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Olivia Rivero, Diego Garate, Sergio Salazar, IñakiIntxaurbe



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# The Cantabrian Lower Magdalenian striated hinds on scapulae: towards a new definition of a graphic morphotype

Olivia Rivero<sup>1</sup>  
Diego Garate<sup>2</sup>  
Sergio Salazar<sup>3</sup>  
IñakiIntxaurbe<sup>4</sup>

## Abstract

From the graphic point of view, the theme of the "striated hind" is a true fossil director of the Cantabrian Lower Magdalenian. Represented for the most part on scapulae in the case of portable art, it also possesses its correlation in parietal art. The C14 dates currently available do not allow any doubts about its chrono-cultural attribution. However, the concept of "striated engraving", referring to a technical/stylistic resource, has been used much more expansively to characterize chronologically a large number of representations of doubtful attribution.

Therefore, this paper will define, from a precise study of technical characteristics involving both microscopic and formal analysis, the "striated hind" morphotype, as opposed to the notion of "striated engraving", which will also be reviewed in the light of the formal and technical data available.

This redefinition will enable us to address more precisely the dispersion across space and time of this graphic resource so characteristic of the Cantabrian Lower Magdalenian.

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**Keywords:** Cantabrian Lower Magdalenian. Striated Hind. Microscopic analysis. Formal analysis.

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<sup>1</sup>Departamento de Prehistoria, Historia Antigua y Arqueología, Universidad de Salamanca. Cervantes s/n, 37002 Salamanca, Spain.

<sup>2</sup>Instituto Internacional de Investigaciones Prehistóricas de Cantabria (IIIPC), Universidad de Cantabria, Gobierno de Cantabria, Santander. Edif. Interfacultativo, Universidad de Cantabria. Avda. Los Castros s/n, 39005 Santander, Spain.

<sup>3</sup>Departamento de Prehistoria, Historia Antigua y Arqueología, Universidad de Salamanca. Cervantes s/n, 37002 Salamanca, Spain.

<sup>4</sup>Departamento de Mineralogía y Petrología. EuskalHerrikoUnibertsitatea/Universidad del País Vasco. BarrioSarriena s/n, 48940 Leioa, Spain.

## 1. Introduction: origin and problems around the concept of "striated engraving" and its chrono-cultural attribution.

The definition of the striated hinds on scapulae as a typical Cantabrian expression arose from the first excavations undertaken in the cave of Altamira, where 6 fragments were recovered displaying the graphic morphotype that will be defined here (Alcalde del Río, 1906). The most important collection of scapulae known to date was located immediately afterwards, during the excavation in the cave of El Castillo (1911) under the direction of H. Alcalde del Río and H. Obermaier (Almagro, 1976). Equivalent parietal examples were found in the same cave and discoveries have taken place uninterruptedly since then.

Despite the long tradition in the knowledge of this graphic expression, it has still not been defined precisely. This lack of definition is mainly due to three factors:

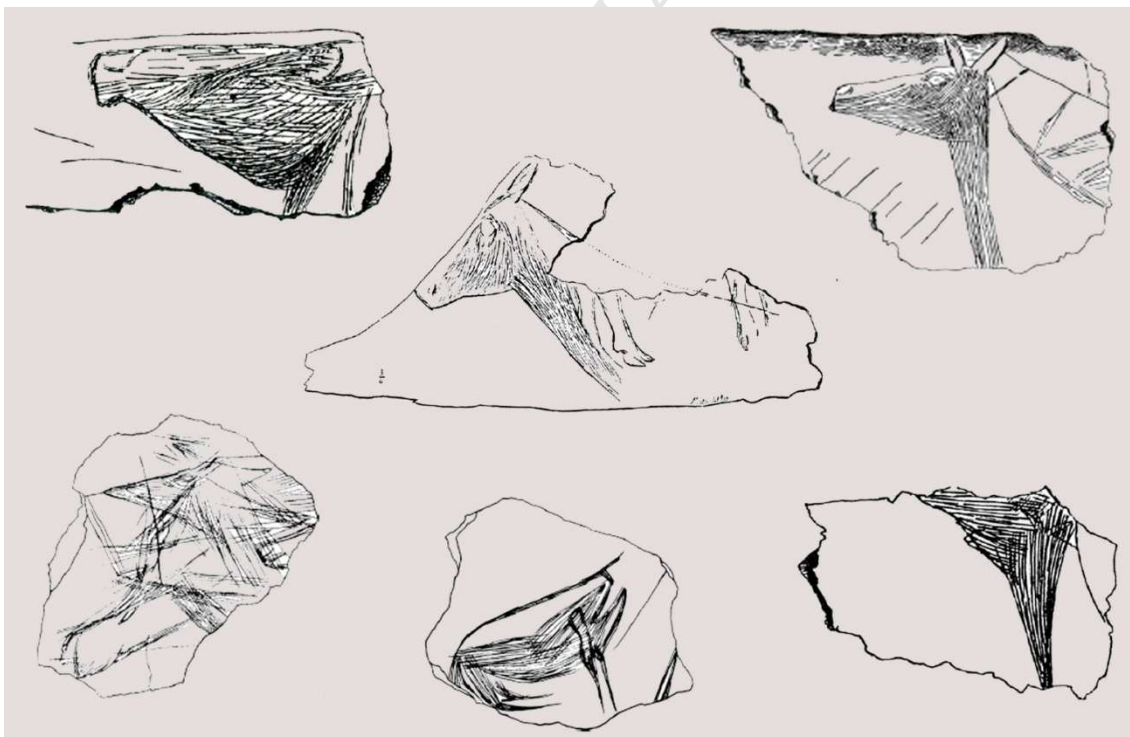
a) The debate about its chrono-cultural attribution. This arose from the moment of the find of the first examples in Altamira. The excavators considered that the scapulae belonged to two different and successive moments in the Upper Palaeolithic, the Solutrean and the Magdalenian (Alcalde del Río, 1906). From here, an intense debate was generated regarding the chrono-cultural attribution of this convention (Breuil, Obermaier, 1935; Jordá, 1959; Barandiarán, 1972; Utrilla, 1979; Corchón, 1981; Villaverde, 1994; González Sainz, 1993). This was finally overcome with the finds of three scapulae perfectly contextualized archaeologically, in the sites of Altamira and El Mirón.

In the case of Altamira, a scapula engraved with two hind heads was located in the external survey excavated by H. Alcalde del Río. Both the scapula and the archaeological level were dated, obtaining dates for the object of  $14,830 \pm 60$  BP and for the context of between 15,300-15,700 BP (de las Heras et al., 2012). In addition, one of the first scapula recovered by H. Alcalde del Río provided a date of  $14,480 \pm 250$  BP (Valladas et al. 1992). This is to say, the direct results are somewhat younger than the dates for the archaeological layers. Similarly, two scapula fragments with striated engravings, one of them with a perfectly executed hind's head (González Morales, Straus, 2009) were recovered in Level 17 at El Mirón cave (dated between 15,400-15,700 BP).

However, although the debate has been settled in the case of portable art, it remains open in the field of parietal art, where the representations of animals using striated engraving far exceed the geographical and chronological framework of the engraved hinds in the Cantabrian Lower Magdalenian, as we will see later.

b) The laxity and inaccuracies in the technical-functional terminology used by research. In most cases, the evaluations or analyses of the technical procedures used the authors' subjective impression rather than an exact knowledge of the techniques, as will be described below. The concept of "striated engraving" is a paradigmatic example of the misuse of technological vocabulary. The term was coined by H. Alcalde del Río, H. Breuil and L. Sierra when referring to the hinds at Altamira and El Castillo (Alcalde del Río et al., 1911, p. 210) and has been reproduced later by numerous authors, in some cases also using the term "multiple stroke" or "chiaroscuro technique", referring to various representations in the portable and parietal art of Altamira, Castillo, La Peña de Candamo, El Parpalló, etc. (Jordá, 1959; Barandiarán, 1972; Almagro, 1976; Utrilla, 1979; Gómez Fuentes, Bécáres 1979; Villaverde et al., 1986; Corchón, 1986; Fernández Lombera, 2003; González Morales, Straus, 2009; among others).

c) The lack of a review of the entire corpus, especially in its parietal aspect, using unified criteria with a view to characterizing this type of representation. In fact, this is the first time that a catalogue of all portable and parietal motifs has been made.



**Figure 1.** Tracings of the engraved scapulae from the cave of Altamira (Alcalde del Río, 1906; Cartailhac, Breuil, 1906).

This study will propose a revision of striated engravings from both the technical and formal points of view, as well as an update of the known archaeological record and its chronology. This will allow us to clearly demarcate the

characteristics of this graphic morphotype as fossil director of the Cantabrian Lower Magdalenian.

## 2. Striated hinds: a fossil director of the Cantabrian Lower Magdalenian.

As mentioned above, evidence of striated hinds in both portable and parietal versions has been known since practically the start of research. In spite of the early identification of the morphotype, to date no exhaustive record has determined the number of representations in either of the two recognized variants. It has therefore been necessary to create the corpus of figures in Cantabrian Spain. In some cases, this task has been hampered or limited by the scarce information available for some of the ensembles and this has prevented an accurate count of the figures and of their characteristics.

### 2.1. Striated hinds in Cantabrian portable art.

The technique of striated engraving appears, in the Cantabrian Lower Magdalenian record, exclusively linked to representations on deer scapulae. These have been located in various caves distributed along the Cantabrian corridor, such as Altamira (Cartaiac, Breuil, 1906), El Castillo (Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003), El Juyo (Freeman, Echeagaray, 1982), Rascaño (González Echeagaray, Barandiarán, 1979, 1981), El Pendo (Montes, Muñoz, 2001), El Cierro (Gómez Fuentes, Bécares, 1979; Álvarez-Fernández et al., 2016) and El Mirón (González Morales, Straus, 2009).

Based on the available information and the revision of the engraved scapulae from El Castillo and El Cierro, the total number of bones attesting to the "striated technique" now stands at 49; most of them located in the stratigraphic sequence at El Castillo (up to 33, of which 23 definitely display figurative decoration). The rest are distributed among the mentioned sites with a practically testimonial presence in most of them. The information regarding the distribution of the scapulae is as follows:

Site	Scapulae	Figures	Hinds	Other animal
El Castillo	33	56	29	27
Altamira	8	12	11	1
El Juyo	2	2	1	1
El Pendo	2	2	1	1
El Mirón	2	2	2	0
Rascaño	1	1	0	1
El Cierro	1	2	1	1

TOTAL	49	77	45	32
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Table I. Corpus of striated hindson portable objects from the Cantabrian Region.

Regarding the represented themes, the problem of material conservation due to the fragility of the scapulae hinders a correct definition of the thematic corpus. Among the 33 examples from El Castillo, in at least 10 of them it is practically impossible to determine the represented motive (Almagro 1976: pieces No. 7, 22, 25, 26, 27, 28, 29, 30, 32 and 33), and more than half contain some undetermined depiction (51.5%) [17 scapulae]. Out of the total number of recovered specimens in the Cantabrian Region, there are representations that are difficult to identify on 21 of them.

Among the 77 figurative representations identified, the hinds dominate (59.7%), although other subjects such as stag, ibex, horses or *bovidae* are identified. 55.1% [27 pieces] of the scapulae present at least one certain depiction of a hind, while they are only absent on a specimen from El Rascaño, decorated with a possible bison (González Echegaray and Barandiarán, 1979: Fig. 2, Lam IX), another from El Juyo, on which a horse has been identified (Freeman and González Echegaray, 1982: 161-162, Fig. 1 and 6), and on seven of the 23 scapulae from El Castillo with figurative decoration (Almagro, 1976: pieces No. 6, 10, 11, 17, 20, 23, 24).

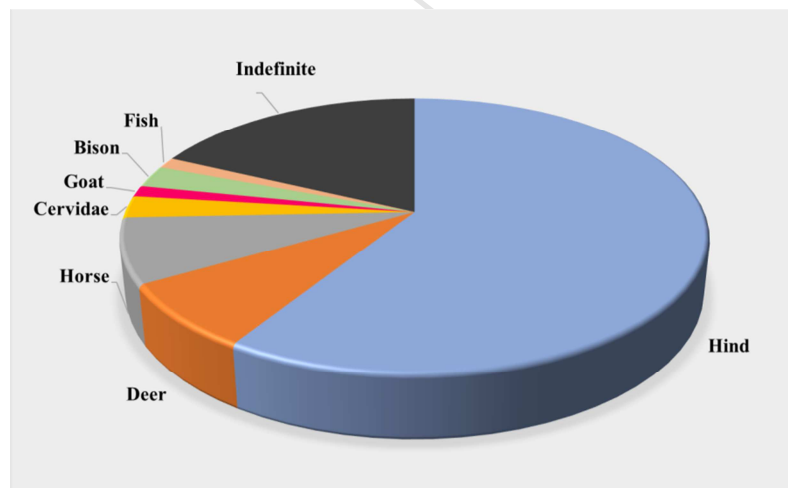


Figure 2. Thematic distribution on scapulae with striated hinds in the Cantabrian Region.

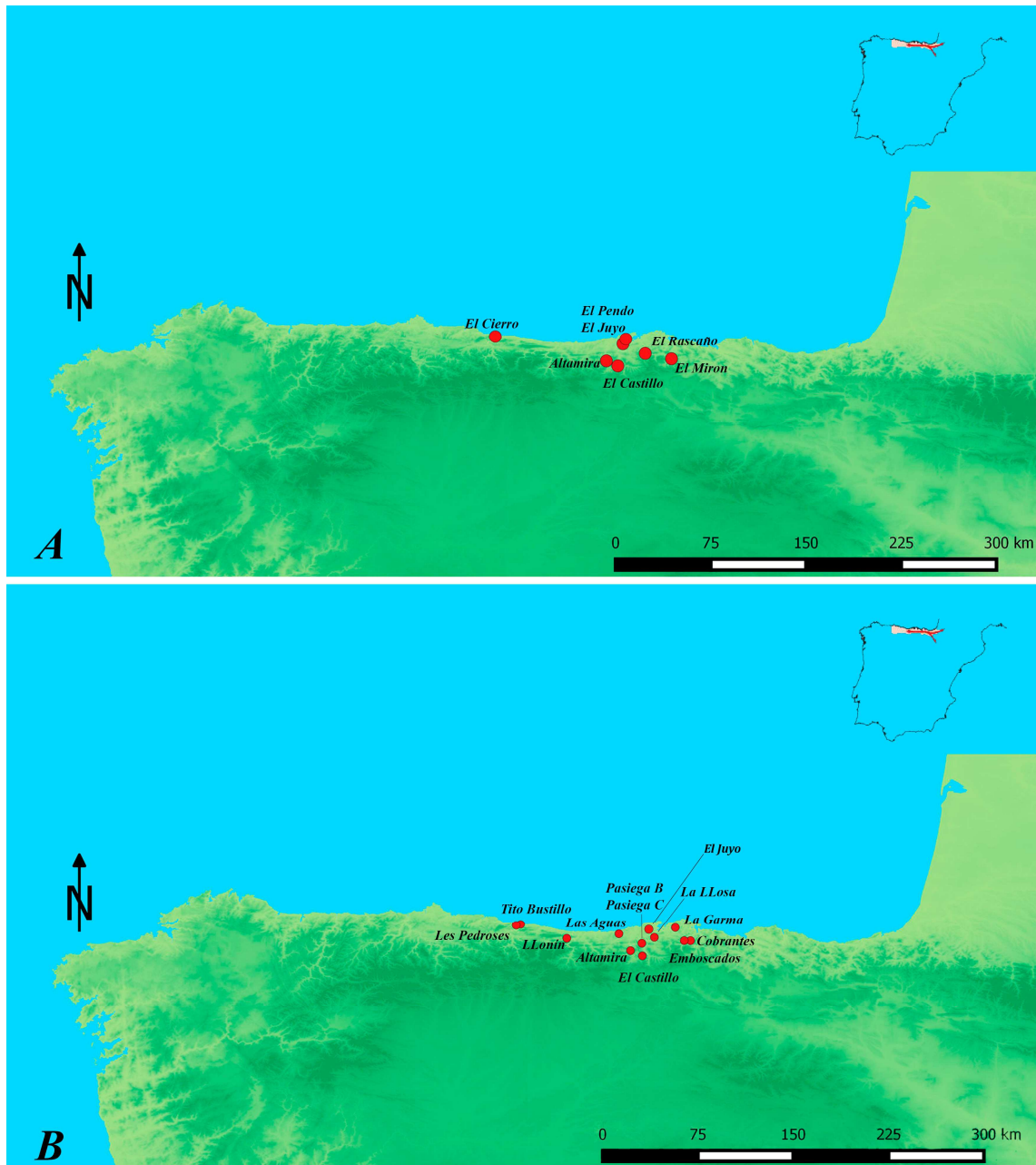


Figure 3. Map of the Cantabrian Region showing the location of the sites with portable art (A) and parietal art (B) ensembles containing striated hinds.

Therefore, the themes represented on the scapulae are mostly figurative, with hinds dominating extensively and a close relationship is observed between the selected support, the theme represented and the technique used.

## 2.2. Striated hinds in Cantabrian rock art.

In contrast, on parietal supports, the technique of striated engraving appears in wider geographical and chronological contexts, which generates some controversy.

By restricting the analysis exclusively to the figurations of striated deer identical to those found on deer scapulae, the number of figures comes to 118 (and 1 doubtful). These are distributed in the caves of Les Pedroses (Martinez-Villa, 2018), Tito Bustillo (Balbín and Moure, 1982), Llonín (Berenguer, 1979; Fortea et al., 2004), Las Aguas (Montes Barquín et al., 2016), Altamira (Breuil and Obermaier, 1935), El Juyo (González and Freeman, 2015), El Castillo (Alcalde del Río et al., 1911), Pasiega B and C (Breuil et al., 1913; Balbín and González Sainz, 1996), La Llosa (González Sainz et al., 2000), La Garma (González Sainz, 2003), Emboscados (Balbín Behrman et al., 1987) and Cobrantes (García Guinea, 1968, González Sainz et al., 1986).

CAVE	Striated figures	Striated hinds	Other animals
Les Pedroses	1	1	
Tito Bustillo	4	4	
Llonín	31	24	2 stag 1 horse 1 bison 3 ibex
Las Aguas	8	6 1 possible	1 bison
Altamira	12	11	1 ibex
El Juyo	1	1	
El Castillo	21	17	1 deer 1 chamois 1 ibex 1 indeterminate
Pasiega B	7	4	1 deer 1 horse 1 ibex
Pasiega C	3	3	
La Garma (Chambersleandf)	20	19	1 deer
La Llosa	1	1	
Emboscados	4	3	1 ibex
Cobrantes	1	1	
<b>TOTAL</b>	114	95 +1 possible	18

Table II. Corpus of striated hinds on parietal supports in the Cantabrian Region.

In all cases, the same caves contain other figurations of very different techniques and chronologies. In Les Pedroses, Tito Bustillo, Llonin, Las Aguas, Altamira, El Castillo, Pasiega B and C, La Llosa and La Garma, the striated hinds are close to other figures of previous and/or later chronologies. Sometimes they are superimposed (and/or infraposed) on other phases of decoration, what allows other representations to be assigned to the same graphic horizon as the one of the striated hinds. In fact, it is curious to see how in most cases, the graphic horizon assigned to the Cantabrian Lower Magdalenian is above previous phases of decoration; that is, there is a "reuse"



of the caves in these early Magdalenian chronologies, with only two exceptions known: Emboscados and Cobrantes.

In the case of Llonín, it is interesting to observe how a hind painted with red pigment is later revised by a striated engraving, and after another engraved example of the same species is superimposed with the same convention (Forteza et al., 1999).

Three of the caves mentioned in the text contain striated hinds both on portable objects (located in the habitat deposits) and on parietal supports (located in the deep parts of the caves). These are Altamira, El Castillo and El Juyo caves. The presence of motifs on both supports could show that the depths of the caves were frequented by the same group whose habitat was located at the entrance.

### **3. Towards the definition of a graphic morphotype: technical and formal characteristics.**

Currently, most researchers agree that representations of hinds made by the misnamed "striated engraving" technique act as a fossil director of the Cantabrian Lower Magdalenian, as noted above.

However, behind this apparent morphological, technological and chronological certainty, there is a laxity, which begins with the very definition of the concept of "striated engraving".

As pointed out by I. Barandiarán (1972), the "striated technique" is related to stylistic features rather than to technical ones. In fact, as one of the present authors has pointed out, "the technique called striated or multiple trace engraving is not a technique as such, since it is simply the concatenation of strokes of a single pass of the tool, arranged in bands in order to represent a stylistic convention" (Rivero, 2017).

The direct revision of a certain number of engraved scapulae from the Cantabrian Lower Magdalenian, found in El Castillo and El Cierro caves, and their comparison with the rest of the Cantabrian corpus, has led us to propose a series of criteria to define this morphotype from the technical point of view.

With this purpose, we have used methodology based on the microscopic analysis of the strokes, in order to establish the technical characterization of the engraving.

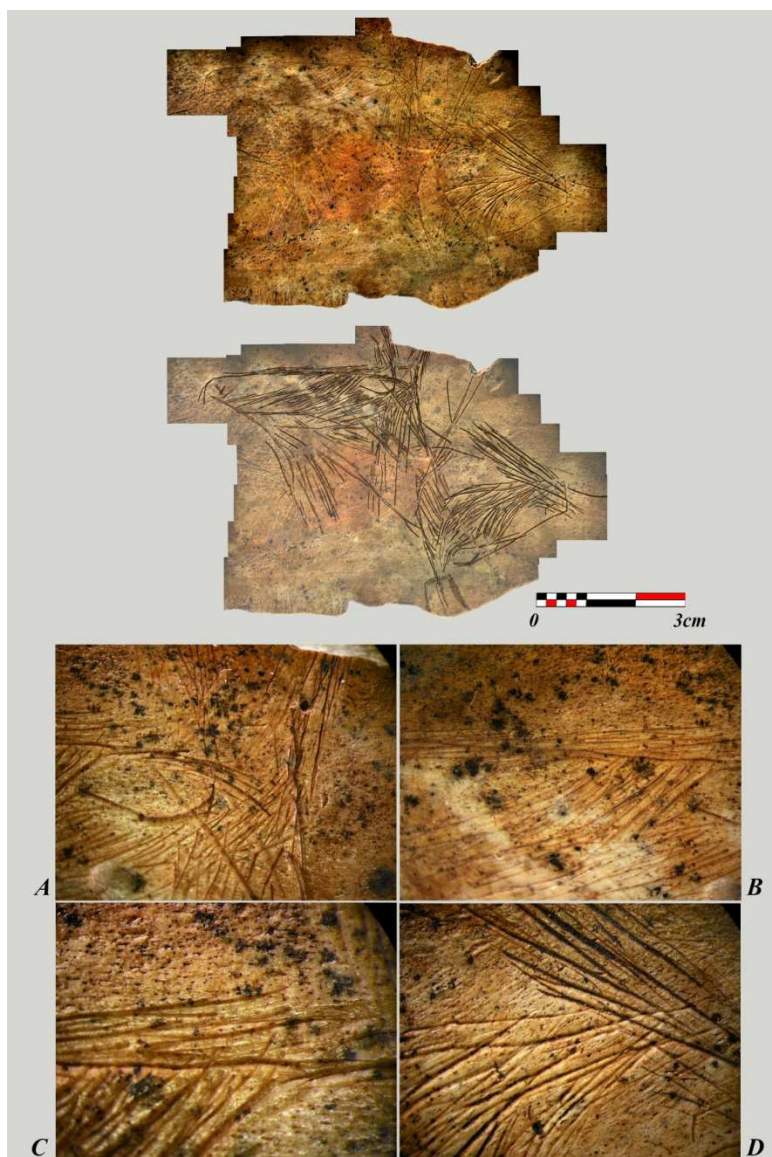
At the same time, the codification of graphic conventions and formal attributes

of this type of representations and their statistical treatment has enabled a determination of their internal coherence.

### 3.1. Technical characterization.

From the point of view of engraving technology, and based on a methodology that has already been applied to Magdalenian portable art (Fritz, 1999, Rivero, 2010, 2015), 17 engraved scapulae from El Castillo and El Cierro caves were observed microscopically. Although in many cases the preservation of the objects was not suitable for the observation of technical stigmas, we have been able to identify a series of technical aspects common to this type of figuration.

Figure 4. Scapula number 3 from El Castillo cave, engraved with two opposing hind.



Montage of micrographs and tracing of the figures. Micrographs indicating some of the technical features indicated below: a) Detail of the eye, ear and fronto-nasal line of the first hind. We can see that there is no differentiation in the outline of the trace according to the parts of the figure represented (10x), b) Detail of the fronto-nasal line of the first hind, showing successive passes that do not deepen a single groove (10x), c) V-shaped

and flat sections of the incisions that make up the fronto-nasal line and the beginning of the cutting in the first hind (20x). The multiple passes of the fronto-nasal line can be clearly observed, d) V-shaped incisions of the opposing hind (10x).

Regarding the characteristics of the incision, most of the motifs were drawn with little depth, obtained by a single pass of the tool, generally with a flat profile or "V" section (Figure 4: c and d and Figure 5: a and c). Only in one case, the engraved hind on scapula number 12 at El Castillo, the incision was deepened to obtain a "V"-shaped groove (fig. 5: b and c).

The second characteristic common to these figures is the disinterest in obtaining homogeneity in the type of section; that is, the figures present incisions with the same section, without observing variety or the standardized application of a type of section depending on the parts of the figure, as we can see in other Magdalenian motifs, especially in its middle and upper phases (fig. 4: a and fig. 5: d).

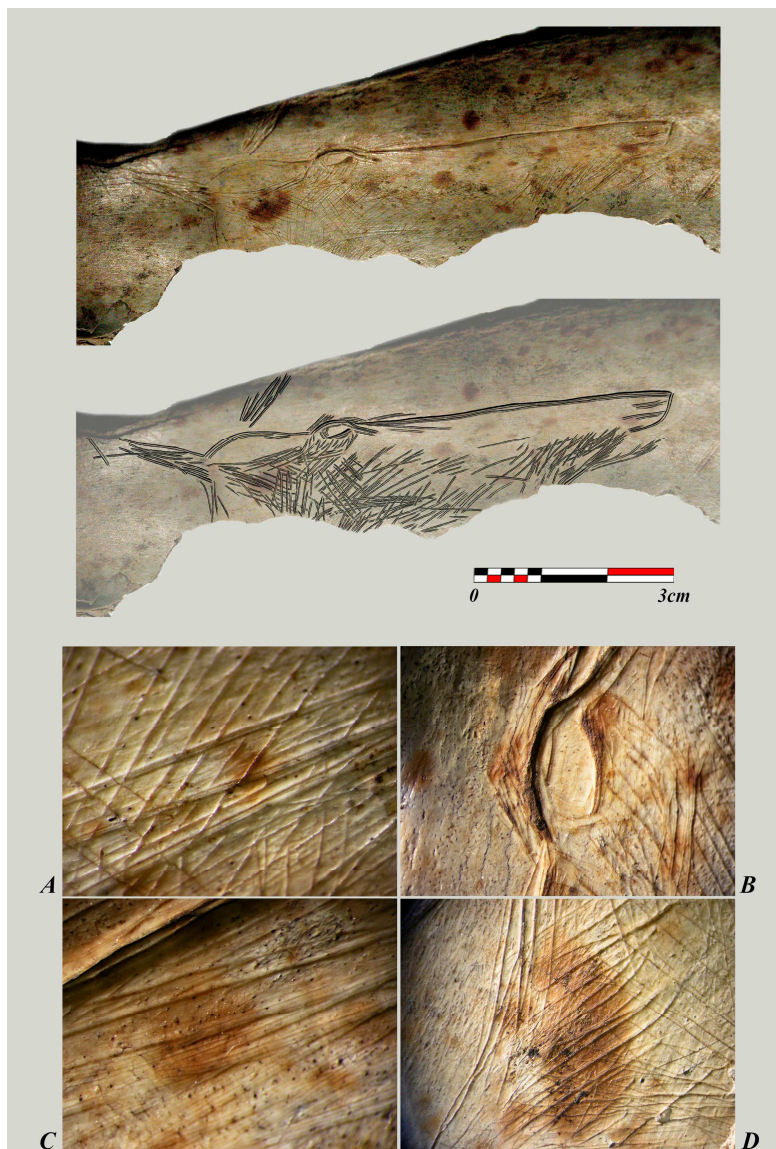


Figure 5. Decorated scapula number 12 from El Castillo cave. Montage of micrographs and tracing of the figure of the striated hind. Micrographs of some of the technical features indicated above: a) Flat profile incisions that make up the fur fill

(10x),b) V-shaped incisions, more revised, in the fronto-nasal outline and in the eye outline of the hind (10x), c) V-shaped incision, deeper, for the fronto-nasal outline, and flat profile in the fill of the figure (10x), d) Successive revisions in the fronto-nasal line that do not deepen a single groove, indifferent from the fur fill (10x).

Another similarity in these figurations from the technical point of view, and which is in line with those previously indicated is the lack of groove depth. The successive revisions in most cases do not generate a single deep groove, but more or less juxtaposed incisions (Figure 4: b and c and Figure 5: d). This aspect contributes to the characteristic appearance of this type of figuration.

These technical characteristics contrast strongly with those that were to be common to the Cantabrian Region, the Pyrenees and the Dordogne from the Middle Magdalenian (Rivero, 2015), giving the representations of striated hinds a strong personality from the technical point of view.

### 3.2. Formal characterization.

In order to carry out a formal analysis, we have established a series of attributes-values referring to the characteristics of the head of the striated hind. These attributes refer to the presence/absence of certain criteria such as ears, eye or nasal orifice, to their position (in the case of the eye, next to the profile or separated from it), to the characteristics of the juxtaposed line fill (position or arrangement like a dressing), or to the morphology of certain attributes such as the eye (oval or circular), the ears (depicted with a single stroke or with two) or the snout (Table III).

Attributes	Values	Code
Eye position	Close to the outline	Op
	Not close to the outline	Sop
	Absent	So
Form of the eye	Oval	Oo
	Circular	Oc
Form of the snout	Quadrangular	Hc
	Rounded	Hr
	Pointed	Hap
	Open	Hab
Coat	Rear of mandibule	Rm
	Chest	Rp
	Face	Rc
	With eye-snout demarcation	Roh
	Absent(s)	Srm, Srp, Src, Sro
Position of the ear	in V	Orv
	Parallel	Orp
	Single	Uor
Form of the ear	One incision	Ot

	Double incision	Odt
	Absent	Sor
<b>Nostril</b>	Present	Np
	Absent	Na
<b>Portable art</b>		AM
<b>Parietal art</b>		AP

**Table III. Attributes-values referred to the formal characteristics of the corpus of analyzed striated hinds.**

Factorial Correspondence Analysis (Benzécri and Benzécri, 1984) has been chosen for this study as it is particularly useful for the analysis of the scores. This method of analysis has many advantages. The objects that look alike are located near to each other, while those that differ are separated. By virtue of the principle of duality between objects and properties, the two series of points are correlated and may be placed in the same graph. Objects and properties that are frequently associated are close together and two properties are close if they appear often associated with a single individual (Rivero and Sauvet, 2014). This method was complemented with Ascending Hierarchical Clustering (AHC) that allows a progressive grouping of elements in classes based on a measure of "affinity" or proximity. The result is a treelike hierarchical classification or *dendrogram*. On the other hand, the correlation between the criteria was analyzed using the Z-test (Chenorkian, 1996). Only probabilities higher than 95% were retained as significant in the discussion. FCA has been used in various archaeological domains and has proved to be particularly useful in the case of artistic items, when the objective was to correlate formal features with the human groups who produced them in order to study their differences, degree of independence and relationships between them (Buisson et al. 1996; Pigeaud 2005; Rivero and Sauvet, 2014).

Of the total of hinds mentioned in the literature, we have been able to analyze a set of 83 figures in portable and parietal art (Table IV) according to 27 criteria, since in some sites the graphic documentation does not allow a secure coding or some of them are in the process of being studied.

PORTABLE ART		
Sample	Code	References
Altamira scapula 1	A1	Alcalde del Río, 1906
Altamira scapula3	A2	Alcalde del Río, 1906
Altamira scapula8	A3	Alcalde del Río, 1906
Altamira scapula4	A4	Alcalde del Río, 1906
Altamira scapula6	A5	Alcalde del Río, 1906
Castillo scapula1 a	C1	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula1 b	C2	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula2 a	C3	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003

Castillo scapula2 b	C4	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula3 a	C5	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula3 b	C6	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula12	C7	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula13 a	C8	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula14	C9	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula15	Ca	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula19 a	Cb	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula19 b	Cc	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula4 a	Cd	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula4 b	Ce	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo omóplato 4 c	Cf	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula4 d	Cg	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula5	Ch	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula8	Ci	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula9 a	Cj	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
Castillo scapula9 b	Ck	Breuil, Obermaier, 1912; Almagro, 1976; Fernández-Lombera, 2003
El Cierroscapula	Ci1	Gómez Fuentes, Bécares, 1977
El Juyocontourdecoupe	Ju1	Freeman, Echeagaray, 1982
El Mirónscapula	Mi1	González Morales, Straus, 2009
El Pendoscapula	Pe1	Montes, Muñoz, 2001

## PARIETAL ART

Sample	Code	References
Juyo 3	Ju2	González andFreeman, 2015
Pedroses 1.1	P1	Martinez-Villa, 2018
Tito Bustillo 16	TB1	Balbín andMoure, 1982
Tito Bustillo 14	TB3	Balbín andMoure, 1982
Tito Bustillo 19	TB6	Balbín andMoure, 1982
Tito Bustillo 20	TB7	Balbín andMoure, 1982
Altamira III-IV 15	A6	Breuil and Obermaier, 1935
Altamira III 18	A7	Breuil and Obermaier, 1935
Altamira III 16	A8	Breuil and Obermaier, 1935
Altamira techo 1	A9	Breuil and Obermaier, 1935
Altamira X 1	Aa	Breuil and Obermaier, 1935
Altamira X 2	Ab	Breuil and Obermaier, 1935
Castillo fig 167 a	Cl	Alcalde del Río et al., 1911
Castillo fig 167 b	Cm	Alcalde del Río et al., 1911
Castillo fig 169 a	Cn	Alcalde del Río et al., 1911
Castillo fig 169 b	Co	Alcalde del Río et al., 1911
Castillo fig 169 c	Cp	Alcalde del Río et al., 1911
Castillo fig 169 d	Cq	Alcalde del Río et al., 1911
Castillo fig 168 a	Cr	Alcalde del Río et al., 1911
Castillo fig 168 b	Cs	Alcalde del Río et al., 1911
Castillo fig 168 c	Ct	Alcalde del Río et al., 1911
Castillo fig 168 d	Cu	Alcalde del Río et al., 1911
Castillo fig 168 e	Cv	Alcalde del Río et al., 1911

Castillo fig 168 f	Cx	Alcalde del Río et al., 1911
Castillo fig 162 a	Cy	Alcalde del Río et al., 1911
Castillo fig 166 a	Cz	Alcalde del Río et al., 1911
Castillo fig 166 b	Ca1	Alcalde del Río et al., 1911
Castillo fig 166 c	Ca2	Alcalde del Río et al., 1911
Castillo fig160	Ca3	Alcalde del Río et al., 1911
Cobrantes II 3.2.	Co1	García Guinea, 1968; González Sainz et al., 1986
Emboscados 2	Em2	Balbín Behrman et al., 1987
Emboscados 3	Em3	Balbín Behrman et al., 1987
Garma 20	Ga1	González Sainz, 2003
Garma 22	Ga2	González Sainz, 2003
Pasiega fig. 12	Pa1	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega 30	Pa2	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega 31	Pa8	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega 34	Pa3	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega 35	Pa4	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega C 75a	Pa5	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega C 75b	Pa6	Breuil et al., 1913; Balbín and González Sainz, 1996
Pasiega C 75c	Pa7	Breuil et al., 1913; Balbín and González Sainz, 1996
Llonín 1	Ll1	Berenguer, 1979; Fortea et al., 2004
Llonín 2	Ll2	Berenguer, 1979; Fortea et al., 2004
Llonín 3	Ll3	Berenguer, 1979; Fortea et al., 2004
Llonín 4	Ll4	Berenguer, 1979; Fortea et al., 2004
Llonín 5	Ll5	Berenguer, 1979; Fortea et al., 2004
Llonín 6	Ll6	Berenguer, 1979; Fortea et al., 2004
Las Aguas 26	La1	Montes Barquín et al., 2018
Las Aguas 30	La2	Montes Barquín et al., 2018
Las Aguas 51	La3	Montes Barquín et al., 2018
Las Aguas 57	La4	Montes Barquín et al., 2018
Las Aguas 65	La5	Montes Barquín et al., 2018
Las Aguas 74	La6	Montes Barquín et al., 2018

**Table IV. Portable and parietal samples introduced in the FCA.**

The criteria for portable art (AM) and rock art (AP) were placed in supplementary elements (SE) so that they do not participate in the constitution of the axes of inertia. Likewise, in the case of the fragmented portable objects, the motifs have also been located as SE in order not to distort the distribution in the factorial plane.

The factorial plane [1,2] of the FCA shows that the finds are divided into two classes, on both sides of axis 1 (Figure 6).

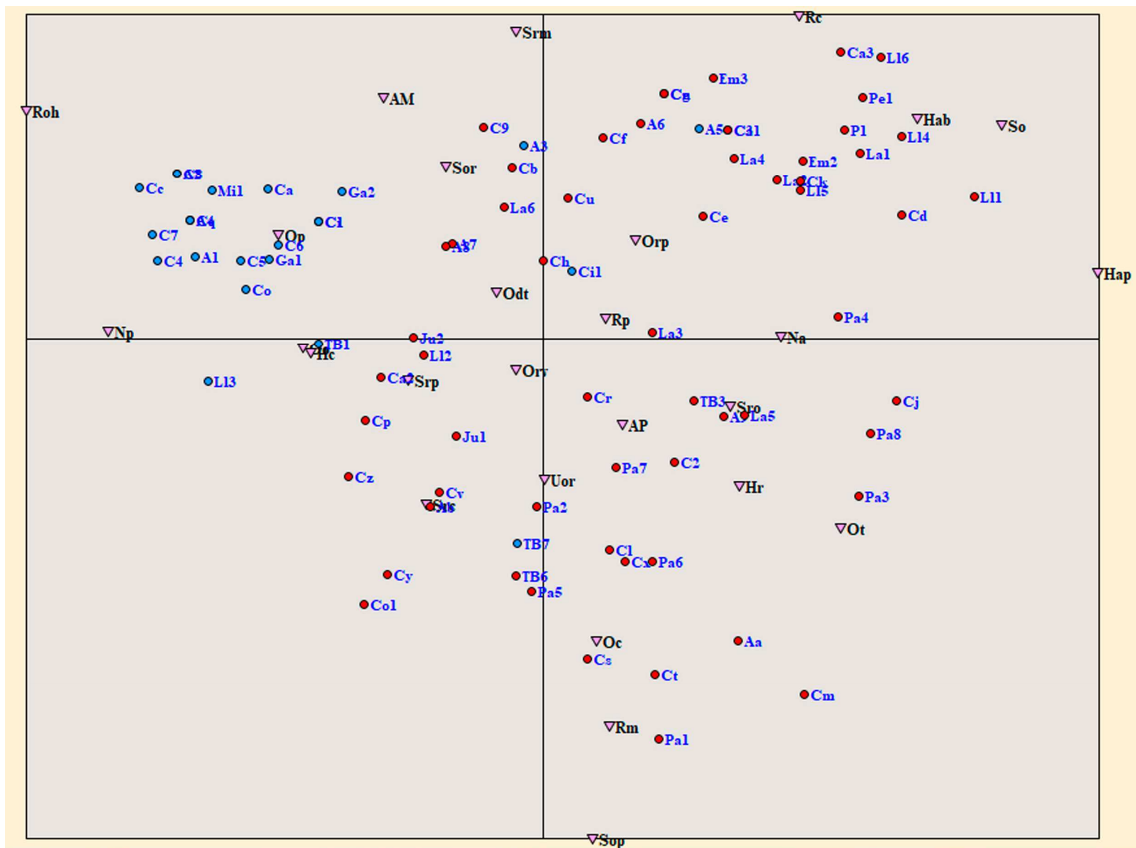
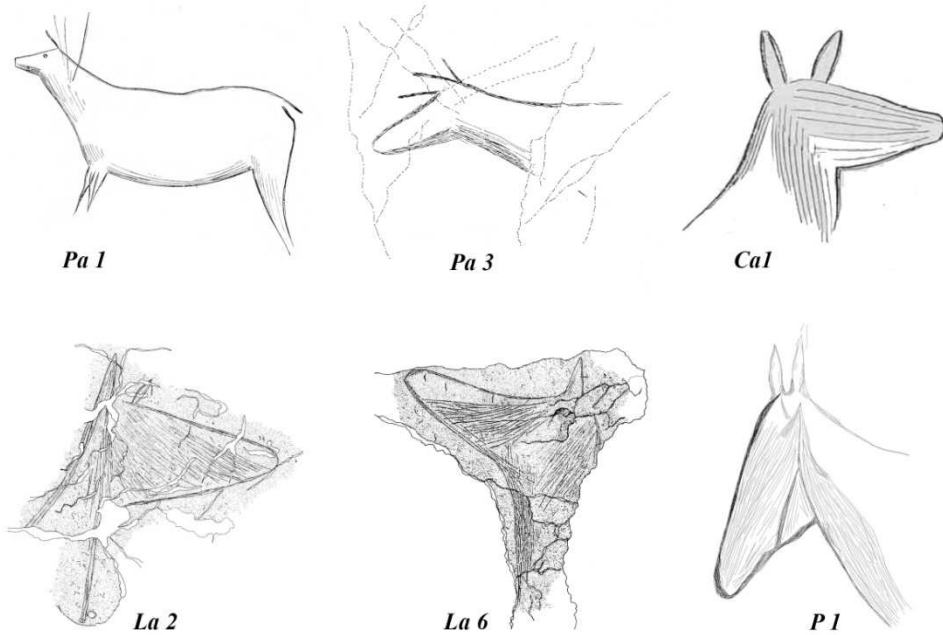
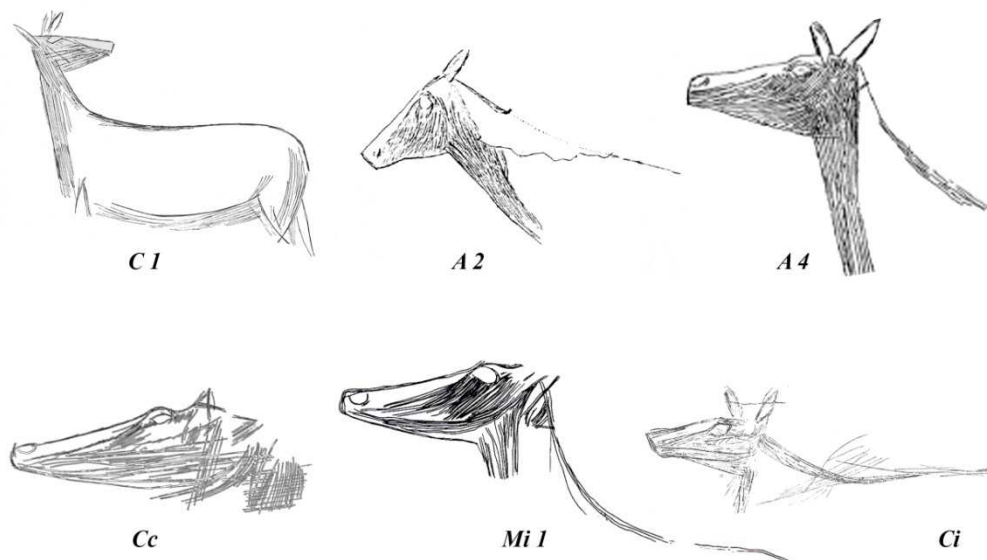


Figure 6. FCA graphical projection of a corpus of 83 hinds in Magdalenian portable and parietal art in the main factorial plane [1,2]. The two coloured groups A, B are obtained by AHC.

The distribution of criteria clearly separates the parietal art from portable art. Class A, with 60 motifs, is characterized by the criteria that define the simplest representations: no eye, open snout, maxillary or full face fill and a single ear. This seems to be the major morphotype in the case of parietal art (Figure 6). Class B, with 23 objects, is characterized (with a probability higher than 95%) by the criteria of eye attached to the profile, quadrangular snout, fill with cutting from the eye to the snout and nose present. It is a class linked to the representations in portable art (Figure 6).



**CLASS A****CLASS B**

**Figure 7.** Striated hind characteristics of class A (parietal art) and B (portable art) from the criteria defined by the FCA and the AHC, presented above.

This analysis shows that, within an apparent homogeneity, there are internal differences that may be due to different factors. In the case of portable art, the majority of the representations are more formally elaborate, particularly those that structure the facial fill with a dressing that leaves a strip parallel to the fronto-nasal line free of fur. The eye attached to the profile, as well as the quadrangular snout, are other discriminating factors that characterize these

representations. Together with the mobile representations, in this class some parietal figurations at Tito Bustillo, Castillo, La Garma and Llonín correspond to the same concept.

In the case of class A, more summary representations are characteristic of suchrock art sites as La Pasiega, Emboscados and Las Aguas. Others like Castillo, Llonín and Tito Bustillo display figurations in both classes, in some cases in the same panel, as at Llonín and Tito Bustillo. This could indicate that the differences between both morphotypes are not chronological but purely stylistic or linked to the different surfaces (bone/limestone).

#### **4. Discussion.**

The analysis of the corpus of representations of striated hinds shows that this type of figuration shares a series of technical and formal criteria that individualize them to the point of being able to refer to a true graphic tradition typical of the Cantabrian region. It can even be said that they comprise the first morphotype identified in Cantabrian portable art.

It is interesting to note that the most elaborate or canonical examples of this graphic tradition appear on portable supports. In addition, the parietal images closest to the "canonical model" are found in sites with deposits that have yielded large collections of decorated scapulae, as in the case of El Castillo, although exceptionally they appear in large ensembles not currently linked to the portable Cantabrian Lower Magdalenian collections, especially in Llonín.

At the same time, in the case of parietal art, we find other representations that include the formal conventions found in portable or parietal art (profile eye, quadrangular snout, etc.), but in which shading using the technique of striated engraving is absent. This is the case of the caves of El Juyo, Emboscados, Castillo, Altamira and Cobrantes, in which, in addition, the small size of the graphic ensemble and its topographic location seem to indicate the probable synchrony of both types of representation. That is, perhaps there are some variations or "artistic licenses" within the morphotype that may have been detected through the analysis of the whole corpus. In short, the parietal examples could be a replica or copy, less subject to rules or codes that systematically reproduce the formal elements and technical procedures that define the morphotype of the striated hinds on scapulae. That is to say, the specific normative character of Palaeolithic art tends to relax in the parietal variant more frequently than in the portable one, giving rise to greater heterogeneity. This difference could be related to the learning/teaching activities of the artist that is more often developed in portable art (Rivero, 2016).

Moreover, both from a technical and from a formal point of view, we find figurations that share some of the characteristics indicated but that surpass the geographic and chronological scope of the morphotype. In the case of striated motifs, outside the Cantabrian area we find examples of this technique at El Parpalló but applied to other formal attributes (Villaverde et al., 1986) and in Foz Côa –an aurochs with the same formal conventions- at Ribeira de Piscos (Baptista, 2009). Likewise, in parietal art, there are some ensembles in which conventional fur fill is represented by other techniques, but in probably earlier chronologies (Peña Candamo Cave) or in clearly later ones (Altxerri, Isturitz, Marsoulas caves) and applied to other themes. In any case, these are marginal or isolated examples, in which either technical or formal convergence with the morphotype is observed, but not both characteristics.

## 5. Conclusions.

For the first time since the identification of the morphotype of the striated hind as a fossil director of the Cantabrian Lower Magdalenian a century ago, this type of representation has been reviewed at both technical and formal levels. The analysis shows that there are two versions from the formal point of view, one more elaborate and the other more simplified, of this type of representation, which coexist in both the portable and parietal variants indistinctly.

The formal and technical conventions of these figurations display low variability, with combinations between the different random criteria that probably respond to the choice of the artist. These morphotechnical conventions make it possible to clearly differentiate the corpus of hinds characteristic of this period from other representations that share either technical aspects (juxtaposition of traces as a fill) or formal ones, but which cannot be regarded as belonging to this morphotype nor chronological markers of the Cantabrian Lower Magdalenian.

In short, the determination and analysis of the common characteristics of the so-called "striated hinds" and the production of the total corpus of representations has permitted an approximation to a graphic tradition that has been widely identified in the Cantabrian Region since the beginning of Palaeolithic art research but which had never been studied in depth.

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