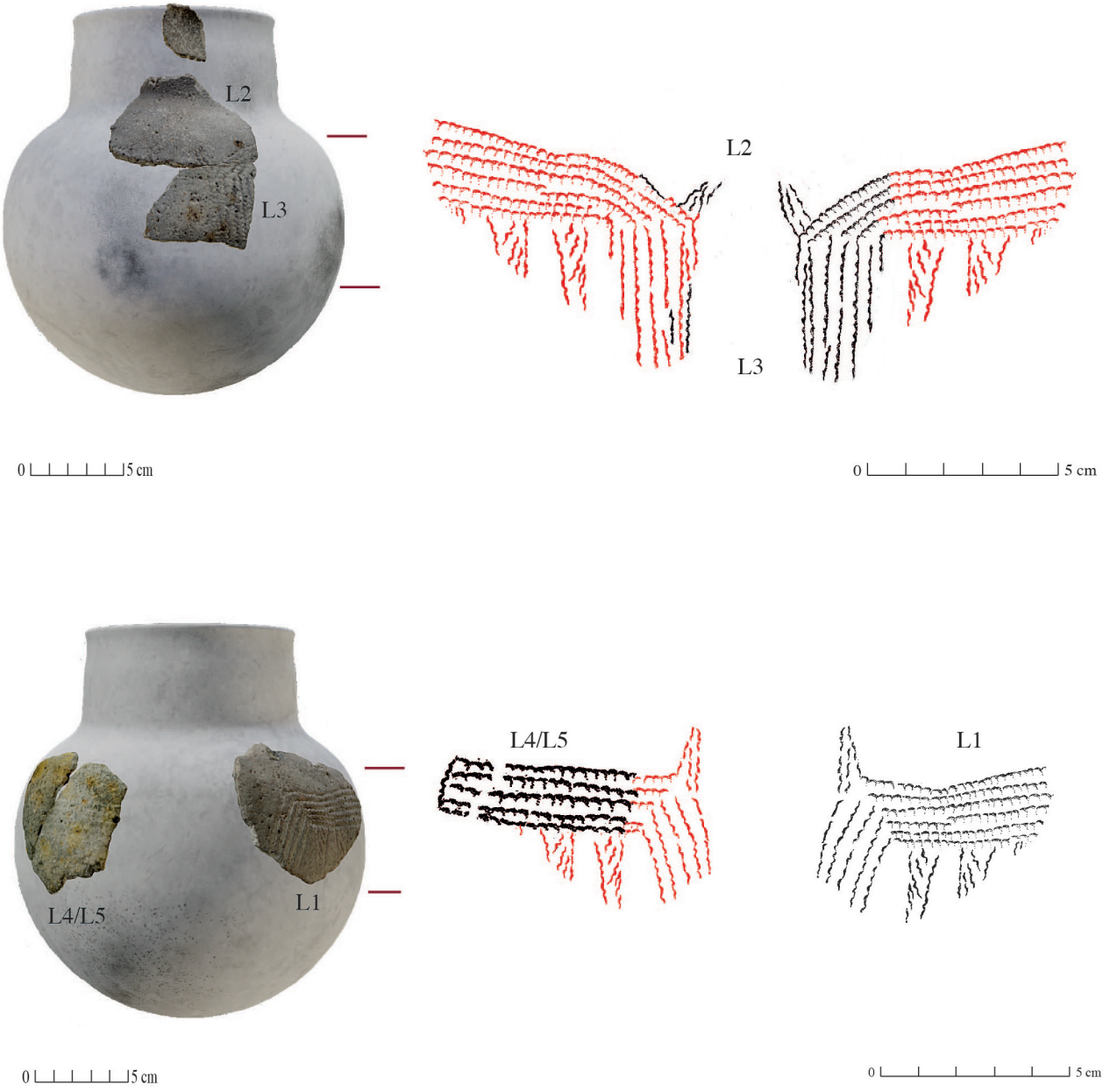


Fig. 7 – Proposition of the decoration pattern following the 3D virtual reconstruction of the vessel and the size and shape of the preserved motifs. In black colour, preserved parts of motifs; in red colour, hypothetical reconstruction using the shape of the best-preserved motif.

Fig. 7 – *Reconstitution de la décoration sur la base de la reconstruction 3D du vase, de la taille et de la forme des motifs préservés. En couleur noire, parties de motifs conservées ; en couleur rouge, reconstruction hypothétique s'inspirant de la forme du motif le mieux préservé.*

within the French cardial horizon. Its uniqueness leads us to consider the possibility of the allochthonous origin of this vessel, given that the circulation of vessels over long distances, sometimes more than 100km, is attested in Early Neolithic Western Mediterranean contexts thus revealing supra-regional interaction networks (Manen and Convertini, 2012; Gabriele *et al.*, 2019).

The incomplete preservation of the decoration of the vessel of La Corrège may cast doubt on its interpretation as figurative zoomorphic motifs, as the combination of horizontal and vertical elements that make up the structure of these motifs is a recurrent graphic pattern both in the simplified representation of zoomorphs within the Schematic graphic horizon and in the design of the well-documented compositions in the Iberian Cardial known as metopes (Bernabeu *et al.*, 2011) (fig. 9a). Several reasons regarding their design lead us to rule out the interpretation of La Corrège's motifs as possible metopes (fig. 9b-c). Indeed, motif L1 shows particular traits that are not in keeping with the geometry, and occasional symmetry, of metopes: firstly, the conjunction between part 1 and 2 does not match the 90º angle observed in the design of most metopes. Secondly, the impressed lines that make up part 1 show a slight change in trajectory, and this change cannot be explained by a surface alteration that could have led to an error by the potter. Thirdly, the different elements comprising the L1 motif do not show the same dimensions, contrary to the case of metopes.

Fig. 8 – Potteries from La Corrège.
The decoration system is mainly based on a structure of ribbons and simple linear or geometric patterns.

Fig. 8 – *Céramiques de La Corrège.*
Le système de décoration est principalement fondé sur une structure de rubans composés de motifs linéaires simples ou géométriques.

Finally, the triangular element located at the conjunction of parts 1 and 2 is unique, and does not correspond to the repetitive patterns observed in metopes. In sum, even though each individual graphic element composing these motifs is part of the Cardial style, the rules for the layout of the elements making up the decor of the vessel of La Corrège are very different from those traditionally identified in this stylistic horizon. Although the metope motifs are the closest decorative pattern, a wider comparison with the entire cardial geometric decorative patterns would be worthwhile. But before doing so, it is imperative to develop an accurate methodological framework. However, this task, though envisaged at a later stage, is currently beyond the scope of this paper. Bearing this in mind, the themes portrayed in this vessel are rather in line with the zoomorphic graphic pattern documented both in Early Neolithic pottery and in the Schematic parietal horizon that follows the expansion of the Neolithic in

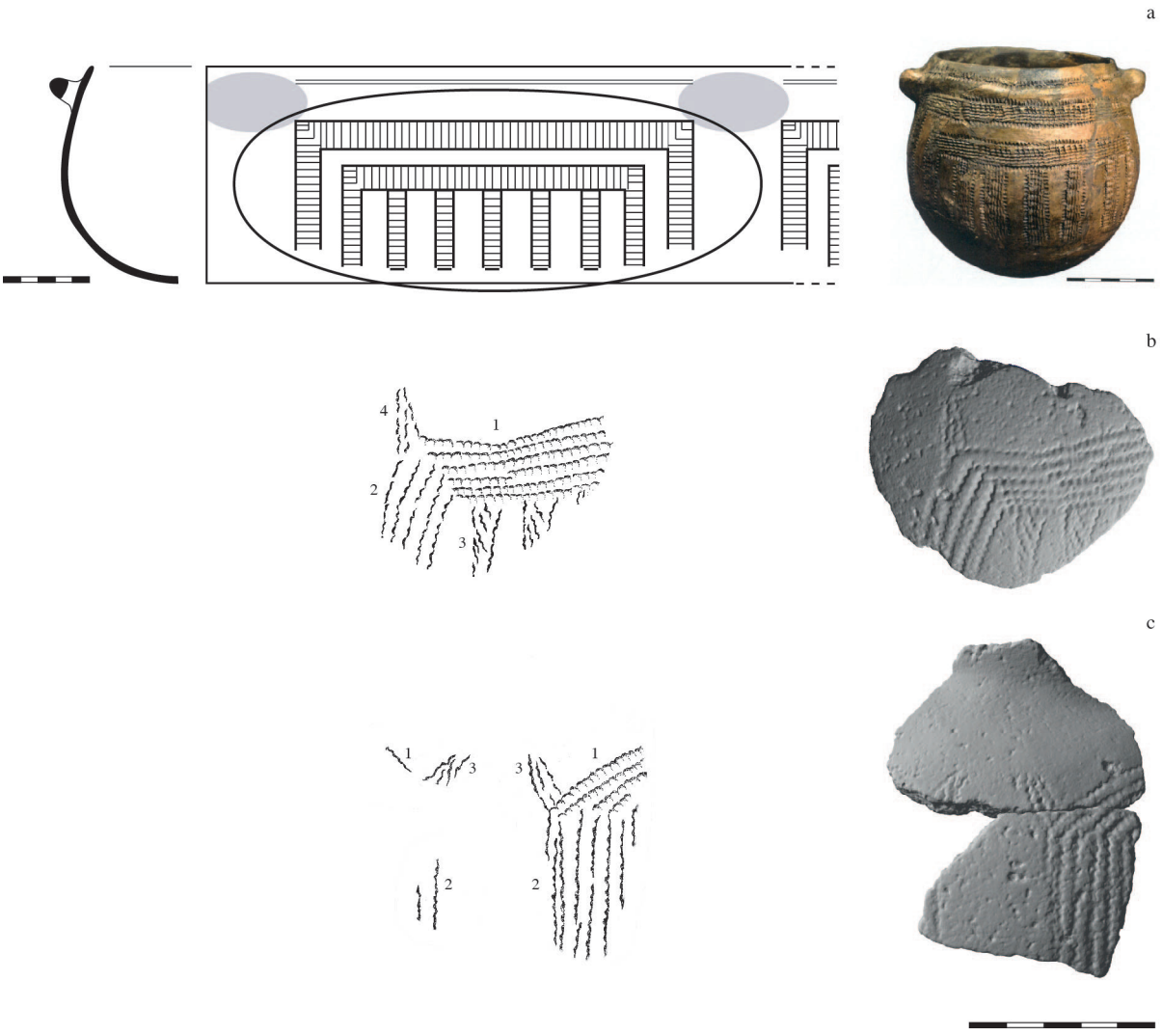


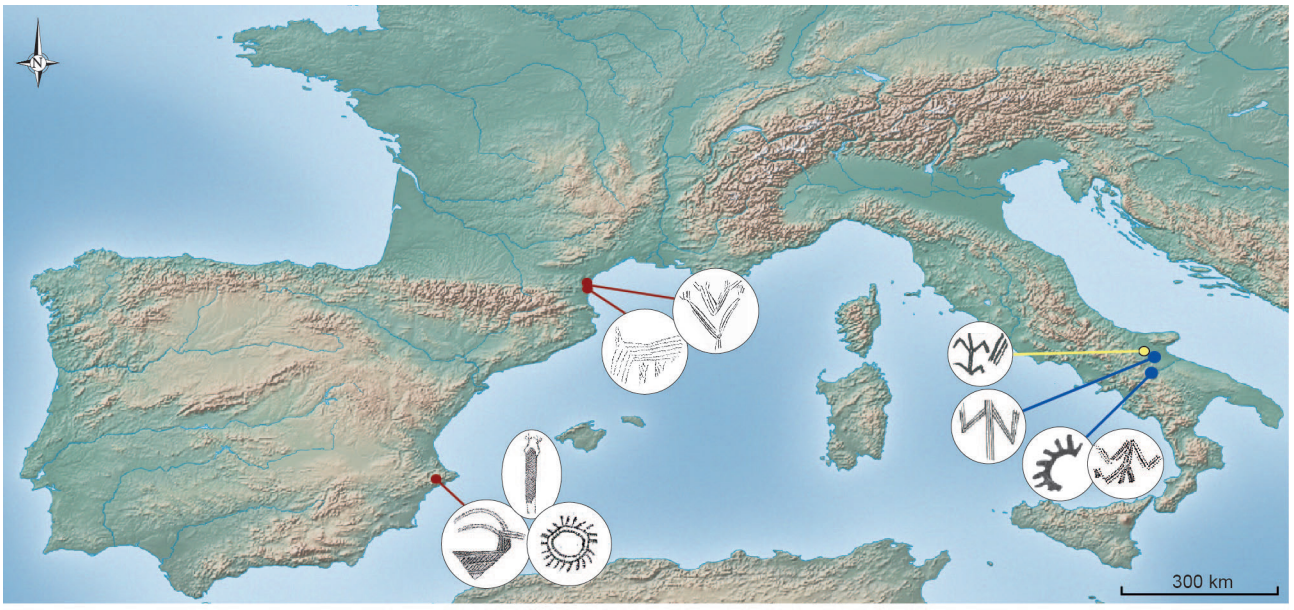
Fig. 9 – The motifs of La Corrège show particular features that do not fit in with the formal structure of the metopes: **a**, vessel 291 from Cova de la Sarsa (Bocairent, Spain) and decorative scheme of metopes depicted in this vase (García Borja, 2017); **b**, sketch and 3D restitution of the sherd L1 of La Corrège; **c**, sketch and 3D restitution of the sherd L2-L3 of La Corrège.

Fig. 9 – *Les motifs de La Corrège présentent des caractéristiques particulières qui ne correspondent pas à celles des décors en métopes : **a**, vase de la Cova de la Sarsa (Bocairent, Espagne) et motifs décoratifs en métopes (García Borja, 2017) ; **b**, dessin et modèle numérique du tesson L1 de La Corrège ; **c**, dessin et modèle numérique des tessons L2-L3 de La Corrège.*

the Western Mediterranean (Guilaine, 2003; Hernández Pérez and Martí Oliver, 1999; Fairén Jiménez, 2004). In both supports, animals are depicted with a simple horizontal stroke that shapes the body and the head, while four vertical strokes display the animal's legs. In some cases, parietal depictions could be more detailed by means of the magnified representation of the antlers and horns of male deer and goats (Acosta, 1983), while these kinds of elaborate zoomorphic depictions are more exceptional on pottery, as it will be discussed below.

Figurative expression on pottery in the Western Mediterranean

In contrast to the French Mediterranean shoreline gap, figurative expression on pottery is well-documented in Early Neolithic settlements throughout the Western Mediterranean, although its distribution is uneven in this area. Horizons from the beginning of the Italian Neolithic (5700-5300 cal. BCE) (Cipolloni Sampò, 2002; Fugazzola *et al.*, 2004; Pessina and Tiné, 2008) contain anthropomorphic (or orants) and zoomorphic depictions, as well as signs that are also found in Iberian Early Neolithic sites, notably around the Valencian regions (5450-5050 cal. BCE) (Bernabeu Aubán *et al.,* 2011; Martí Oliver and Hernández Pérez, 1988; Pérez Botí, 2001; Torregrosa and Galiana, 2001) (fig. 10). Anthropomorphs made by impressing or incising the paste are the most widely portrayed theme in the Western Mediterranean (fig. 10), often interpreted as orants due to the raised position of their arms. They have been identified in different horizons of the Italian Neolithic, *inter alia*, Guadone, Stentinello, Lagnano da Piede or Masseria la Quercia, with strong formal and stylistic variations. In France, only a sequence of simplified anthropomorphs consisting of raised arms has been documented at Grotte



Region	Anthropomorph	Zoomorph	Symbol
Iberian Mediterranean bassin			
French Mediterranean coast	*		
Italy			

Fig. 10 – Figurative phenomenon emerging in Early Neolithic horizons in the Western Mediterranean. Some of the figurative themes represented in ceramic support can be identified throughout this area, while others could have a stronger regional component. *Uncertain chronology.

***Fig. 10** – Phénomène figuratif associé aux horizons du Néolithique ancien de Méditerranée occidentale. Certains des thèmes figuratifs représentés sur support céramique peuvent être identifiés dans toute la zone, tandis que d'autres semblent avoir un ancrage régional plus marqué. *Chronologie incertaine.*

des Fées (Leucate) (Guilaine, 1985). This theme is much more widespread in the Cardial horizon in the Valencian region (Spain) (Martí Oliver and Hernández Pérez, 1988; Pérez Botí, 2001; García Borja, 2017) (fig. 10). The most emblematic examples are those from Cova de l'Or (Beniarrés, Alicante) and Cova de la Sarsa (Bocairent, Valencia). It is worth mentioning an exceptional example from outside this territory, interpreted as an anthropomorphic depiction with certain characteristic elements related to ramiforms, coming from the site of El Portalón de Cueva Mayor (Sierra de Atapuerca, Burgos) (Alday *et al.*, 2019). Alongside these anthropomorphic depictions made by impressing or incising the paste, the clay was also modelled to form protome appliques. This technique was practically only used on vessels from the Early and Middle Italian Neolithic (Tunzi, 2015). Human depictions are also found on other supports, and in particular, on the exceptional limestone block with a sculpted

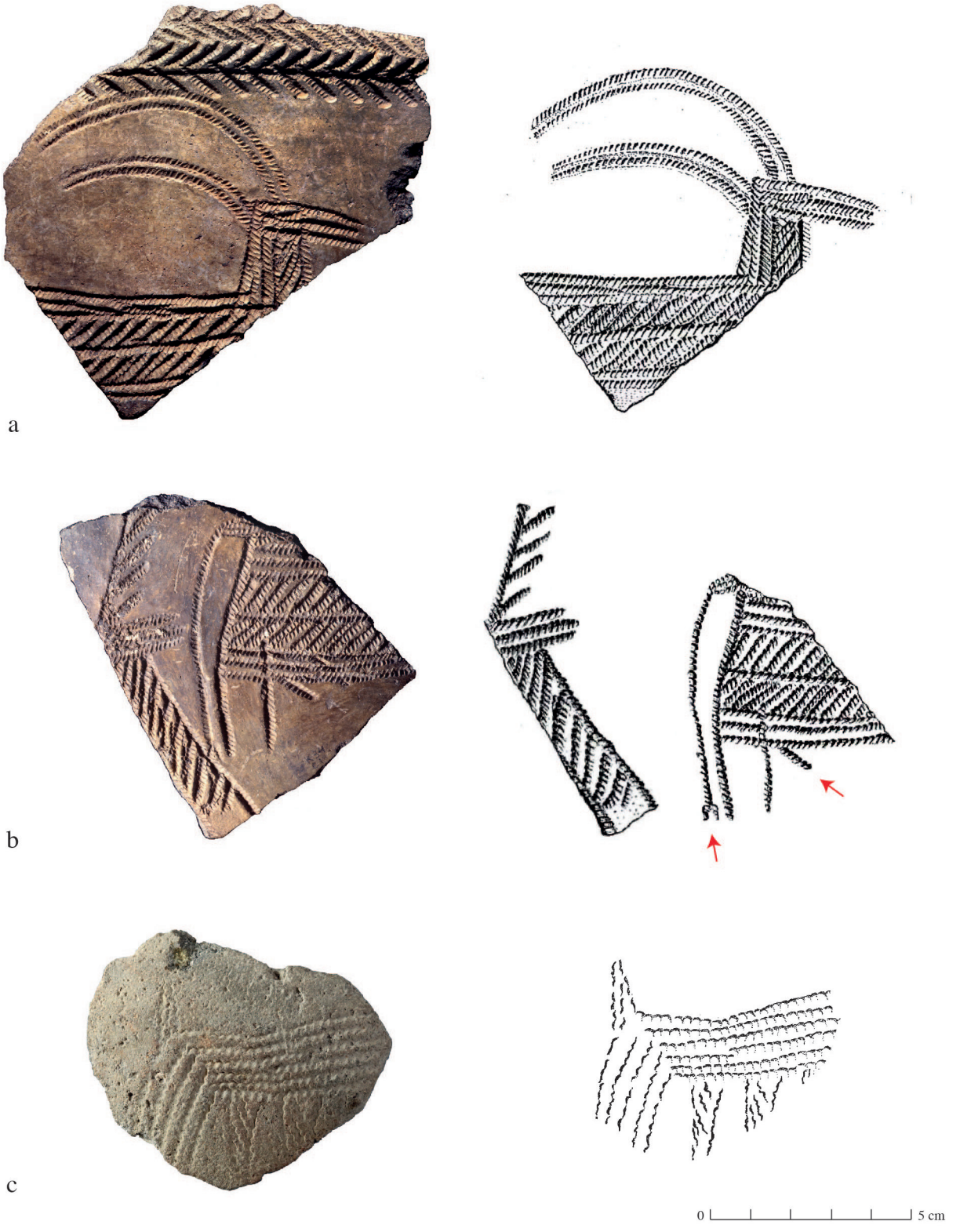


Fig. 11 – Impressed figurative wild animal decorations belonging to the cardial horizon: **a**-**b**, Cova de l'Or (Beniarrés, Spain). The decoration consists of at least an ibex (**a**), a male red deer and a bovine (**b**) (Martí and Hernández, 1988; pictures provided by the Museum of Prehistory of Valencia, Spain); **c**, sherd L1 of La Corrège.

Fig. 11 – *Décorations figuratives d'animaux sauvages réalisées par impressions et appartenant à l'horizon cardial :* ***a*****-*****b****, Cova de l'Or (Beniarrés, Espagne). Le décor se compose d'au moins un bouquetin (****a****), un cerf rouge mâle et un bovin (****b****) (Martí et Hernández, 1988 ; photos fournies par le Musée de Préhistoire de Valence, Espagne) ;* ***c****, tesson L1 de La Corrège.*

human head from the site of Pendimoun (Alpes-Maritimes, France) (Binder *et al.*, 2014).

The thematic spectrum of the first farmers also comprises a series of schematic and standardized signs, including "sun-shaped", "ramiform" or "zigzag" symbols, which are recurrent during the first phases of the Italian and Valencian Early Neolithic (fig. 10).

Finally, zoomorphs are much less widespread. Red deer, ibex, bovid, and even possible butterflies have been recorded (Martí Oliver *et al.*, 2018; Oms *et al.*, 2016b), evoking the symbolic importance of the wild world (fig. 10). In spite of the rarity of the animal theme on pottery, two main techniques can be identified: the portrayal on the surface of a vessel and the modelling of zoomorphic containers or prehensile elements. Here, we will focus on the former.

One of the rare known examples of impressed figurative animal decoration has been documented at Cova de l'Or, a reference site for the first phases of Neolithic settlement in the Western Mediterranean. This consists of two fragments of the same vessel found in levels VI and V (Martí Oliver and Hernández Pérez, 1988; Martí Oliver and Juan-Cabanilles, 2002), with depictions of an ibex, a red deer and a bovine. This vessel belongs to phases 3-4 defined by Bernabeu Aubán *et al.* (2011), corresponding to the classic Cardial (c. 5400-5150 BCE). The chronological horizon is consistent with the new dates obtained for La Corrège, which supports the pertinence of a comparative analysis between these two vessels (fig. 11).

It is impossible to reconstruct the original form of the vessel from Cova de l'Or, so here we will focus on techniques, the formal and spatial conception of the motifs and the nature of the themes. Like at La Corrège, these representations were made by impression with a serrated matrix: impression with a *Cerastoderma* shell at La Corrège and comb impression at Cova de l'Or. The animals are semi-naturalist in both cases, but the structure is cruder for La Corrège with less emphasis on anatomical detail. The juxtaposition of the impressed lines was probably used to reconstruct the corporal volume, but the result is more refined for Cova de l'Or due to the distinction between the silhouette and the internal filling of the body by means of the combination of horizontal and oblique strokes. The depiction of sexual and anatomical details in the vessel of Cova de l'Or, such as the thickening of the bovine's tail towards the rump and the presence of hairs on the distal end, is noteworthy. Concerning perspective, in both vessels depictions are portrayed with a *composite view*: in the motifs of La Corrège only one ear is visible, in a strict optical-perspective profile, but L1 shows almost three legs from the front; while the ibex of Cova de l'Or shows its horns in an oblique biangular perspective, characteristic of the Levantine graphic horizon and of some Schematic phases, while the bovine shows a front view of hind legs and genitals.

The theme is similar for both vessels and consists of the representation of wild species typical of Mediterranean Holocene forests. The identification of a wild goat (*Capra pyrenaica*), a red deer (*Cervus elaphus)* and a bovine (*Bos taurus*) at Cova de l'Or is beyond doubt. These species were all present in the site environment, and their bone remains were discovered in the occupation levels of the site (Pérez Ripoll, 1980). At La Corrège, the faunal corpus is more limited due to the nature and preservation conditions of the site, but the wild boar seems to have been identified among hunted species, despite the difficulties in discriminating between wild and domestic species (Guilaine *et al.*, 1984; Rowley-Conwy *et al.*, 2012).

As regards the composition, in contrast with the diversity of species portrayed on the vessel from Cova de l'Or, the vase from La Corrège focuses seemingly on *Suidae*. The layout and organization of the spacing between the motifs are also different: the sherd depicting a male reed deer and a bovine shows a narrow spatial adjustment that even forces the inclination of the former to conform to the position of the latter. This tight spatial organization, also observed in the little overlaps between the horn of the ibex and the upper border, could be due to the fact that the vase was densely decorated. The composition consisted of these ethologically inconsistent species makes difficult to infer a clear narrative meaning, although they may convey some kind of symbolic and mythological connotation, which is no longer detectable. The vase from La Corrège, on the contrary, could have a neater spatial organisation following the symmetrical "mirror" layout of the animals represented two by two. In this case, a narrative sense portraying a confrontational or watering attitude of animals could also be inferred.

In spite of these differences, the vessel from Cova de l'Or remains the closest parallel. This affinity with the Iberian zone is reinforced by the analysis of the whole pottery production (Manen and Guilaine 2010). Indeed, the diversity of impression methods with a *Cerastoderma* shell identified on the ceramics from La Corrège (simple impression perpendicular to the vessel wall, simple tangential impression, impression with the back of the shell or natis impression) is clearly similar to the Cardial style from Catalonia (Cova Bonica, Cova Gran, Can Sadurní or Cova del Toll) (Oms, 2017) and the Valencian region (Cova de l'Or, Cova de les Cendres or Cova de la Sarsa) (Bernabeu Aubán *et al.*, 2011; García Borja, 2017). The morphology of the studied vessel, which is small with a spherical belly and a short neck, is widespread in the Valencian region. Bernabeu proposes a function linked to the transport of ochre for the Valencian region, based on the presence of colouring materials detected in some vessels (Bernabeu Aubán, 1989).

The pottery productions of La Corrège and Cova de l'Or thus demonstrate shared practices, but we cannot rule out the possibility that the vessel with figurative decoration from La Corrège was imported, thereby being "intrusive" in this corpus. In the past, the history of research on the Neolithisation of the Western Mediterranean resulted in the systematic assumption that movements occurred from France towards Spain, but recent research tends to outline complex and multidirectional spheres of interaction (Manen *et al.*, 2019).

The characteristics of the vessel with figurative decoration from La Corrège thus contribute to the discussion on the complex graphic trend accompanying the emergence and expansion of the Neolithic, on both portable and parietal supports. As highlighted above, agropastoral societies shared a common graphic background, characterized by certain themes or schematic symbols (Guilaine, 2003). However, we observe divergent means and forms of expression and strong disparities in the spatial dispersion of this symbolic spectrum that must be put in relation to marked regional particularities in the expansion of the Neolithic. In this regard, the graphic record is particularly rich and complex in Iberian Peninsula, especially in the Mediterranean basin. In this area, and in addition to the abundant collections of ceramics with figurative decorations, we must stress, on one hand, the huge number of decorated rock shelters and their widespread geographic extension, and on the other hand, the existence of at least two distinct parietal graphic horizons: Schematic and Levantine (Hernández Pérez and Martí Oliver, 2000-2001; Hernández Pérez and Martínez Valle, 2003; Hernández Pérez, 2016). The former, characterised by the portrayal of schematic or figurative semi-naturalistic motifs, is also found in Italian and French regions, whereas the latter, characterized by formal naturalism and a narrative component focused on humans and wild animals, seems to be specific to the Iberian Mediterranean basin. Schematic parietal horizon and Early Neolithic ceramics share most of their themes, such as anthropomorphs, symbols and zoomorphs, so although no radiocarbon date of parietal paintings is available, a part of the sequence of the Schematic art has been attributed to the first phases of Neolithic and the cardial ceramic horizon (Hernández, 2016). On the contrary, Levantine horizon seems to be exclusively parietal. Nonetheless, some scholars have proposed the zoomorphs portrayed on the vessel from Cova de l'Or as a direct parallel to the Levantine naturalist horizon (Martí Oliver and Juan-Cabanilles, 2002). This proposal has been widely contested by those who argue a Mesolithic chrono-cultural framework for these paintings (García *et al.*, 2012), and it has been recently nuanced by Martí Oliver (2004), who proposes that these motifs would be part of a Neolithic art with little presence of zoomorphs, and that they would be in the line that leads to the emergence of Levantine rock art. The absence of a relative chronology, based on portable parallels, together with the difficulty in obtaining radiocarbon dates of their pigments (López-Montalvo *et al.*, 2017) have led to an absolute uncertainty regarding the chrono-cultural context of this graphic horizon (Almagro Basch, 1951; Jordá Cerdá, 1966; McClure *et al.*, 2008; Viñas, 2012). Furthermore, the association of the Schematic horizon with the first farmers has implicitly led to the rejection of a naturalistic-narrative horizon within the framework of Neolithic expansion. The origins of this polarisation go back to the systematic opposition between Neolithic and Mesolithic ways of life, and the determination to attribute a unique and stereotypical mode of expression to Neolithic communities (Martí Oliver, 2003; García Puchol *et al.*, 2004; McClure *et al.*, 2008, López Montalvo, 2018).

However, the vessels from La Corrège and Cova de l'Or highlight the strong variability of graphic expressions during the cardial horizon and show to what extent it can sometimes be difficult to attribute a particular formal trait to a given graphic horizon due to significant overlaps between them. The former introduces the narrative in its decorative composition; while the latter shows formal features– perspective or anatomical details– that do not fit with the extreme simplification of Schematic art. Therefore, the emergence and development of a graphic expression of naturalist and narrative trend in this context cannot be excluded, especially if we bear in mind that the sublimation of the wild is part of the symbolic dimension of both Schematic and Levantine rock art.

CONCLUSION

The vessel from La Corrège is the only example of a semi-naturalist motif made on a ceramic support documented in the southern French Early Neolithic. However, it is not possible to determine whether this absence of figurative expression on pottery is correlated with a biased methodology (difficulties in identifying themes?), or if it represents an actual gap showing a differentiated cultural history.

The formal, thematic and technical parallels established between the vessels from La Corrège and Cova de l'Or provide new arguments in favour of close links between the Languedoc and the Valencian regions Cardial horizons. These graphic expressions thus contribute, in the same way as the other categories of remains (Bernabeu Aubán, 1989; Manen and Perrin, 2009; Rigaud *et al.*, 2018) to the definition of cultural landscapes and spheres of influence of Neolithic communities, while allowing us to approach their symbolic system. In this sense, the themes portrayed on both vessels evoke the world of the wild, which could be paradoxical as it enters into contradiction with the agro-pastoral economy developed by the first Neolithic communities. However, different evidences lead us to believe that the settlement and development of the Neolithic is based on a disharmonic system where the socio-symbolic universe is disconnected from the economic organization of these first farming societies (Garine, 2006; Sidéra, 2000). Not only graphic depictions on parietal and portable supports denote a sublimation of the wild, giving greater importance to particularly dangerous species or those whose hunting involves greater risk; other socio-symbolic activities, such as certain practices and funerary offerings or the manufacture of personal ornaments made from wild animal bones (red deer, wild boar or fox), show that wild fauna and probably big game hunting were particularly important for the symbolic and identity construction of the first agricultural societies (Helmer *et al.*, 2004; López-Montalvo, 2018). Concerning funerary practices, the funerary

record during the Early Neolithic is somewhat opaque, given the few burials documented so far. The picture provided during the Middle and Late Neolithic is far to be homogenous, and the offerings do not conform to a recurrent pattern (Bernabeu Aubán *et al.*, 2001; Chambon and Leclerc, 2003; García Puchol *et al.*, 2012; Rojo Guerra *et al.*, 2016; Zemour, 2011). Despite this marked diversity, in certain contexts the funeral trousseau contains tools made of wild animal bones, while the association of weapons, bows and arrows would suggest indirectly a relationship of the deceased with hunting and probably also warfare (Sidéra, 2003; Arbogast, 2010). Other aspect that permits to assess the symbolic relationship between Neolithic societies and wild animals has to do with the occurrence of animal bones deposits in burials as food offerings, ritual commensality or a bestiary to accompany the buried. (Arbogast, 2013; Rojo Guerra *et al.*, 2016). Regarding personal ornaments, various studies point to a preferential use of wild animal bones in the production of ornaments, among which pendants made with deer or wild boar canines proliferate, as well as imitations made with other raw materials (Sénépart, 1993; Pascual Benito, 1998; Sidéra, 2004; Oliva Poveda, 2012).

If in the symbolic sphere the wild seems to play a prominent role, other aspects invite us to think that the radical and systematic dichotomy between domestic and wild worlds does not seem entirely satisfactory in light of data provided by the Neolithic record pointing out the exploitation of wild resources (Vigne, 2007; Antolín, 2015). In this sense it is worth noting that hunting took place throughout the Neolithic period, even more intensely during the Middle and Late Neolithic in certain regions (Pérez Ripoll, 1987; Sidéra, 2000). However, the data do not provide a homogeneous picture either in terms of the intensity of these practices, their duration or the species hunted, aspects which in many cases were more dependent on environmental factors than cultural ones. On the other hand, the close relationship that the first agro-pastoral societies had with wild fauna is also reflected in the latest data provided by genetic studies in the process of domestication of certain species, as is the case of pigs. The analysis of ancient genomic data on modern European pigs has highlighted that they have experienced such a substantial genomic turnover that the original ancestor from Near East can hardly be detected at the end of the Neolithic (Frantz *et al.*, 2019). The results of the research conducted by Frantz *et al.* do not imply an independent domestication process of this species, but a continuous management of herds that were intentionally interbred with local wild boar. This study indirectly points to a human-mediated selection and, consequently, a relatively continuous contact with the wild populations.

In short, the vessel from La Corrège provides new arguments regarding both the highly diversified means and forms of symbolic expression accompany the diffusion of the Neolithic economy, and the fact that systematic opposition between schematic graphic expression and naturalist expression does not seem to be relevant. In this context, the characterization of the diversity of the graphic expressions of the first farmers' communities is an important challenge for future research. At the same time, it seems interesting to approach ceramic decoration from the perspective of graphic production. The study of graphic traditions and their large-scale distribution can provide new arguments for the analysis of the spatial and temporal dynamics of Mediterranean neolithisation and enhance our understanding of the symbolic system of the first agricultural societies, driver of identity and social cohesion.

Acknowledgements. Authors are grateful to the Museum of Narbonne for according us the access to the ceramic assemblages of La Corrège, and especially to Laure Barthet and Aurélie Devos. We thank the Museum of Prehistory of Valencia (Spain), and especially Joaquim Juan-Cabanilles, for providing us the pictures of the two decorated sherds from Cova de l'Or. We also thank Antoine Laurent (TRACES UMR 5608), Héctor Arcusa (FUNGE-Arcadia, University of Valladolid, Spain) and Íñigo García ((National Distance Learning University, UNED, Spain) for their invaluable help during the elaboration of the graphic support of this paper, and Giovanna Radi for her support in the comprehension of the Italian Neolithic context. We are also grateful for the reviewers' reading and corrections, which have undoubtedly improved the final version of this paper.
This research was funded by the project "PROCOME" (ANR-13-CULT-0001-01) of the French National Research Agency (ANR) and the project "NEOSOCWESTMED" (Nº628428) of the 7th European Union's Research and Innovation Funding Programme Marie Curie Actions- IntraEuropean Fellowship.

SUPPLEMENTARY DATA

S1 File – 3D reconstruction model of the vase of La Corrège using Sketchup open-source software.

DOI : https://doi.org/10.34847/nkl.b102qwmh

Le document déposé est un modèle 3D sous format PLY. Il est nécessaire de télécharger le fichier .zip, de l'extraire dans un dossier et d'ouvrir le fichier .PLY avec, par exemple, le logiciel libre MESHLAB (https://www.meshlab.net/#download).

Le document est également visualisable sur la plateforme Sktechfab : https://skfb.ly/6YEZo

En cliquant sur le DOI, vous accèderez à la plateforme Nakala sur laquelle l'ensemble des données supplémentaires publiées dans le *Bulletin de la Société préhistorique française* seront déposées. Vous y trouverez l'intégralité des métadonnées associées à chacune des annexes publiées en cliquant sur l'onglet « Afficher la liste complète des métadonnées ». Les données publiées sont adossées à un type de licence choisi par les auteurs. Vous trouverez l'ensemble des informations utiles à l'utilisation des données en cliquant sur la licence utilisée.

BIBLIOGRAPHICAL REFERENCES

Acosta P. (1983) – Técnicas, estilo, temática y tipología en la pintura rupestre esquemática hispana, *Zephyrus*, 36, p. 13-25.

Alday A., Pérez-Romero A., Iriarte E., Francés Negro M., Arsuaga J-L., Carretero J-M. (2019) – Pottery with ramiform-anthropomorphic decoration from El Portalón de Cueva Mayor site (Sierra de Atapuerca, Burgos) and the globalized symbolic world of the first Neolithic, *Quaternary International*, 515, p. 125-137.

Almagro Basch M. (1951) – La cronología del arte levantino de España, *Crónica del VI Congreso Arqueológico del Sudeste, Alcoy 1950*, Cartagena, Seminario de Arqueología y Numismática Aragonesas del Instituto Fernando el Católico, p. 67-80.

Antolín F. (2015) – Among early farmers, shifting agriculture and transhumance. A critical view of the economic models proposed for the Neolithic groups of the northeastern Iberian Peninsula and a contribution from the seed and fruit record, *Revista Arqueologia del Ponent*, 25, p. 11-45.

Arbogast R.-M. (2010) – La chasse au cerf au Néolithique : un gibier par excellence ?, *Archéopages*, 28, p. 16-19.

Arbogast R.-M. (2013) – Food offerings in graves from the Danubian Neolithic (5500-4900 B.C) in the Upper Rhine valley, *Anthropozoologica*, 48, 2, p. 255-261.

Berger J.-F., Guilaine J. (2009) – The 8200 cal BP abrupt environmental change and the Neolithic transition: A Mediterranean perspective, *Quaternary International*, 200, 1-2, p. 31-49.

Bernabeu Aubán J. (1989) – *La tradicion cultural de las ceramicas impresas en la zona oriental de la peninsula iberica*, Valencia, Servicio de Investigación prehistórica/Diputación provincial (coll. Trabajos varios, 86), 158 p.

Bernabeu Aubán J., García Borja P., Gómez Pérez J.L., Molina Balaguer L. (2011) – El componente decorativo en las producciones cerámicas, *in* J. Bernabeu Aubán & M.A. Rojo Guerra (dir.), *Las primeras producciones cerámicas. El VI milenio CAL AC en la península ibérica*, Valencia, Universitat de València - Departament de Prehistòria i Arqueología (coll. Saguntum - Número Extraordinario, 12), p. 17-33.

Bernabeu Aubán J., Manen C., Pardo-Gordo S. (2017) – Spatial and temporal diversity during the Neolithic spread in the Western Mediterranean : the first pottery productions, *in* O. García Puchol & D.C. Salazar García (dir.), *Times of Neolithic Transition along Western Mediterranean*, Springer, p. 373-397.

Bernabeu Aubán J., Molina Balaguer LL., García Puchol O. (2001) – El mundo funerario en el horizonte cardial valenciano. *Un registro oculto. SAGUNTVM-PLAV*, 33, p. 27-36.

Bernabò Brea L. (1950) – Il Neolitico a ceramica impressa e la sua diffusione nel Mediterraneo, *Revue d'études ligures*, XVI, 1-3, p. 25-36.

Binder D., Angeli L., Gomart L., Guilaine J., Manen C., Maggi R., Muntoni I.m., Panelli C., Radi G., Tozzi C., Arobba D., Battentier J., Brandaglia M., Bouby L., Briois F., Carré A., Delhon C., Gourichon L., Marinval P., Nisbet R., Rossi S., Rowley-Conwy P., Thiébault S. (2017) – Modelling the earliest north-western dispersal of the Mediterranean Impressed Wares: new data and Bayesian chronicles, *Documenta Praehistorica*, XLIV, p. 54-77.

Binder D., Clop Garcia X., Convertini F., Manen C., Sénépart I. (2010) – Les productions céramiques du Néolithique ancien entre Provence et Catalogne, *in* C. Manen, F. Convertini, D. Binder, I. Sénépart (dir.), *Premières sociétés paysannes de Méditerranée occidentale : structures des productions céramiques*, Paris, Société préhistorique française (coll. Mémoires de la Société préhistorique française, 51), p. 115-129.

Binder D., Hamon C., Bellot-Gurlet L., Beyries S., Pradeau J.-V., Vautier F., Voldoire O. (2014) – First Sculpted Human Face in the Western Mediterranean Early Neolithic, *Cambridge Archaeological Journal*, 24, 1, p. 1-17.

Bocquet-Appel J.-P., Naji S., Vander Linden M., Kozlowski J.K. (2009) – Detection of diffusion and contact zones of early farming in Europe from the space-time distribution of ^{14}C dates, *Journal of Archaeological Science*, 36, 3, p. 807-820.

Bosch Lloret A., Chinchilla Sánchez J., Tarrús Galter J. (2011) – *El poblat lacustre del neolític antic de La Draga. Excavacions 2000-2005*, Banyoles, Museu d'Arqueologia de Catalunya / Centre d'Arqueologia Subaquàtica de Catalunya (coll. Monografies del CASC), 256 p.

Chambon P., Leclerc J. (2003) – *Les pratiques funéraires néolithiques avant 3500 av. J.-C. en France et dans les régions limitrophes,* Table ronde, Saint-Germain-en-Laye, 15-17 juin 2001, Paris, Société préhistorique française (coll. Mémoires de la Société préhistorique française, 33), 333 p.

Cipolloni Sampò M. (2002) – Rendina, Basilicata, *in* M.A. Fugazzola Delpino, A. Pessina et V. Tiné (dir.), *Le Ceramiche impresse nel Neolitico Antico. Italia e Mediterraneo*, Roma, Istituto Poligrafico e Zecca dello Stato (coll. Studi di Paletnologia), p. 667-676.

Fairén Jiménez S. (2004) – Arte rupestre, estilo y territorio : la construcción de un paisaje neolítico en las comarcas centromeridionales valencianas, *Zephyrus*, 57, p. 167-182.

Frantz L.a.f., Haile J., Lin A.T., Scheu A., Geörg C., *et al.* (2019) – Ancient pigs reveal a near complete genomic turnover following their introduction to Europe. Proceedings of the National Academy of Sciences of the United States of America (PNAS) 116 (35), p. 17231-17238.

Fugazzola Delpino M.a., Pessina A., Tiné V. (2004) – *Civiltà dell'argilla*, Roma, Soprintendenza speciale al Museo nazionale Preistorico Etnografico « Luigi Pigorini », 170 p.

Gabriele M., Convertini F., Verati C., Gratuze B., Jacomet S., Boschian G., Durrenmath G., Guilaine J., Lardeaux J.-M., Gomart L., Manen C., Binder D. (2019) – Long-distance mobility in the North-Western Mediterranean during the Neolithic transition using high resolution pottery sourcing, *Journal of archaeological science: Reports*, 28, p. 102050.

García Borja P. (2017) – *Las ceramicas neoliticas de la Cova de la Sarsa (Bocairent, Valencia). Tipologia, estilo e identidad*, Valencia, Diputacion de Valencia (coll. Trabajos varios del SIP, 120), 299 p.

García J., Collado H., Nash G. (2012) – *The Levantine Question*, Budapest, Archaeolingua, 425 p.

García-Martínez De Lagrán I., Fernández-Domínguez E., Rojo Guerra M.A. (2018) – Solutions or illusions? An analysis of the available palaeogenetic evidence from the origins of the Neolithic in the Iberan Peninsula, *Quaternary International*, 470 (B), p. 353-368.

García-Puchol O., Bernabeu Aubán J., Barton C.M., Pardo-Gordó S., McClure S.B., Díez-Castillo A. (2018) – A Bayesian Approach for Timing the Neolithization in Mediterranean Iberia, *Radiocarbon*, 60, 1, p. 181-205.

García-Puchol O., Molina Balaguer L., García Robles M.R. (2004) – El arte levantino y el proceso de neolitización en el arco mediterráneo peninsular : el contexto arqueológico y su significado, *Archivo de Prehistoria Levantina*, 25, p. 61-90.

García-Puchol O., Aura Tortosa J.E., McClure S.H. (2012) – Mesolithic and Neolithic funerary practices in the central Mediterranean region of Spain, *in* J.F. Gibaja, A.F. Carvalho, Ph. Chambon (dir.), *Funerary practices in the Iberian peninsula from the Mesolithic to the Chalcolithic*, Oxford, BAR (coll. International Series, 2417), p. 41-50.

Garine É. (2006) – Petits et gros gibiers des agriculteurs Duupa (Cameroun), *in* I. Sidéra (dir.), *La chasse : pratiques sociales et symboliques*, Nanterre, Maison de l'Archéologie et de l'Ethnologie (coll. Colloques de la Maison René Ginouvès, 2), p. 111-120.

Guilaine J. (1985) – Le Néolithique ancien de la grotte des Fées à Leucate (Aude, France) et ses implications, *in* M. Liverani, A. Palmieri et R. Peroni (dir.), *Studi di paletnologia in onore di Salvatore M. Puglisi*, Roma, Università La Sapienza, p. 505-516.

Guilaine J. (2003) – *Arts et symboles du Néolithique à la protohistoire*, Paris, Errance (coll. des Hespérides), 300 p.

Guilaine J. (2007) – Du concept de céramique imprimée méditerranéenne à la genèse du Cardial, *in* J. Guilaine, C. Manen et J.-D. Vigne (dir.), *Pont de Roque-Haute : nouveaux regards sur la néolithisation de la France méditerranéenne*, Toulouse, Archives d'Écologie préhistorique, p. 21-38.

Guilaine J. (2013) – The Neolithic Transition in Europe: some comments on gaps, contacts, arrhythmic model, genetics, *in* E. Starnini (dir.), *Unconformist Archaeology : papers in honour of Paolo Biagi*, Oxford, Archaeopress (coll. British archaeological Reports, International Series, 2528), p. 55-64.

Guilaine J., Freises A., Montjardin R. (1984) – *Leucate-Corrège : habitat noyé du Néolithique cardial*, Toulouse/Sète, Centre d'Anthropologie des Sociétés rurales/Musée Paul Valéry, 270 p.

Helmer D., Gourichon L., Stordeur D. (2004) – A l'aube de la domestication animale : imaginaire et symbolisme animal dans les premières sociétés néolithiques du nord du Proche-Orient, *in* P. Bonte, A.-M. Brisebarre, D. Helmer, H. Sidi-Maamar (dir.), *Domestications animales : dimensions sociales et symboliques : hommage à Jacques Cauvin*, Paris, Publications scientifiques du Muséum national d'histoire naturelle (coll. Anthropozoologica, 39/1), p. 143-163.

Hernández Pérez M. (2016) – Arte Macroesquemático vs. Arte Esquemático. Reflexiones en torno a una relación intuida, *Del neolític a l'edat del bronze en el Mediterrani occidental. Estudis en homenatge a Bernat Martí Oliver*, Valencia, Diputación provincial, Servicio de Investigación prehistórica, p. 481-490.

Hernández Pérez M.S., Martí Oliver B. (1999) – Art rupestre et processus de néolithisation sur la façade orientale de l'Espagne méditerranéenne, *in* J. Vaquer (dir.), *Le Néolithique du nord-ouest méditerranéen, 24e Congrès préhistorique de France, Carcassonne, 1994*, Paris, Société préhistorique française, p. 257-266.

Hernández Pérez M.S., Martí Oliver B. (2000-2001) – El arte rupestre de la fachada mediterránea: entre la tradición epipaleolítica y la expansión neolítica, *Zephyrus*, 53-54, p. 241-265.

Hernández Pérez M.S., Martínez Valle R. (2003) – L'art levantin et l'art schématique espagnols, *in* R. Desbrosse, A. Thévenin (dir.), *Préhistoire de l'Europe : des origines à l'Âge du Bronze, Actes du 125e congrès national des sociétés historiques et scientifiques, Lille, 2000*, Paris, Comité des travaux historiques et scientifiques, p. 109-126.

Hofmanová Z., Kreutzer S., Hellenthal G., Sell C., Diekmann Y., Díez-Del-Molino D., Van Dorp L., López S., Kousathanas A., Link V., Kirsanow K., Cassidy L.M., Martiniano R., Strobel M., Scheu A., Kotsakis K., Halstead P., Triantaphyllou S., Kyparissi-Apostolika N., Urem-Kotsou D., Ziota C., Adaktylou F., Gopalan S., Bobo D.M., Winkelbach L., Blöcher J., Unterländer M., Leuenberger C., Çilingiroğlu Ç., Horejs B., Gerritsen F., Shennan S.J., Bradley D.G., Currat M., Veeramah K.R., Wegmann D., Thomas M.G., Papageorgopoulou C., Burger J. (2016) – Early farmers from across Europe directly descended from Neolithic Aegeans, *Proceedings of the National Academy of Sciences*, 113, 25, p. 6886-6891.

Huet T. (2018) – Une revue de l'iconographie du début du Néolithique à la fin de lâge du Bronze (ca. 5700-750 avant notre ère) en France, *in* J. Guilaine, D. Garcia (dir.), *La Protohistoire de la France*, Paris, Hermann Editeurs, p. 221-249.

Isern Sardó N., Zilhao J., Fort J., Ammerman A.J. (2017) – Modeling the role of voyaging in the coastal spread of the Early Neolithic in the West Mediterranean, *Proceedings of the National Academy of Sciences of the United States of America*, 114, 5, p. 897-902.

Jordá Cerdá F. (1966) – Notas para una revisión de la cronología del arte rupestre levantino, *Actas del XII Congreso Nacional de Arqueología*, Zaragoza, Secretaría General de los Congresos Arqueológicos, p. 85-100.

López-Montalvo E. (2018) – Hunting scenes in Spanish Levantine rock art: An unequivocal chrono-cultural marker of Epipalaeolithic and Mesolithic Iberian societies?, Quaternary International, Special issue; 472 (B), p. 205-220.

López-Montalvo E., Roldán C., Badal E., Murcia-Mascarós S., Villaverde V. (2017) – Identification of plant cells in black pigments of prehistoric Spanish Levantine

rock art by means of a multi-analytical approach; A new method for social identity materialization using chaîne opératoire, *PLoS ONE*, 12, 2, doi.org/10.1371/journal.pone.0172225.

Manen C. (2002) – Structure et identité des styles céramiques du Néolithique moyen entre Rhône et Ebre, *Gallia Préhistoire*, 44, p. 121-166.

Manen C., Convertini F. (2012) – Neolithization of the Western Mediterranean: Pottery productions, circulation and recombination, *in* M. Borrell, F. Borrell Tena, J. Bosch Argilagós, X. Clop Garcia, M. Molist Montaña (dir.), *Xarxes al Neolític : Congrés Internacional : Xarxes al neolític. Circulació i intercanvi de matèries, productes i idees a la Mediterrània occidental (VII-III mil.lenni aC)*, Gavà, Museu de Gavà (Rubricatum ; 5), p. 363-368.

Manen C., Guilaine J. (2010) – Aspects géographiques et chronoculturels du Néolithique ancien languedocien, *in* C. Manen, F. Convertini, D. Binder, I. Sénépart (dir.), *Premières sociétés paysannes de Méditerranée occidentale : structures des productions céramiques*, Paris, Société préhistorique française (coll. Mémoires de la Société préhistorique française, 51), p. 179-189.

Manen C., Perrin T. (2009) – Réflexions sur la genèse du Cardial « franco-ibérique», *De Méditerranée et d'ailleurs... Mélanges offerts à Jean Guilaine*, Toulouse, Archives d'Écologie préhistorique, p. 427-443.

Manen C., Perrin T., Guilaine J., Bouby L., Bréhard S., Briois F., Durand F., Marinval P., Vigne J.-D. (2019) – The Neolithic transition in the western Mediterranean: A complex and non-linear diffusion process - The radiocarbon record revisited, *Radiocarbon*, 61, 2, p. 531-571.

Manen C., Salanova L. (2010) – Les impressions de coquilles marines à front denté dans les décors céramiques néolithiques, *in* C. Manen, F. Convertini, D. Binder, I. Sénépart (dir.), *Premières sociétés paysannes de Méditerranée occidentale : structures des productions céramiques*, Paris, Société préhistorique française (coll. Mémoires de la Société préhistorique française, 51), p. 57-64.

Martí Oliver B. (2003) – El arte rupestre levantino y la imagen del modo de vida cazador: entre lo narrativo y lo simbólico, *in* T. Tortosa, J. Santos (dir.), *Arqueología e iconografía. Indagar en las imágenes*, Roma, L'Erma di Bretschneider, p. 59-75.

Martí Oliver B. (2004) – Cultura material y arte rupestre esquemático en el País Valenciano, Aragón y Cataluña, *in* J. Martínez García, M. Hernández Pérez (dir.), *Actas del Congreso de Arte Rupestre Esquemático en la Península Ibérica*, Almería, Aprovélez, p. 119-147.

Martí Oliver B., Hernandez Pérez M. (1988) – *El Neolític valencià. Art rupestre i cultura material*, Diputació de València, Servei d'Investigació Prehistòrica, 114 p.

Martí Oliver B., Juan Cabanilles J., García Borja P. (2018) – Las decoraciones figurativas y simbólicas de las cerámicas del Neolítico antiguo en las comarcas meridionales valencianas, *in* J.A. Soler Díaz, R. Pérez Jiménez, V. Barciela González (dir.), *Rupestre. Los primeros santuarios. Arte Prehistórico en Alicante*, Alicante, Museo Arqueológico de Alicante-Gobierno Provincial de Alicante, p. 109-125.

Martí Oliver B., Juan-Cabanilles J. (2002) – Les decoracions ceràmiques neolítiques i la seua relació amb les pintures rupestres dels abrics de la Sarga, *in* M. Hernández, J.M. Segura Martí (dir.), *La Sarga. Arte rupestre y territorio*, Alcoy, Ayuntamiento de Alcoy y Caja de Ahorros del Mediterráneo, p. 147-170.

McClure S.B., Molina Balaguer L., Bernabeu Aubán J. (2008) – Neolithic rock art in context: Landscape history and the transition to agriculture in Mediterranean Spain, *Journal of Anthropological Archaeology*, 27, 3, p. 326-337.

Oliva Poveda M. (2012) – Los adornos, producto de intercambio de ideas, materias y tecnología. Contactos e influencias entre las Comunidades Prehistóricas en el Noreste Peninsular entre el VI-IV milenios ane, *in* M. Borrell, F. Borrell Tena, J. Bosch Argilagós, X. Clop Garcia, M. Molist Montaña (dir.), *Xarxes al Neolític : Congrés Internacional : Xarxes al neolític. Circulació i intercanvi de matèries, productes i idees a la Mediterrània occidental (VII-III mil.lenni aC)*, Gavà, Museu de Gavà (coll. Rubricatum, 5), p. 257-264.

Oms Arias F.X. (2017) – *La neolitització del nord-est de la peninsula Ibèrica*, Barcelona, Societat Catalana d'arqueologia, 134 p.

Oms Arias F.X., Petit Mendizábal M.A., López Cachero F. (2016) – Motius figuratius en la ceràmica del neolític antic inicial i art (macro)esquemàtic a Catalunya, *Del neolític a l'edat del bronze en el Mediterrani occidental. Estudis en homenatge a Bernat Martí Oliver*, Valencia, Diputación provincial - Servicio de Investigación prehistórica, p. 491-499.

Oms F.X., Martín A., Esteve X., Mestres J., Morell B., Subirà M., Gibaja J. (2016) – The Neolithic in Northeast Iberia: Chronocultural Phases and 14C, *Radiocarbon*, 58, 2, p. 291-309.

Pascual Benito J.L. (1998) – *Utillage óseo, adornos e ídolos neolíticos valencianos*, Valencia, Servicio de Investigación prehistórica - Diputación provincial de Valencia (coll. Trabajos varios, 95), 358 p.

Pérez Botí G. (2001) – La Cova de la Sarsa (Bocairent, Valencia). La decoración figurada de su cerámica neolítica. Una aproximación cronocultural, *Recerques del Museu d'Alcoi*, 10, p. 43-58.

Pérez Ripoll M. (1980) – La fauna de vertebrados, *in* B. Martí Oliver (dir.), *Cova de l'Or (Beniarrès, Alicante). Vol. II*, Valencia, Diputación provincial - Servicio de Investigación prehistórica (Trabajos varios ; 65), p. 193–255.

Pérez Ripoll M. (1987) – La caza en una economía de producción prehistórica y sus implicaciones en el arte Levantino, *Lucentum,* 6, p. 23–27.

Pessina A., Tine V. (2008) – *Archeologia del Neolitico : l'Italia tra 6. e 4. millennio a.C*, Roma, Carocci (Manuali universitari ; 57), 375 p.

Radi G. (2010) – Les séquences de la céramique imprimée en Italie, *in* C. Manen, F. Convertini, D. Binder, I. Sénépart (dir.), *Premières sociétés paysannes de Méditerranée occidentale : structures des productions céramiques*, Paris, Société préhistorique française (coll. Mémoires de la Société préhistorique française, 51), p. 133-147.

Rigaud S., Manen C., García-Martínez De Lagrán I. (2018) – Symbols in motion: Flexible cultural boundaries

and the fast spread of the Neolithic in the western Mediterranean, *PLoS ONE*, 13, 5, 10.1371/journal.pone.0196488.

Rojo Guerra M., García, I., Garrido R., Tejedor C., Subirà E., García J., Sesma J., Gibaja J.f., Unzu M., Palomino A.l., Jiménez I., Arroyo E., Arcusa H. (2016) – Enterramientos del Neolítico antiguo en el interior peninsular: nuevos datos para una actualización de la evidencia empírica, *Del neolític a l'edat del bronze en el Mediterrani occidental. Estudis en homenatge a Bernat Martí Oliver*, Valencia, Diputación provincial - Servicio de Investigación prehistórica, p. 181-210.

Rowley-Conwy P., Albarella U., Dobney K.M. (2012) – Distinguishing Wild Boar from Domestic Pigs in Prehistory: A Review of Approaches and Recent Results, *Journal of World Prehistory*, 25, 1, p. 1-44.

Rowley-Conwy P., Gourichon L., Helmer D., Vigne J.-D. (2013) – Early domestic animals in Italy, Istria, the Tyrrhenian Islands and Southern France, *in* S. Colledge, K. Dobney, K. Manning, S. Shennan (dir.), *The Origins and Spread of Domestic Animals in Southwest Asia and Europe*, Walnut Creek, California, Left Coast Press, p. 161-194.

Sénépart I. (1993) – Quelques remarques à propos de l'exploitation de la faune sauvage dans l'industrie des os néolithique du sud-est de la France (Languedoc oriental, basse vallée du Rhône, Provence), *in* J. Desse, F. Audoin-Rouzea (dir.), *Exploitation des animaux sauvages à travers le temps*, XIIIe Rencontres internationales d'archéologie et d'histoire d'Antibes – IVe colloque international de l'Homme et l'Animal, Société de recherche interdisciplinaire, Antibes, 15-17 octobre 1992, Anthropozoologica HS 1, p. 293–301.

Shennan S.J., Crema E.R., Kerig T. (2014) – Isolation-by-distance, homophily, and "core" *vs.* "package" cultural evolution models in Neolithic Europe, *Evolution and Human Behavior*, 36, 2, p. 103-109.

Sidéra I. (2000) – Animaux domestiques, bêtes sauvages et objets en matières animales du Rubané au Michelsberg : de l'économie aux symboles, des techniques à la culture, *Gallia Préhistoire*, 42, p. 107-194.

Sidéra I. (2004) – De l'usage des produits de la chasse pour différencier des hommes, in P. Chambon, J. Leclerc (dir.), *Les pratiques funéraires néolithiques avant 3500 av. J.-C. en France et dans les régions limitrophes, Actes de la table ronde de Saint-Germain-en-Laye, 200*1, Paris, Société Préhistorique Française (coll. Mémoire de la Société Préhistorique Française ; 33), p. 91–98.

Terradas X., Palomo A., Piqué R. (2020) – El poblado neolítico de La Draga (Banyoles, Girona). Resultados de las excavaciones recientes y nuevos retos de investigación, *in* A. Carretero Peréz et C. Papi Rodes (dir.), *Actualidad de la investigación arqueológica en España I (2018-2019). Conferencias impartidas en el Museo Arqueológico Nacional*, Madrid p.251-269.

Torregrosa Jiménez P., Galiana Botella M.F. (2001) – El arte esquemático del Levante peninsular: una aproximación a su dimension temporal, *Millars*, XXIV, p. 153-198.

Tunzi Sisto A.M. (2015) – *Venti del Neolitico, uomini del rame : preistoria della Puglia settentrionale*, Foggia, Claudio Grenzi editore, 270 p.

Vigne J.-D. (2007) – Exploitation des animaux et néolithisation en Méditerranée nord-occidentale, *in* J. Guilaine, C. Manen et J.-D. Vigne (dir.), *Pont de Roque-Haute : nouveaux regards sur la néolithisation de la France méditerranéenne*, Toulouse, Archives d'Écologie préhistorique, p. 221-301.

Viñas Vallverdú R. (2012) – Superimpositions in Spanish Levantine rock art: previous proposals and new evidence for a reassessment, *in* J. García Arranz, H. Collado Giraldo, G. Nash (dir.), *The Levantine Question*, Budapest, Archaeolingua, p. 55-80.

Zemour A. (2011) – Les pratiques funéraires au début du Néolithique en Méditerranée nord-occidentale sont-elles homogènes ?, *in* I. Sénépart, T. Perrin, E. Thirault, S. Bonnardin (dir.), *Marges, frontières et transgressions. Actualité de la recherche, Actes des 8e Rencontres méridionales de Préhistoire récente, Marseille, 7-8 novembre 2008*, Toulouse, Archives d'Écologie Préhistorique, p. 251-264.

Zvelebil M., Lillie M. (2000) – Transition to agriculture in eastern Europe, *in* T.D. Price (dir.), *Europe's first farmers*, Cambridge, Cambridge University Press, p. 57-92.

Esther Lopez-Montalvo
CNRS – UMR 5608 TRACES
Université Toulouse Jean Jaurès
5 allées Antonio Machado
31058 Toulouse cedex 2
esther.lopez-montalvo@univ-tlse2.fr

Claire Manen
CNRS – UMR 5608 TRACES
Université Toulouse Jean Jaurès
5 allées Antonio Machado
31058 Toulouse cedex 2
claire.manen@univ-tlse2.fr

Jean Guilaine
Collège de France
11 place Marcelin-Berthelot
75005 Paris
jguilaine@wanadoo.fr

François Baleux
CNRS – UMR 5608 TRACES
Université Toulouse Jean Jaurès
5 allées Antonio Machado
31058 Toulouse cedex 2
francois.baleux@univ-tlse2.fr

Fabien Convertini
Inrap Méditerranée – ASM UMR 5140
561 rue Étienne Lenoir
30900 Nîmes
fabien.convertini@inrap.fr