

Main Characteristics of *Oukaïmeden* Rock Art (Morocco)

Principales características del arte rupestre de Oukaïmeden (Marruecos)

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ABSTRACT

The present paper deals with the study of Oukaïmeden rock-art. The methodology developed for it is thoroughly explained. A total number of 249 rock-art stations containing 1068 individual depictions have been examined under three levels of analysis: rock-art station, panel and individual depiction. Eight different categories of depictions have been individualized: anthropomorphs; zoomorphs; weapons; ethnographic elements; symbols; idols and modern depictions. According to our analysis, anthropomorphs evolved from naturalistic to schematic designs. The same evolution is visible in zoomorphic depictions. By means of engraving's overlapping and typology we suggest a possible chronology for them, from Neolithic to Bronze Age with some exceptions that belong to historic times. Other categories of depictions as weapons, the so-called undetermined depictions or ethnographic motives are also comprehensively analysed. Pecking was the main carving technique used, followed by abrading, being fine incision used exceptionally. Eventually an interpretation of the meaning of art in the context of the Oukaïmeden landscape is offered.

KEY WORDS: *Rock-art, pecking, abrading, incision, figures, naturalism, schematism, overlapping.*

RESUMEN

El presente artículo versa sobre el estudio del arte rupestre de Oukaïmeden. Se explica ampliamente la metodología desarrollada a tal fin. Un total de 249 estaciones de arte rupestre conteniendo 1068 figuras individuales se ha examinado bajo tres niveles de análisis: estación, panel y figura. Se han individualizado ocho categorías de representación: antropomorfos, zoomorfos, armas, elementos etnográficos, símbolos, ídolos y motivos modernos. De acuerdo con nuestro análisis los antropomorfos evolucionan desde diseños naturalistas al esquematismo. Idéntica evolución se observa en los zoomorfos. Mediante las superposiciones de grabados y la tipología, proponemos una posible cronología para ellos entre el Neolítico y la Edad del Bronce, con algunas excepciones que pertenecen a época histórica. Otras categorías representativas, como armas, los llamados indeterminados o los elementos etnográficos son también ampliamente analizados. En cuanto a las técnicas empleadas, la principal fue el piqueteado, seguido del abrasionado, siendo excepcional el uso de la incisión de trazo fino. Finalmente, se propone una interpretación del significado del arte en el contexto del paisaje de Oukaïmeden.

PALABRAS CLAVE: *arte rupestre, piqueteado, abrasión, incisión, naturalismo, esquematismo, superposición.*

Introduction

This chapter will focus on the results obtained by the “ARPA” project¹. Its aims are strongly related to the groups of rock art engravings located in this rocky plateau, at the heart of the High Atlas.

Oukaïmeden is a rock art area known since the beginning of the twentieth century. The first comprehensive study was carried out by Jean Malhomme in the mid-20th century (1959; 1961). This first study was followed by a series of smaller papers, perfectly glossed by Salih and his team in a more recent publication (1998: 255-259). After them, the research on this engraving rock art area culminated with the detailed study carried out by Alain Rodrigue in the eighties (Rodrigue 1999). So far, this study is the most complete published catalogue, on which we have based our new research project (Ruiz-Gálvez *et al.* 2010)

Methodology for the study of the graphical expressions

The ARPA project was developed along four field campaigns, during which the team worked simultaneously on four archaeological goals, (art study, contextualization of art, environmental reconstruction and analysis of rock surfaces and their causes of alteration).

To accomplish the first target, we designed a strategy of research, specifically devoted to explain rock art as a basic element for the symbolic appropriation of the Oukaïmeden landscape and its resources, since Neolithic times. To do this, we needed to survey the area anew completely, reviewing and documenting the published rock art -after consulting the appropriate literature with the invaluable assistance of the Moroccan INSAP² technical staff, whose catalogues have been made available for our Project- and the new rock art surfaces or figures located during this process. We combined this with the characterization and excavation of other archaeological sites -including some rock art places- in order to contextualize chronologically the rock art.

A total of 249 rock-art stations containing 1068 individual representations were studied with a system of indirect record that does not entail any harm for the surfaces and the engravings. This system is exclusively based on detailed photographic documentation of the identified rock art sites, along with a set of data -obtained during the fieldwork campaigns- referring to the location and dimensions of the rock-art stations.

The process started with an intensive survey of the complete study area. At first, we followed the

internal division of the area defined by Rodrigue (1999: 26-31), but this division was redefined by our research team afterwards (fig. 1a). As mentioned above, the goal was to identify the engravings already published by previous researchers, as well as to locate others that could have been missed in previous studies. We also intended to verify the disappearance of some engraved rocks identified by Malhomme or Rodrigue, mainly due to the small stone exploitations performed in the area for constructive or decorative purposes. All this was carried out under the criteria established by the team from the *Parc National du Patrimoine Rupestre* (Salih, *et al.* 1998: 277) and integrated into the ARPA Research Project.

Thus, once we verified the existence of engravings on a rock surface and checked if they were published or newly discovered, we proceeded to positioning them in UTM coordinates using a differential GPS. Then, we registered the data on three different levels (Collado 2006: 116-117), (fig. 1b).

A. *Rock-Art Station*: this term refers to a single rock or a group of adjoining rocks containing a specific number of engraved figures.

B. *Panel*: defined as the part of the rock surface on which the figures were engraved. A panel can be singled out from the rest of the panels of a rock art site by the natural crevices dividing the surface of the rock art station. In some cases -especially the sites located on small isolated rocks- the complete surface of the rock art station and the panel were the same.

C. *Figure*: every individual motive carved on each panel.

Thus, each figure was assigned to a specific panel, which was in turn included in a specific rock art station, located in one of the eight particular areas (from OK1 to OK8) into which the Oukaïmeden site was organized (See fig. 1a).

This record system entailed the development of three different index cards: rock-art station, panel and figure. These cards were used during the fieldwork phase and the data they contained matched those from a database specifically designed for this project. Later, all the information gathered during the documentation campaigns was entered into this database.

The first of these index cards included the following information:

1. *Location data*: referred to the rock-art station, the study area (OK) where the rock-art

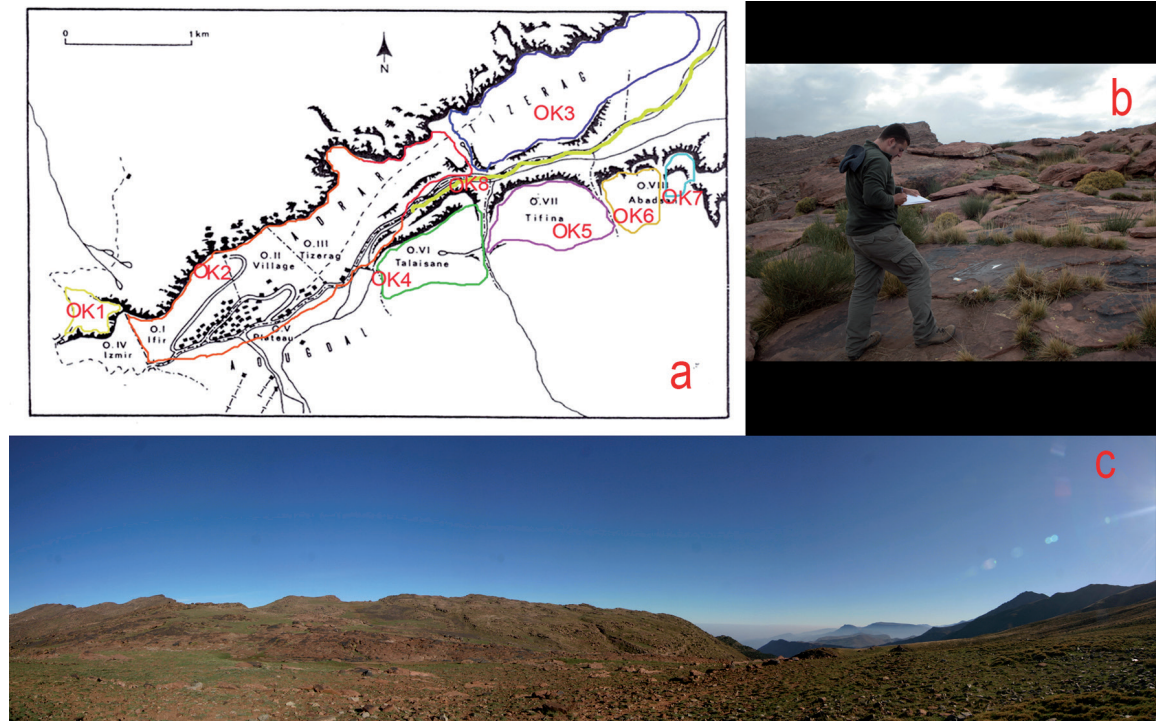


Fig. 1. a) Map of Oukaïmeden rock art distribution. b) Process of recording a rock-art station in Oukaïmeden. c) Panoramic view of OK5.

station was found, identification number and the position of the rock-art station in UTM coordinates.

2. *Technical data*: indicating the technique used to perform the representation.

3. *General characteristics of the rock-art station*: This is the largest section because, among other basic data, it includes: the kind of surface (vertical, horizontal or sloped) as well as its colour, orientation and angle of dip; the overall state of preservation of the rock-art station and the figures; its dimensions and some brief observations about its position regarding the landscape and other nearby rock-art stations, as well as a graphical descriptive sketch.

The “Panel” index card included the following data:

1. Data about the physical characteristics of the panel: location on the rock-art station, dimensions, slope, orientation and surface colour.
2. Data on the state of preservation of the panel and causes of degradation.
3. Data about the graphic content of the panel: amount and typology of the depicted

figures; presence of overlappings, indicating type, technique and kind of figure composing the overlapping.

4. Identification of the photographic record. As in the previous card, here we made a brief sketch of the figures engraved into the panel. We also added an “Observations” section where we noted all the details considered of interest by the archaeologist completing the card.

Finally, the “Figure” card contained the following information:

1. Identification data of the rock-art station.
2. Technique.
3. Typology.
4. Data regarding the position, orientation and overlapping (if any).
5. Identification according to Rodrigue’s catalogue.
6. Identification of the photographic record.

The fieldwork at the rock-art station ended with the detailed photographic record. We obtained images of the rock-art station in context, of the overall rock-art station and each of its panels, detailed pictures of the represented figures as well as specific

details such as overlappings, crevices, carving techniques, etc.

Spatial Organization of the Study Area

The rock-art stations of Oukaïmeden were structured into eight different areas (See fig. 1a) defined by the initials OK followed by the corresponding ordinal number (from 1 to 8). In some cases this included internal sections, such as in the OK1 area (divided into upper platform –OK1’ - and lower platform –OK1 -) and in the OK2 area (divided into “village”, “azib”, “horses”, “dam” and “repeater”). These areas correspond in a broad sense to how the territory was structured by Rodrigue in his corpus (1999: 31). Thus, the current OK1 area corresponds to Rodrigue’s former *Izmir* area; OK2 area corresponds to the areas previously named *Ifir*, *Village*, *Tizerag* and *Plateau*; the OK3 area could be considered an eastern extension of Rodrigue’s *Tizerag* area; OK4 area corresponds to Rodrigue’s *Talaisane* area; OK5 to his *Tifina* area and, lastly OK6 and OK7 cover the area previously known as *Abadsan*. However, the K8 area is a new element in this distribution. It includes the *Irini* River and its banks, where the ARPA’s team surveys identified a series of unpublished rock art sites, previously unnoticed by Rodrigue, which was why we included this new work area. Also, our spatial division of the study area follows the natural boundaries between

sectors formed by gullies, mountain passes, streams and other natural features.

Each area holds a different number of rock-art stations, distributed according to the following chart (see table 1):

As shown in the chart, some areas present a clear trend in the concentration of rock-art stations. In this regard, the OK5 area stands out with a total of 65 registered rock-art stations and more than a quarter (26.63%) of the overall graphical manifestations in Oukaïmeden. In fact, OK5 –with a surface two times smaller than OK2 or OK3- contains a considerably larger number of rock-art stations. In this regard, the OK6 area is particularly noteworthy. It is one of the largest areas and, in proportion it holds a larger ratio of graphical representations, with 15.16% of the rock art sites documented. This trend appears to follow an arbitrary pattern of locations, because no equivalence exists between the larger number of rock-art stations and the sizes of the defined areas.

Comparing these data with the one obtained from the analysis of the spatial distribution of all the Oukaïmeden figures -see table 2- we observed a strong trend to focus the graphical manifestations on the site that positively affects the OK5 area, which alone holds 37% of the overall figurative remains studied by our research team.

In light of these facts and using strict graphical criteria, we could consider that a clear symbolic spatial hierarchy exists in Oukaïmeden. There is a

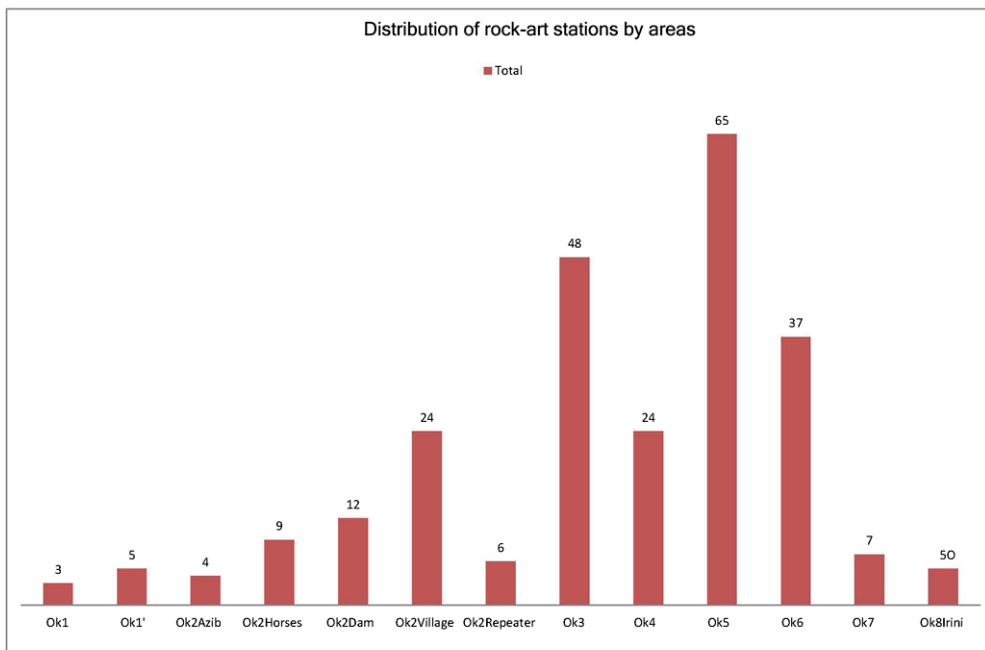


Table 1. Distribution of rock carving rock-art stations by area.

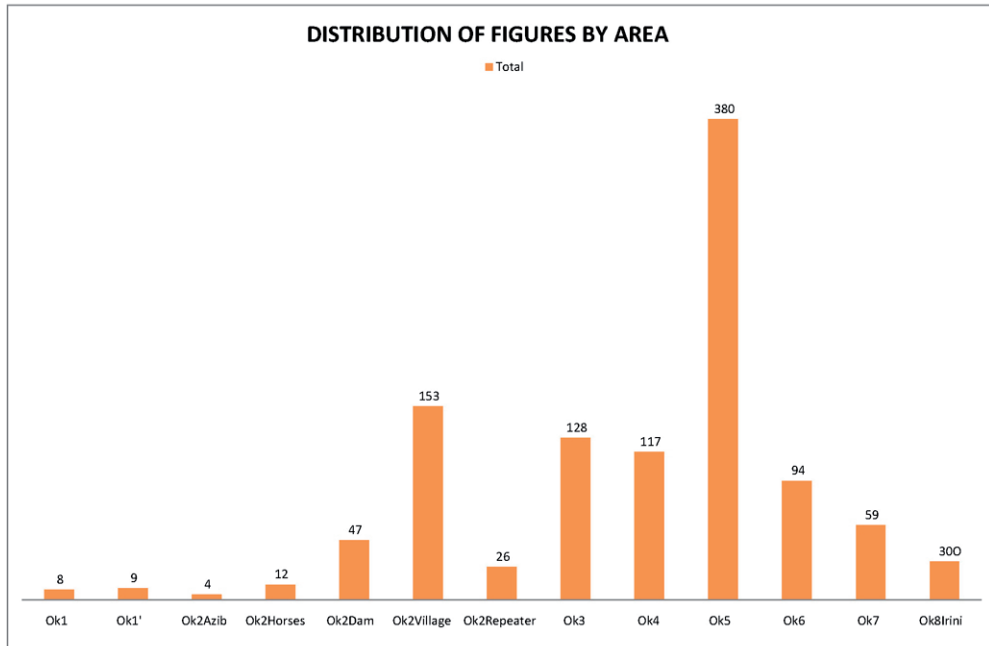


Table 2. Distribution of engraved motifs by area.

clearly dominant area (OK5), which also occupies a central and prominent position with regard to the surrounding areas, given its higher geographical location (See fig. 1c). In the remaining areas, the number of graphic markers decreases as we move progressively away from the main area.

This trend seems to be broken only in the OK2 “Village”. Nevertheless, in this case the results have to be explained in greater detail due to the presence of an exceptional rock art site -Number 7- where 58 figures were documented. This represents 39.19% of the overall presence of graphical representations in OK2. However, to be honest, it should be noted that OK2 area, which corresponds to the second main entrance to the valley from the west, has been severely damaged, firstly by the location there of the main Berber *azib* and later, by the chalets, hotels, shops and even a garrison and a dam constructed in the spot, when the French authorities built a road and a skiing resort. All these circumstances have caused the loss of many engravings, as attested by Mr. Alí, the rock-art Park’s guardian, although we will never know with certainty the number of missed rocks and therefore the degree of destruction.

Figurative Typology and Distribution

Using Rodrigue’s catalogue (1999) as a reference, we can see that, within the rock art context of the

High Atlas, Oukaïmeden’s rock art shares some technical and morphological peculiarities with the other great rock art site of this mountainous area, located in the *Yagour* plateau. Nevertheless, this apparent uniformity became tinged when we verified the existence of new engravings stations such as *Tassa*, located to the west near Oukaïmeden, which we were able to visit during the 2010 field campaign. This new group of engravings include motifs that are quite different to those from Oukaïmeden in technique, typology and style. This means that the characteristics of the High Atlas rock art are much more varied and complex than we can deduce from the data obtained so far, and that only a lengthy research will define them in their true dimensions (fig. 2 a,b).

In order to perform our analysis of the different figurative typologies in *Oukaïmeden* rock art, we chose to establish a seriation based substantially on morphological criteria, regardless of the technique used to produce each figure. We adopted this criteria aiming to avoid discrepancies in interpreting the motifs -as far as possible- and thereby reaching greater significant unity for the entire graphic set (Collado 2006). Under these premises, seven main groups were defined. The 1068 documented motifs can be basically classified in the following seven groups:

- 1.- Anthropomorphs: 59 motifs
- 2.- Zoomorphs: 82 motifs

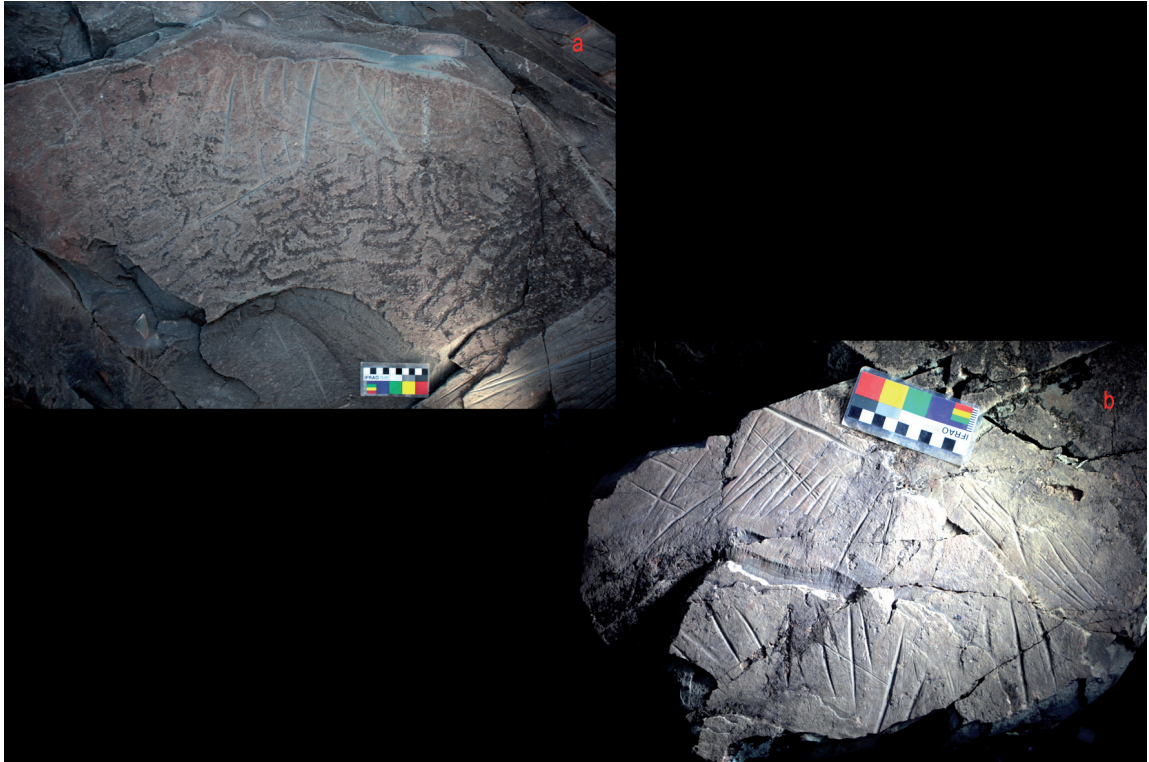


Fig. 2. a) Engraving of Tassa. b) Toubkal National Park.

- 3.- Weapons: 371 motifs
- 4.- Ethnographic elements: 107 motifs
- 5.- Symbols: 326 motifs
- 6.- “Idols”: 6 motifs
- 7.- Indeterminate: 111 motifs
- 8.- Recent motifs: 3 motifs

1. *Anthropomorphs*

This category includes all the depictions that can be identified as unambiguously human by their external appearance, regardless of previous interpretations. All the figures of this typology always include a torso and upper and lower limbs (regardless of their position) except those that are no longer complete due to poor preservation. The head can be indicated or not.

In Oukaïmeden, this figurative category appears either executed by an incision or pecking technique. No figurative overlappings -with a few exceptions- could be documented. Thus, no reliable chrono-stylistic evolution could be established.

Notwithstanding the lack of overlapping figures, we distinguished three main subtypes of human figures, in an attempt to make progress in the interpretative analysis. These subtypes are based on figure

morphology (specially the trunk) and the degree of schematization used to represent the motif.

1. 1. *Naturalistic subtype* (34)

This is the most frequent subtype of the series (34) and includes depictions where the different basic parts (head, trunk and limbs) have been represented in detail, exceeding a simple linear structure. In a broad sense, these would correspond to Rodrigue’s type III (1999: 55). They are all represented from a front perspective for the trunk and upper limbs, while the perspective for the lower limbs can be either front (more frequent in figures executed with an incise abrading technique) or lateral (that is, with the feet facing the same direction, in an attempt to give the image a certain degree of movement). A human figure was also documented in panel 1 of rock-art station 7 in OK2 “Dam” area. This is the only figure of the whole series showing a clearly defined sexual organ in a profile view. This perspective has also been used to depict the lower limbs. In this regard, it shows some similarities that could be associated with the ithyphallic figure on the dancing scene from the Cogull scene (Alonso and Grimal 2007).

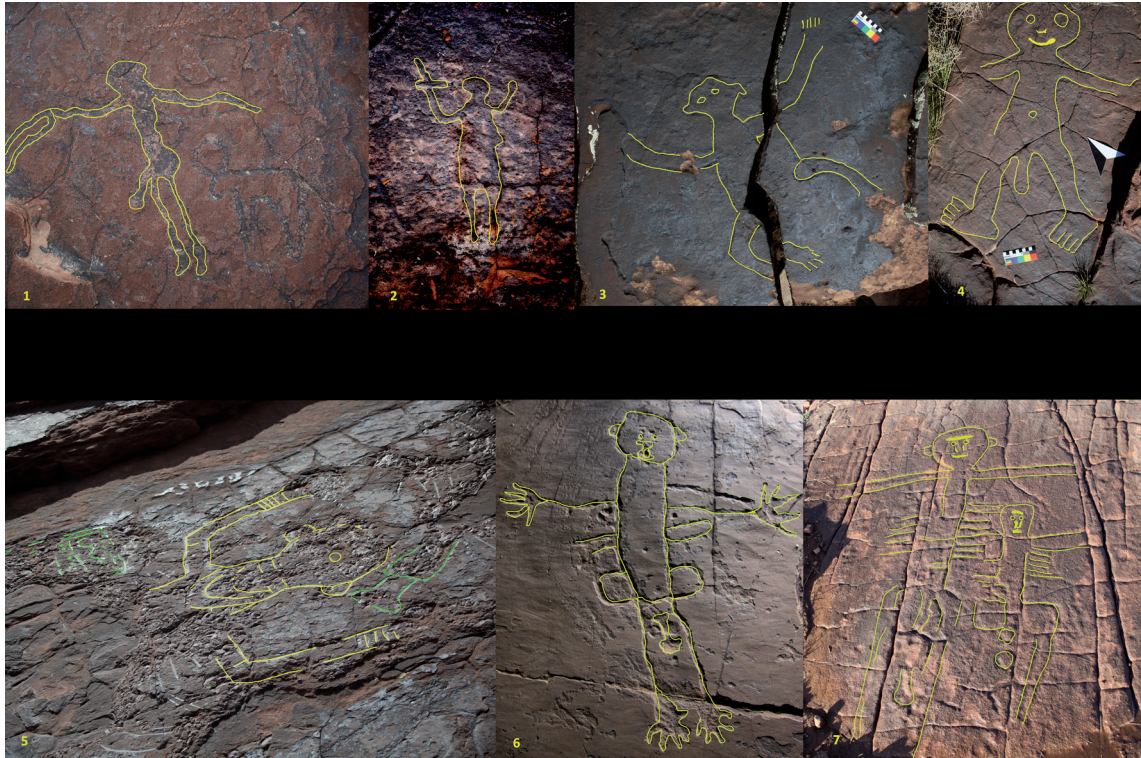


Fig. 3. Anthropomorphic figures 1: *naturalistic subtype*.

All the figures in this group show a rounded head with no headdress, although with the usual presence of eyes, mouth and -to a lesser extent- nose, hair or ears. The trunks are depicted summarily, consisting of two parallel lines, showing no attempt to draw an anatomical structure. Sometimes they are filled with lines or pecked elements, probably as a simple representation of some kind of clothes. Both upper and lower limbs emerge from the trunk. Hands and feet are usually indicated, in some cases showing fingers and in others simple rounded “stumps” as endings. In all the cases studied, the arms appear crossed or raised -defined as a “praying” position- and sometimes holding objects, such as the human figures from the Elephants’ Frieze. Also, the aforementioned figure from rock art site 7 of area OK2 “Dam”, holds in its hand something that we identify as a sling, an object frequently represented individually in Oukaïmeden. As for the legs, they always appear represented downwards, either straight, curved, or presenting an inflection at the knees (fig.3.n° 1 and 2). It must be stressed that the genital organs -male or female- are clearly indicated in the greater part of this figurative subtype (fig.3.n°4). Usually, these figures are completed with ethnographic elements such as ornaments (necklaces or bracelets) (fig. 3.5) or clothes. The latter are repre-

sented as a stereotyped depiction composed by simple lines arranged perpendicularly around the trunk (fig.3.n°7).

Neither can clear associations be established using associative criteria. The most stylized figures of this series (human figures from the Elephants’ Frieze and rock art station 7 from OK2 “Dam” area) are smaller and have round heads executed completely by pecking the surface. These figures have no anatomical features and rectangular elongated torsos completely or partially filled by pecking the surface. Upper and lower limbs always stem from the torso, are depicted with simple lines and objects are held in one of the hands (fig.3.n°2). Also, they appear associated with zoomorphic depictions, particularly elephants. They show features that we could relate to the earlier stages of the rock-art at Oukaïmeden. This could mean that they are older than the rest of anthropomorphic depictions in this category. Thus, we should differentiate them from those figures that, sharing the basic features mentioned above, were depicted isolated and without any sort of associated object or adornment (clothes or body ornaments) (as i.e. rock-art station 8 from O K5 area; rock art station 24, and panel 6 of rock-art station 26, both in OK6 area) (fig. 3.n°3 and 4). These figures could be older than other anthropo-

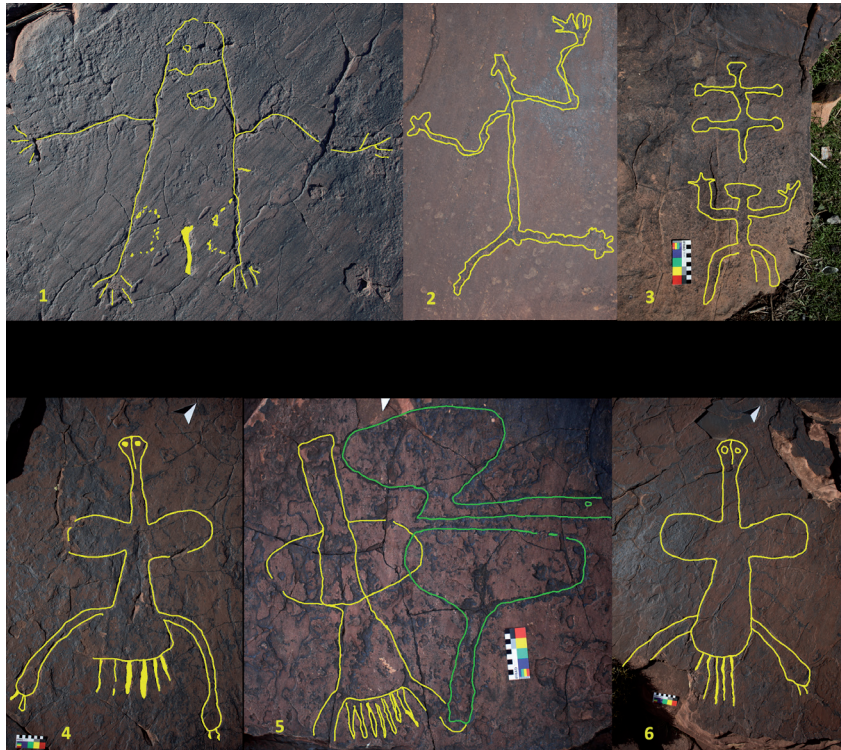


Fig. 4. Anthropomorphic figures 2: *naturalistic subtype* (1), *schematic subtype* (2 and 3), *violin subtype* (3 to 6).

morphs that have the same morphological features and similar size, but appear depicted with clothes and adornments (necklaces, bracelets, earrings). In this regard, the group documented in OK5 area stands out. It is located in the rock-art stations closest to the *Igountar* pass and the tumuli located there, with which it maintains a close visual relationship. The figures from this group are frequently associated with certain kinds of weapons, mainly daggers of triangular blade, with or without a midrib. These depictions also share the preferential use of pecking. In fact, the features of the lines used in both sets of depictions in rock art station 43 of OK5 area suggest a certain synchrony, which led us to consider a possible association between both figurative types and could provide an important chronological index for this series of figures (fig. 3.n°5).

It is noteworthy that these figures also share a similar topographical distribution with those we defined as “*violin subtype*” -described below- found at the same rock-art stations. Thus, it would not be unreasonable to deduce some relationship between both typologies.

These anthropomorphs seem to evolve morphologically towards a group of increasingly schematic features, especially at the ends of the limbs, which usually tend to finish in a single line (i.e. the so

called *Pinguet’s Man of rock-art station 4*, in OK2 “Village” area) (fig.3.n°6). The association with weapons continues, mainly daggers and shields -especially square-shaped shields- as well as the presence of ornaments. Notable in this regard is the repeated use of sets of parallel lines (i.e. rock-art station 26 in OK3 area), or fishbone decorations (i.e. panel 1 of rock-art station 2 in OK3 area) depicted at both sides of the figure’s torso to represent clothing. Clear associations of human figures start appearing at that time, as we were able to verify in rock-art station 2 of OK2 “Horses” area (fig.3.n°7). These associations are very rare in the rock art of Oukaïmeden, and have also been documented in *Yagour* (Rodrigue 1999: 240, Y/IV/8; 313, Y/X/398). Some have an explicit sexual meaning (Rodrigue 1999: 340, Y/XI/250), which is not registered in the aforementioned example from Oukaïmeden.

Lastly, this type of figures tends towards more linear formats, both in torsos and limbs. These depictions are finished by means of a single and continuous line that delineates the lower limbs, torso and head (i.e. rock-art station 27 in OK3 area) (fig. 4.n°1) depicting a more or less rectangular shape, open at the bottom. The arms stem from both sides of this shape. Fingers and legs continue to be represented. Ornaments and clothes disappear, as well as

the associated weapons. In fact, one of these motifs overlaps a triangular-bladed dagger in panel 2 of rock-art station 27 B in OK6 area.

The sequence culminates with anthropomorphs that can be associated with what we called the “schematic subtype”, described below. In this subtype, the figure’s body is reduced to a single line with the head on top. Upper and lower limbs stem from this line (i.e. rock-art site 16 in OK3 area (fig. 4.2 and 3). Limbs are depicted with slightly winding lines -a possible attempt at making the figure more dynamic- and in all cases hands and feet end with strongly marked fingers and toes. The neighbour *Yagour plateau* includes examples of anthropomorphs with facial features and clear indication of sexual organs (Rodrigue 1999: 310; Y/X/369 to 371). However, this last has not been documented to date in Oukaïmeden.

To sum up, it is clear that Oukaïmeden anthropomorphs included in the “naturalistic subtype” evolve over a very long period. The smaller figures, which have a certain naturalistic design, appear holding ancient weapons (slings) and are associated with representations of wild animals. This leads us to consider a recent chronology (Neolithic) for these figures. During the Copper Age, but mainly during the Bronze Age, these types gave way to the better known motifs of praying figures ornamented with jewellery and associated with rectangular shields and weapons. This is when the large figures known as *suppliciè* became frequent. They were named “*suppliciè*” (tortured) because the bodies appear surrounded by little arrow designs. These figures are topographically close to the *violin subtype*, which could mean that both formats are associated. These figures evolved during the Bronze Age -and probably throughout the first stages of the Libyan-Berber period- towards more schematic shapes. Initially, the associated panoply was preserved, and the arrangement of the clothes worn by these human figures became frequent. These clothes are represented by complex parallel series at both sides of the torso or located inside the figure. Although non-existent in Oukaïmeden, in *Yagour* there are examples of these kinds of figures associated with a team of two draught animals (Rodrigue 1999: 338, Y/XI/243) or drawn underlying Libyan-Berber engravings similar to those present in the Elephants’ Frieze (Rodrigue 1999: 326, Y/XI/117). This could suggest a possible chronological context for this series of motifs throughout the Iron Age. These kinds of human figures gradually lost the rich associated panoply – and in some cases even overlapped them, such as in panel 2 of rock-art station 27 B of OK6 area - and evolved morphologically towards completely linear formats that match our “schematic

subtype” (See fig. 3). Although they do not reach that chronology, they signal the beginning of the models from the Libyan-Berber stage (horsemen and fighting scenes), which are more advanced and in some cases belong to historical or even medieval times (Bravin 2009).

1. 2. “Violin” subtype (11)

This subtype of figures (11) has been classified independently because of its singular morphological characteristics, found exclusively in Oukaïmeden. They were interpreted as “violin idols” by Rodrigue (1999: 85). This author based his interpretation on the similarities with Mediterranean Cycladic idols, which he considered the formal model that originated the “violin” figures from Oukaïmeden. The aforementioned author (*ibidem* 1999:87) described the intense process of schematization that these figures underwent.

Both pecking and abrading was the technique used to engrave these figures, although the first is proportionally more frequent (80 %) than the second (20 %).

Although we continue to use the term “violin” to classify this group of figures, we do not consider them as idol representations, but as a very peculiar way of representing a female anthropomorphic figure. These figures are always represented in a front perspective and completely hieratical. Morphologically, they repeat the same conventions to represent the various anatomical parts of their bodies. The head is represented at the upper part of the torso as the end of a long and narrow neck. Facial features are usually detailed schematically, mainly the eyes and the nose. The neck extends downwards in a continuous line that widens progressively to define the torso. The upper part and both sides of the torso show either the arms akimbo or the representation of the woman’s breasts. The lower part widens considerably to emphasize what we interpreted as a female sexual organ, which even shows pubic hair depicted as perpendicular lines that fall from the vulvar area. Legs are arranged at both sides, although they are not present in all the figures of the series. They always appear curved and, in some cases, end with a small rounded appendix at the lower end, a very schematic way of depicting feet. There is only one case (panel 5 of rock-art station 42 in area OK5) showing the beginning of two possible toes (fig. 4.nº4, 5 and 6). No associated adornment, garments or prestige items are depicted on these figures. Nevertheless, some of the rock art sites show weapons depicted in the same panel, which could be associated with the figures. This is the case of panel 5 in rock-art station 42 of OK5 area, where

there may be a relationship between the two violin figures and a small triangular-bladed T-handle dagger without midrib (fig. 4.n°4), that appears near the head of one of the figures. At the feet of the other figure is an evolved axe with curved handle and lateral blade. An indefinite, curved figure in the shape of an elongated oval also appears near the arm or the right breast of one of the human figures. In rock-art station 19 in OK5 area, a “violin” human figure appears near another triangular figure -that could represent an unfinished dagger blade- on the left and slightly over its head, in a similar position as in the previous example.

The definition of a chronological context for these depictions is difficult because, apart from the small size of the sample, only two overlappings have been detected. The most interesting case of overlapping comes from a figure of panel 3 in rock-art station 20 of OK5 area. Here, the figure is clearly underlying a large rectangular mace that shares the surface with another mace of more evolved features, showing a long bended handle with a rivet in the lower part (fig.4.n°5). However, the similarities in the techniques used to execute the figures suggest a short time lapse between both, if any. There is another overlapping panel 3 of rock-art station 42 of OK5 area as well. Although it offers irrelevant chronological information, since it is engraved with a simple, curved and unfinished pecked line that overlaps the body of the human figure. However, the “violin” depiction once again holds stratigraphic priority.

Besides the stratigraphic sequence already mentioned, the analysis of locations and possible figurative associations was an important support to establish a chrono-cultural context for these depictions. The distribution of the “violin” anthropomorphic figures should be highlighted in this regard. They are located only inside area OK5, and half of the figures studied were engraved over rock-art station 42. The rest are in the near vicinity. This concentration might have been due to a desire to associate these figures with a strategic pass to manage the resources in Oukaïmeden: the north-eastern mountain pass, called in Berber language *Tizi Igountar*, which allows access to the pastures in the inner valley. These rock art sites also concentrate a large proportion of the large antropomorphs of the type called “The Orants”, of the naturalistic subtype. These figures are ornamented with sumptuary objects and associated with panoply of weapons, including daggers, axes and shields. These weapons also appear associated with the “violin” figures: some elements even show a similar disposition (daggers appear systematically located to the left and slightly over the figure’s head). Following associative criteria, we had already highlighted the relationship between both typologies, thus establishing a masculine-feminine duality. This

duality is probably associated with fertility -both in pastures and livestock- over a period of time that, as explained above, we identified as the Bronze Age. More intense exploitation of the limited resources of the valley -as shown in the paleo- environmental analysis performed in the framework of the ARPA project (see Chapter Vegetation)- would have been a source of conflicts between groups during this period. These conflicts would have been reflected by the iconography, mainly represented by human figures and weapons. These figures would have spread gradually, occupying the rock art sites near the main strategic passes to control the territory and appearing in all the flatter areas where water was present and pastures were more abundant.

1. 3. Schematic subtype (7)

This typology (7) is equivalent to Rodrigue’s type II (1999: 55). In this case, the human figure is limited to very concise lines. The torso is represented by a vertical line with the head at the upper end. The lower and upper limbs are depicted at both sides of the figure. Regardless of the shape of the limb, a large proportion of the documented figures show fingers and toes on the hands and feet. The axis of the body usually continues downwards to represent the masculine genitals explicitly.

These simple figures are very schematic and do not represent ornaments or any other complement, with a few rare exceptions. One of these exceptions would be the human figure represented in rock-art station 6 of OK7 area, showing small lines at both sides of the arms -at forearm level- which might be considered some kind of ornament or clothing. The best point of reference for these depictions are the more evolved figures of the naturalistic subtype, with clothing that is systematically represented by sets of parallel lines.



Fig. 5. The rider of panel 5 in the Elephants’ Shelter, OK7 area.

Pecking is the predominant carving technique used to engrave these figures, although incise abrading lines are not rare. They are always represented from a front perspective, though the size of the figures and their attitude can be perceived to have evolved. The first sign of this evolution is the greater dynamism shown by the largest figures, represented with undulated limbs. These are the direct heirs of the more evolved figures of the naturalistic subtype, the best example of which is the human figure from rock-art station 16 of OK3 area (fig. 4.n°2). These figures become gradually smaller and are more hieratical: either the upper or lower limbs become rigid, alternating their position (horizontal, praying, curved, etc.), while the fingers and toes are still indicated as a reminder of the previous phases (fig. 4.n°3).

Unlike the “violin” type, the schematic human figures do not present a preferential area of concentration. Their distribution is isolated—and the sample size is limited throughout the large majority of the studied areas, except for OK1 and OK8.

These depictions are usually isolated. When they appear associated it is always with other anthropomorphs of the same features, although with the limbs in different positions (i.e. rock-art station 16 of OK2 “Village” area) (fig.4.n°3). They also appear associated with chronologically advanced depictions, such as the engravings of pairs of footsoles appearing next to a schematic human figure in rock-art site 6 of OK7 area, and executed with a similar technique.

These are the most recent motifs of the series, and probably of the whole figurative rock art site documented in Oukaïmeden. As heirs of the previous phase, they remain classified as pertaining to an advanced stage of the Libyan-Berber period, along with other figures -representing a minimum percentage of the total amount- such as the rare schematic animals with a linear body, or the horseman present in panel 5 of the Elephants’ Shelter (fig. 5). These animal figures are followed chronologically by Rodrigue’s type IV motifs the Libyan-Berber horsemen (1999: 57).

These are frequently found in the surroundings of the large high pastures -such as *Jbel Rat* (Bravin 2009) - and reflect an economical change of strategy that resulted in less use of the resources -if not the abandonment- of these territories by a society that was chronologically and culturally apart from the society that engraved the main figurative *corpus* of Oukaïmeden between the Neolithic and the Iron Age.

2. Zoomorphs

This new category includes only the figures that could be clearly identified as an animal, regardless of the species represented, the execution tech-

nique (incision, abrading or pecking) or the degree of schematization used in the representation. This general category has been, in turn, divided into several groups based on the identification of the species represented. The faunal taxa of the zoomorphs are relatively easy to define in Oukaïmeden and the High Atlas in general. This is mainly due to the remarkable degree of naturalism of the animal engravings, and also to the repetition of certain formats used to represent specific anatomical parts, which help us identify a particular species. For example, an elephant’s head is always represented in the same way: rounded ears in the upper part, tusks and torso faced downwards or slightly curved. Nevertheless, we also created a generic subtype named “indeterminate”. This group includes all animal figures in which correct biological identification was not possible, due to their degree of schematization or their lack of anatomical references.

Following the aforementioned criteria, we established the following zoomorphs subtypes that do not differ significantly from those highlighted in Rodrigue’s classification (1999:59-68):

2. 1. Bovine (34)

Most of these engravings show the animal’s profile and a rectangular-shaped body. The anterior and posterior limbs emerge from the body and are finished with a convergence angle and with no characteristic markings of the hoof. The ventral curve evolves from concave formats -in the most ancient motifs- towards straight or even convex lines in the most recent figures. The head always presents a filling and its size is usually disproportionate to the torso. Over the head there is a single horn -consisting of a small line curved inwards- this is probably the anatomical reference to identify this faunistic taxa. These figures usually show the sexual organs and the tail, which in some cases ends with a sort of trident-shaped “stump”.

2. 2. Equine (4)

Oukaïmeden equines are highly schematic figures represented either in a lateral perspective or in profile view, except for the singular figure of rock art site 45 in OK3 area, which presents highly naturalistic features and an absolute profile view. They show an elongated head with protruding nose, triangular ears (in most cases) and sometimes the mane is represented as well. The backline is usually elongated and narrow, ending in a rounded haunch. A tail comes out from the lower haunch. The legs -two or four- are simple lines without remarkable anatomic markers.

2. 3. *Deers (3) and goats (4)*

The body structure is similar to the description of the bovine figures above but they differ in the size and position of the horns. Deers present high antlers while in goat figures they are clearly bent backwards. Some goat images are more naturalistic, such as the figure in panel 1 of the Elephants' Shelter, where the animal shows the characteristic beard dangling from the lower jaw.

2. 4. *Canidae (3)*

The figures of this group are also hard to identify. They show an elongated head, triangular ears and marked limbs. The tail has been taken as a reference marking element. Canidae tails are represented with a curve, aligned with the body or pointing up, as they usually appear in the canidae images in the schematic rock art of the Iberian Peninsula. The characteristics of the fur -the small patches are represented by sets of pecked marks- have contributed to identifying the figure of rock art site 4 in OK4 area as a possible hyena.

2. 5. *Elephants (10)*

This group is mainly defined by how the head is represented. The head is out of proportion to the body and limbs; it is rounded and filled in and presents two rounded ears in the upper part. The head is extended downwards -usually widening in the area of the mouth- and the tusks appear in their natural position, represented by two curved lines. Torsos evolve following the general criteria, from more naturalistic shapes to body shapes that tend to be rectangular. The same can be said of the massive legs that even show characteristic markings of the feet in the most ancient figures, leading to more linear forms and body markings that were increasingly neglected.

2. 6. *Rhinoceros (1) and buffalos (1)*

Both representations are rare in Oukaïmeden. The first one is located in the Elephants' Frieze. This figure is mainly defined by the double horn emerging from the nose and a small bending tail pointing up, rising from the hindquarter. The second one was documented in panel 1 of rock-art station 3 in O K4 area, and has been identified thanks to the magnificent horns -shaped in double "U"- that distinguish this figure from other bovine motifs, as they both share similar body shapes.

2. 7. *Felines (4)*

Feline figures show rounded heads -quite massive in some cases- and rounded ears. Heads are usually continued with elongated bodies and a rather bent backline, prolonged by means of a long, dangling and slightly curved tail. Legs are occasionally finished with small rounded feet.

2. 8. *Snakes (5)*

These are always represented as undulating lines. The criterion used to identify these motifs as animals has been to recognize a slight widening at one of the ends, interpreted as the animal's head.

2. 9. *Indeterminate (12)*

All the figures in this category have the basic anatomical parts (head, torso and limbs) to include them in the "Zoomorph" category, but lack the diagnostic features required to determine the species.

An initial approach to the general features of this figurative category led us to tackle the question of their distribution among the different study areas and to compare it with the analysis of the distribution of the previous category ("Anthropomorph"). Thus, we were able to verify that the 83 zoomorph figures from Oukaïmeden are distributed in all the study areas except for those located in the West (OK1' and OK1 upper and lower platform respectively). The absence of a preferential location -as happened with the human figures of the naturalistic or violin subtypes- is surprising. Instead, there is a more or less balanced distribution overall of the documented territory. In fact, OK5 area -which holds the highest number of engraving rock-art stations- does not contain the largest amount of faunal representations. Nevertheless, some areas with a smaller number of rock art sites -such as OK4 or OK7- hold a greater proportion of engraved animal depictions. From the start, this difference led us to consider that there was a limited relationship between both categories. Further argumentation tackling associative aspects (see below) highlighted this difference. This, in turn, led us to propose the hypothesis that both categories -or at least the large majority of the figures encompassed by them- should be located in different chrono-cultural horizons.

All the zoomorph figures were executed with a pecking technique, except for two. The first one is a snake of rock-art station 7 of OK2 "Village" area, performed by abrading the rock surface. The other one, identified as a wild donkey by Rodrigue (1999:

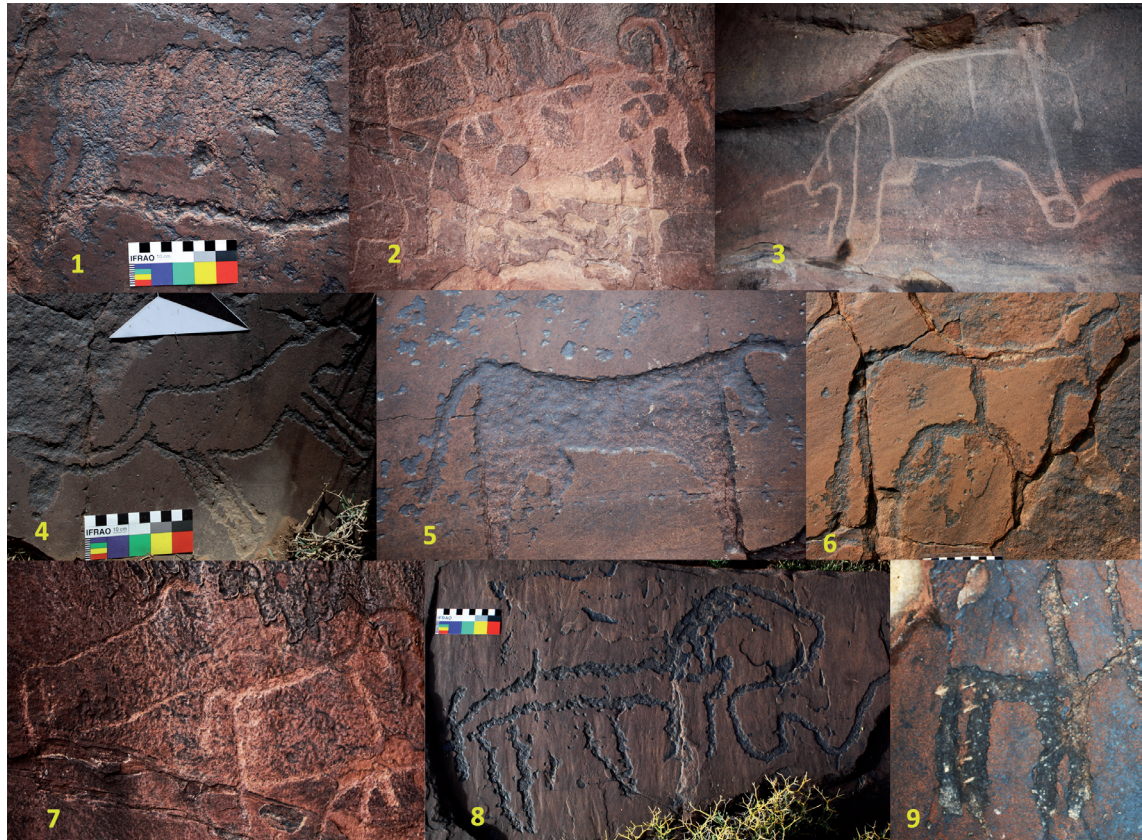


Fig. 6. Figurative evolution of Zoomorphic figures.

62), is located in rock-art station 42 of OK5 area, and combines pecking and abrading techniques. Pecking is usually limited to the outline exclusively, giving shape to the different anatomical parts of the animal. Nevertheless, we identified completely invasive peckings filling the entire body shape of the zoomorph, as can be observed in the bovines from rock art site 11 in OK3 area, the animals from rock-art station 25 or panel 2 of rock-art station 28, both in OK5 area. Interestingly, these completely pecked figures are also characteristic because they are the only representations showing a certain degree of dynamism within an overall static framework. (fig.6. n°1). Exceptionally, some artists even generated a sort of excise engravings by hewing the rock surface, a fact that has been verified in the animals from the Elephants' Frieze. The technique of covering pecking was used in conventionalities as well to represent the fur or certain body parts. This is the case of the partially invasive peckings, located mainly on the neck of some herbivores or on the head of most of the elephants. The inner reticules shown on the bodies of the goats – among other animals - from panel 1 in the Elephants' Shelter (fig.6.n°2), or the small pecked marks over the

body of the hyena in rock-art station 4 of OK4 area are used to represent the characteristic patches of this species' fur.

However, besides the internal fillings, a technical conventionalism was found. The animals' body is compartmentalized by means of a single vertical line engraved approximately from the withers-or slightly behind them- to the lower body (fig.6. n°3 and 6). This line can be considered a sort of "distinguishing mark" of the animals of Oukaïmeden. This feature appears without exception in every kind of zoomorph, regardless of its size or species. However, it is found much less frequently in *Yagour* animal figures.

In the majority of the studied cases we found semi-naturalistic animal representations showing highly systematized anatomical details in horns, manes, tusks, tails, etc. As mentioned above, this allowed us to determine their taxonomical affiliation with a certain degree of certainty. Nevertheless, figures with a substantial degree of schematization were documented -although only in a low proportion- such as the animal from rock-art station 4 in OK2 "Dam" area (fig.6.n°9). The body of this figure is reduced to a simple horizontal line from which

emerge the forelimbs and the hind limbs, also limited to four straight lines. This is a clear example of the survival of these motifs during advanced phases of the Libyan-Berber period.

Most of the animals engraved in Oukaïmeden are represented in pure profile, with a certain lateral degree, especially present in the oldest images of the series -mainly wild animals- where skewed perspectives are found in horns, tusks and limbs (four). The limbs are presented at an angle, which makes these figures appear slightly more dynamic (rock-art station 28 in OK5 area). Nevertheless, practically all the animal figures in Oukaïmeden are hieratical and show no relationship with an hypothetical complementary landscape, other than in exceptional cases, such as the feline from rock art site 26 in area OK6 (fig. 6.n°4), which seems to be running to hide beneath the rock crack in the panel where it was engraved. Thus, these figures create the sensation that they are floating and still over the rock surface. The carvings are performed statically, without complex compositions or scenes showing more than one depiction, which would provide the dynamism it lacks. Thus, in the rare cases where a group of animals was engraved in a panel, we analysed it as a figurative overlapping which, in some cases, holds a certain dramatic quality. This is the case of the animal alignment in the Elephants' Frieze although, from our perspective, this is a case of fitting to the longitudinal surface instead of an actual scene. The overlappings are a particularly interesting feature. These palimpsests contain figurative overlappings that, once studied and in combination with the analysis of the techniques used to engrave these figures, make it easier to define a stylistic evolution of the body shapes in the zoomorphic depictions of Oukaïmeden. Thus, the oldest motifs of the series (fig.6.n°1, 2 and 3), which always appear placed below - would correspond mainly to images of wild animals -regardless of their size- with a greater concern for naturalism and proportion between the different body parts of the animal, which frequently show internal fillings (complete or partial). A certain repetition of profile views exists in horns, ears, limbs (four) and tusks. Sometimes, the figures achieve a certain degree of dynamism by depicting the legs at an angle (i.e. rock-art station 28 in OK5 area). The use of the rock surface to achieve greater integration of the figure into an imaginary landscape, although limited, is not absent. Examples of this are the aforementioned feline in rock-art station 26 of OK6 area or the perfect fitting to the surrounding surface of the engraving from panel 2 in the Elephants' Shelter (fig. 6.n°3)

The next phase -which does not imply a hiatus in the figurative sequence, but a stylistic evolution

resulting from the incorporation of new economic strategies - entails the abandonment of angular perspectives and the use of pure profile almost exclusively. This is the peak of bovid representations that, as shown by the overlappings detected in panels 1 and 3 of the Elephants' Shelter, were engraved after the motifs from the previous phase. The size of the figures is normalized and keeps a remarkable anatomical proportion. The limbs are reduced in number (only two) and are executed by means of two lines forming a convergence angle. The horns are systematically executed with a single line bending downwards, starting from the upper forehead. Invasive fillings continue to appear, in some cases occupying the complete surface of the animal's body, such as in rock-art station 5 of OK2 "Dam" area (fig.6.n°5), a reminder of the previous phase and probably an indicator of the greater antiquity of these figures. Nevertheless, the use of a single line outlining and defining the body shapes of the zoomorphs clearly prevails. During the later stages, these stereotypes evolve towards more schematic body formats, in which the animals' torso is usually square. Head and limbs emerge from the torso, and are in general summarily depicted and highly out of proportion to the body (fig.6.n°7). Eventually, during an indeterminate -although chronologically advanced- stage, the small series of zoomorphic motifs are included in this category. These animal depictions are made of single lines, such as the figures documented in rock-art station 4 in OK2 "Dam" area, or panel 2 of rock-art station 10 in OK5 area (fig.6.n°8 and 9), or the horseman found in panel 5 in the Elephants' Shelter (fig. 5). These figures are intertwined historically with the world of the Libyan-Berber horsemen, scarcely represented in High Atlas rock art sites and probably due -as mentioned above- to a change in economic strategy that, in practice, entailed the abandonment of these territories.

This morpho-stylistic evolution fits in the chronology through the analysis of the detected overlappings and the few cases of figurative associations that could be established, although these are scarce and sometimes unclear. For that matter, we do not share Rodrigue's considerations about the associations between bovines and weapons³ (Rodrigue 1999: 61). We think that more than associations, there are simple figurative overlappings, as result of adding new motifs on the surface at diachronic but chronologically indeterminate moments. This is so, because zoomorphs are repeatedly depicted on the preferential spaces of the panels (central or upper areas). Other figures appear either overlapped to the zoomorphs or located in peripheral areas of the available carving surface around

the central figure. Considering more thoroughly the possible relationships between zoomorphs and other graphemes, there is, in our view, only one clear associative record in Oukaïmeden. It occurs between the bovines and the undulating lines. This is supported by examples such as the bovid depicted in perfect profile of rock-art station 45 of OK3 area, whose front leg continues without interruption in an undulating line. This same association is repeated again in rock-art station 46 of that same area, where the depiction of a typologically archaic bovid -compartmentalized body, S-shaped horns and skewed perspective - is associated to a completely pecked undulating line that extends from the groin area and adopts a rounded shape. However, it cannot be determined if this corresponds to the representation of the animal's genitals or its udder. A third example is the highly schematic zoomorph of rock-art station 28 in OK5 area. This has been identified as a bovid due to its bended horns, from which an undulated line emerges (fig.6.n°8). Thus, it is an associative model, also documented in the *Yagour* plateau (Rodríguez 1999: Y/X/323; Y/XI/256; Y/XI/360). As we have checked in Oukaïmeden, this association appears repeatedly in motifs that are stylistic and chronologically different from one another. We tend to think that this is due to the endurance of similar cultural concepts -regardless of social and economic changes- from the initial phases, which prevailed during the entire time span when the animal figures were being represented on the rock surfaces of this territory.

From a chrono-cultural perspective, one of the most enlightening associations occurs between the oldest type of anthropomorphs and a kind of zoomorph that also presents very archaic features, located as much in the Elephants' Frieze as on panel 1 of rock-art station 7 in OK2 "Dam" area. In both cases, wild animals are represented next to anthropomorphs holding weapons, in what could be



Fig. 7. A deer beneath a dagger figure. Rock-art station 34 in OK5. Images digitally processed.

considered as hunting scenes, which makes them practically unique among Oukaïmeden rock art. This first phase of engravings -which probably also indicates the beginning of graphical representations in the High Atlas- of animal figures is mainly made of naturalistic representations of wild animals, sometimes using a skewed perspective, expression of movement and invasive pecking. The authors of these engravings could have been shepherd groups with a Neolithic economy occupying these lands occasionally, whose subsistence would still be based on hunting to an important extent. The presence of these groups is proved by the excavations of the ARPA project. This provides a chronological framework for this series of representations.

The other series follows the stylistic evolution suggested and characterized by the presence of bovine figures as a main motif in the Oukaïmeden art. This must have taken place during a relatively long period encompassing the Neolithic and the Copper and Bronze Ages, where this figurative tradition seems to stop. In fact, the largest naturalistic anthropomorphs from this intermediate period and the more advanced models from the initial stages of the Libyan-Berber period are never associated with animals. Furthermore, the overlappings detected -although scarce- always show weapons represented over zoomorphic representations. An illustrative example is the overlapping case in rock-art station 34 of OK5 area. Here, a deer with its neck turned backwards appears beneath a large triangular-bladed dagger with a disproportionate handle, which was engraved later on the animal's chest (fig. 7). Another example was documented in panel 2 of rock-art station 10 in OK5, where the large T-handle of a simple triangular-bladed dagger with a rounded point was engraved over a feline with ancient features. Also, in panel 3 of the Elephants' Shelter, a large mace is engraved overlapping the previously engraved bovid and elephant.

Summing up, we consider that the large corpus of zoomorphic representations of Oukaïmeden could not chronologically exceed the Bronze Age, except for the schematic motifs with a linear body and the horseman from the Elephants' Shelter, the historical chronology of which has been explained above. At that time, the exploitation of resources intensified - either due the arrival of foreign groups or the evolution of autochthonous groups- causing a drastic change in rock art iconography. The animals traditionally represented were replaced by weapons and warriors, probably as a consequence of social conflicts that would continue reoccurring during the last two millennia before our era. This process would culminate with the almost complete abandonment of this land in historic times, caused by the



Fig. 8. Typology of weapons in *Oukaïmeden*. 1 to 4 Daggers; 5 *Falcata*; 6 to 10 Halberds; 11 Spearhead; 12 Sling; 13 Oval mace; 14 Squared mace; 15 Lateral edged axe; 16 Hammer.

new economic strategies that were focused in the exploitation of territories and resources located far from the highlands of the Atlas.

3. Weapons

Depiction of weapons constitute the most numerous figurative group in the Oukaïmeden rock art. Weapons have been subdivided into several categories, according to typological criteria:

- 1.- Daggers
- 2.- Swords
- 3.- Halberds
- 4.- Maces
- 5.- Hammers
- 6.- Axes
- 7.- Slings
- 8.- Indeterminate

3. 1. *Daggers* (178)

This category includes all depictions consisting of a handle and a blade. The length of the blade is less than three times its maximum width. These are also the most numerous representations of weapons in Oukaïmeden (fig. 8.nº1, 2, 3 and 4).

They were engraved using a variety of techniques: incision, abrading or pecking, although the first one (9 depictions) are widely outnumbered by the latter (163 depictions). In addition, in five depictions both techniques were used simultaneously, and there is a single case where a thin incised line was used.

These depictions were analysed according to the morphological features of the blade and handle. The first classification considered the shape (triangular, elongated-triangular, with rounded tip, etc.) and the presence or absence of a midrib. Regarding the handle, we analysed the overall shape and the shape of the pommel and guards. Finally, we also considered the presence or absence of rivets and their position (over the handle or the blade).

Although there are not many overlappings, their analysis allows us to suggest a figurative evolution that would have started with the most ancient formats of the series, the main feature of which is a rather proportional relationship between the blade and the handle. In these depictions, the handle usually presents a curved hilt, usually without T-shape ends, or not very salient. The handle is represented by two concave lines and no ricassos are depicted. These kinds of handles are joined up an elongated triangular blade, with or without midrib. These first models evolve to other forms where the blade-handle ratio becomes increasingly disproportionate, with the handle growing more than the blade, to the point when, in some cases, the handle is even larger than the blade. At the same time, its shape becomes more complex. Semi-circular endings appear now frequently at both sides of the pommel. The latter could either have a rounded or right shape, or adopt a discoid shape, as in the more advanced types. Although in general, the handle maintains the previous concave shapes, completely straight handles appear also, together with ricassos in the most recent types. These ricassos are

represented by two small extensions -semi-circular or curved backwards- located on both sides of the area of contact between the handle and the blade.

Regarding the rest of the figurative groups, the daggers always appear overlapping the animal representations. Thus, we consider it quite possible for them to belong to a subsequent period and therefore, to different cultural stages. As regards the anthropomorphs, there is, under our view, a manifest association with the daggers. The oldest types of daggers are related with anthropomorphs of the naturalistic subtype, especially the large representations of the *suppliciè* kind. In fact, we think that these types could have appeared around the Bronze Age, along with some other ethnographical elements, such as the squared shields, which also appear clearly associated to these figurative models. As the features of the anthropomorphs evolve, so do the dagger types associated with them; their handles become increasingly larger and more complex. This relation disappears with the schematic anthropomorphs.

3. 2. Swords (15)

These depictions appear in much lower proportion than the daggers. This category includes representations of weapons in which the length of the blade is equal or more than three times its maximum width. Representations of two possible "*falcatas*"⁷⁴ (fig.8.n°5) are included. They show a square handle and curved blade. The first one was carved by abrasion in panel 15 of rock-art station 7 in OK2 "Village" area, and the second one was pecked in rock-art station 32 in OK6 area. The depiction of a pecked scimitar in panel 2 of rock-art station 10 in OK5 area is also included in this group. The scimitar presents a characteristic blade that broadens towards the point and is connected with a hilt with semi-circular pommel and concave sides.

The swords documented in Oukaïmeden do not have ricassos to protect the hilt. The hilts are simple, small and usually square, with semi-circular T-shaped pommels.

The blades appear with and without a midrib and the point is usually rounded. There are also depictions of blades with internal subdivisions, which the present writer interprets as a possible representation of a sheathed sword.

The small size of the sample and the lack of clear associations and overlappings do not allow suggesting a chronological frame for them.

3. 3. Halberds (38)

This is the third most numerous group of weapons depicted in Oukaïmeden, after daggers and maces. This kind of weapon is executed by abrading or pecking, and is usually represented as an elongated triangular blade, although in some cases with slightly convex edge, embedded in an elongated and rectilinear shaft forming a right angle. The lower end of the shaft is usually finished with a small rounded bulk, which often presents riveting in the contact area with the blade. Furthermore, some of them show massive lower ends that are rounded, squared or present small extensions. Very precise archaeological references exist of these morphologies, mainly in the Iberian Peninsula, and it was on the basis of these that we built the typological classification of these figures (Rodríguez 1999 73-74) (See fig.8.n°6, 7, 8, 9 and 10).

Cases where overlapping of halberds and other kinds of weapons were verified are limited and hardly enlightening, as they appear either superimposed or underlying both daggers and maces. Associations are not clear either. However, in some cases halberds and daggers with archaic characteristics appear represented in the same rock-art station, although not in the same panel, sharing the same carving technique and the same blade features. In fact, it would be impossible at times to distinguish a dagger blade from a halberd blade were it not for the haft. Nevertheless, halberds were never represented in association with human figures, at least not in Oukaïmeden. This association does appear in the case of daggers, as mentioned above.

3. 4. Axes (14)

Except for one figure -engraved in panel 10 of rock-art station 7 in OK2 "Village" area - that might have a double-edged lateral blade, the other axes represented in Oukaïmeden always show the same characteristics: a blade with lateral curved edge, hafted into a handle forming a right or slightly obtuse angle (fig.8.n°15).

All of the axes were performed by pecking. A remarkable feature is that nearly all of these appear in OK5 area, concentrated around the rock-art stations that have the strongest neighbourhood with the *Tizi Igountar*. Actually, more than half of the documented representations of this category appear in rock-art station 43. The amount of significant overlappings is not enough to establish a clear diachrony -although axes were always documented underneath whenever a figurative overlapping ap-

peared. However, this fact led us to associate them with subnaturalistic anthropomorphs of the *suppliciè* kind, which also appear to have a direct relationship with the rock-art stations controlling the strategic pass of *Igountar* to manage displacements in the Oukaïmeden area.

3. 5. *Maces and hammers* (80)

These make up the other group of large weapons present in the engraved rocks of Oukaïmeden. Rodrigue includes them into the “Axes” category, considering them as weapons with a metal blade (76). In the present writer view, this is an arguable interpretation. Except for some particular models -in which rectangular maces appear internally structured and show riveting in the handle area- we consider the large majority of them to be made of stone.

These weapons consist basically of an active or hitting area presented in three different formats: oval (the most common), square and circular. When this weapon presented the latter format we classified it as a hammer, following the denomination established by the Moroccan team (Salih *et al.* 1998: 282). The active part is fastened to a handle presenting two different morphologies: short and slightly curved or straight and elongated (fig. 8. n°13, 14 & 16).

The shape of the handle and the mace, and the area of contact between both were taken into consideration in our study. The short and slightly curved handles are usually fastened to the mace,

which is almost always oval, through the lower part, constituting one of the most ancient types of this group. On the other hand, the straight and elongated handles that are fastened laterally to the mace, which is either oval or rectangular, forming a right angle, and would be more advanced from a diachronic perspective.

Although there are superimposed or underlying figures in association with other weapons or iconographic types, the prevailing stratigraphic trend indicates that these representations occurred after the great animalistic period of Oukaïmeden. Nevertheless, they could have coexisted in the final stages with the animal motifs showing more evolved features. However, maces and hammers would belong to a chronological period previous to the development of metal weapons (daggers, axes and halberds), although they would have coexisted later with them throughout their iconographic endurance.

3. 6. *Slings* (13)

The representation of this weapon is made by means of two long parallel and slightly curved lines connected at one or both ends. A slight widening at one of the ends represents the pouch where the projectile would be placed (fig. 8.n°12).

All of these were carved using a pecking technique and their chronological framework is hard to define, as there are no overlappings or clear figurative associations. However, the subnaturalistic an-

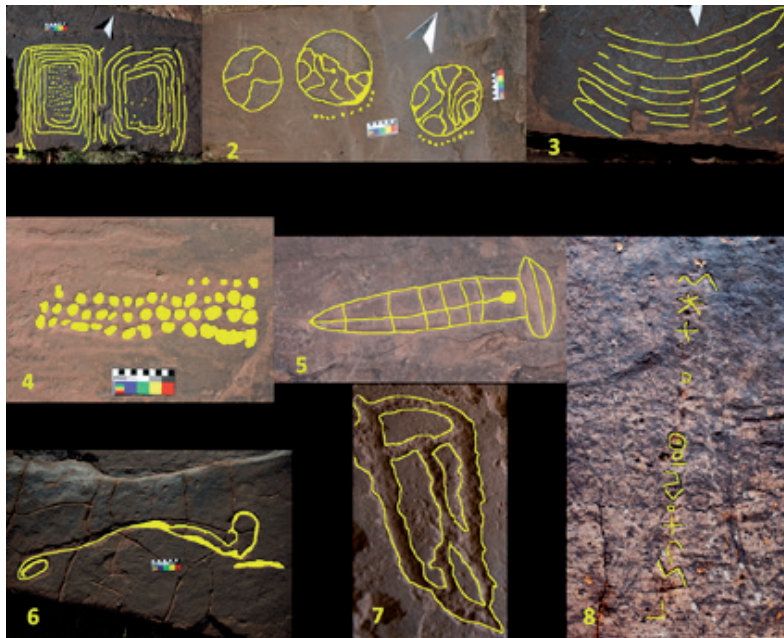


Fig. 9. Typology of ethnographical elements in Oukaïmeden.1 Square shields; Circular shields; 3 Necklaces; 4 Game; 5 Sheath; 6 Walking stick; 7 Burials; 8 Epigraphy.

thropomorph in panel 1 of rock-art station 7 of OK2 “Dam” area, is holding one of these weapons. This leads us to contend that they existed from the initial stages of figurative rock art in Oukaïmeden. This does not imply that these motifs were not represented throughout the entire process, since this weapon continues to be used nowadays by the High Atlas shepherds, as we verified during our field work in the valley.

3. 7. *Spears and arrows* (20)

These weapons consist of a triangular-shaped head that is more or less elongated and can either be smooth or have a midrib. This head is fastened to a shaft executed with a single and poorly developed line in all the documented cases (fig. 8.n°11).

All the depictions of these weapons in Oukaïmeden were made by using a pecking technique, except for two. The difference between spears and arrows is mainly the size of the head and its relationship with the length of the shaft. The arrowhead is smaller and usually fastened to a longer shaft, while the spear consists of a larger head and a shorter shaft.

Arrows appear to have a direct relationship with the *suppliciè* representations. As regards the depictions of spears, one example in panel 2 of rock-art station 6 in OK2 “Dam” area, shows a spear underneath a dagger with archaic features. This led us to think that these kinds of motifs would have been present since the first appearance of metal weapons in the iconographic rock art site of Oukaïmeden.

3. 8. *Indeterminate* (13)

There is a small group of figures of difficult classification into the previous categories, mainly due to their state of preservation. Under the present writer’s view, most of them belong to the daggers or maces category, but they were classified in this category due to lack of certainty.

4. *Ethnographic elements*

This category consist of the motifs interpreted as clothing or other elements representing the lifestyle or ritual traditions of human groups that inhabited Oukaïmeden. As usual, the most common technique used was pecking (98), compared to abrading (7). There are only two depictions combining both techniques.

The following ethnographic figure subtypes are represented:

- 1.- Shields
- 2.- Games

- 3.- Necklaces
- 4.- Sheathes
- 5.- Walking sticks
- 6.- Epigraphy
- 7.- Burials

4. 1. *Shields* (78)

This is the largest group of ethnographic representations. Three different formats can be distinguished: circular (60) - the most common-; square (17) and triangular (1). They appear individually, in pairs (circular and square formats) and collectively in the same panel (only circular formats) forming rock-art stations of several depictions of variable size and composition. Associations of shields and other kinds of representations, such as anthropomorphs or weapons also exist. Quite significant in this regard are the examples of association in panel 7 of rock-art station 7 of OK2 “Village” area (known as the “*Pinguet Man*”) with a square shield; or in rock-art station 3 of OK5 area, with a circular shield (fig. 9. n°1 and 2).

The complexity of these representations varies, depending on the accompanying decorative elements. Thus, the circular type shows a wide variety, from simple models without internal divisions, to more complex and internally structured models with several formats that range from a simple dividing axis to much more elaborated helicoid, draught-board or cruciform compositions. There are also small garland-like motives that usually appear surrounding the shield or framing it on its lower half (fig. 9.n°2).

The depictions of rectangular shields show a similar variety, ranging from quite simple large or small rectangles to complex motives of many parallel rectangles framing a central space, which sometimes contains several geometric elements and others, sets of small pecked cup marks (fig.9.n°1).

According to associative criteria, the chronology of these depictions could be connected with the appearance of the large naturalistic anthropomorphs from the Bronze Age onwards and therefore after the first series of Neolithic-Copper Age zoomorphic depictions. Although it seems that all these types appeared at more or less the same time, the present writer believes, that only the circular types persisted longer. Our point is based on the fact that the last group of shields, which is the only one associated with human figures, shows a more evolved characteristics. During their last phase, these shields do not always are associated to anthropomorphs, but they usually appear in more or less numerous groups, where each one is individualised according to the complexity of the decorations. This final

stage could have preceded the appearance of the typical small Libyan-Berber horsemen. Although it is practically absent in Oukaïmeden, this period is clearly superimposed to the circular shields with complex internal divisions in *Jebel Rat*⁵.

4. 2. Games (18)

This category includes a collection of representations that consist of a parallel series (from two to four) of short alignments of pecked dots. An oral interpretation for these series has been provided by the shepherds currently using the pastures of Oukaïmeden (fig.9. n°4). We did not find any figurative superimpositions to other typologies or clear associations to assign a specific chronology to these series.

In addition to this, there are two square depictions in rock-art station 35 of OK6 area. They have been interpreted as games, specifically two images of “*Alquerque*” (also known as Nine Men’s Morris) or as *Awale* in many African countries).

4. 3. Necklaces (3)

This category includes a very peculiar depiction, found only in Oukaïmeden and scarcely representative. Only three motifs of this kind are recorded, all of them in OK6 area (rock-art stations 19, 20 and 27C).

They consist in a simple grapheme made up of a set of curved parallel lines that can be connected -or not- at one of the ends. Its interpretation as necklaces is obviously very subjective and we cannot assure that they stand for real archaeological items). (fig.9.n°3)

The small size of the sample does not allow us to establish any figurative relationships. In addition, the lack of overlapping prevents us from any chronological or cultural interpretation.

4. 4. Scabbards (1)

There is a single representation of this kind, made by abrasion, in panel 5 of rock-art station 1 in OK2



Fig. 10. “Idol” depictions in Oukaïmeden.

“Village” area. It has been interpreted as a scabbard, considering the lack of a hilt, and the existence of an internal reticular structure in the blade area, which prevents it to be interpreted as a weapon with any degree of certainty. Thus, following Rodrigue’s criteria (1999: 70) we considered more appropriate to classify this figure into the ethnographic category (fig.9. n°5).

4. 5. Walking sticks (1)

This category includes a single pecked depiction in rock-art station 2 of OK5 area. Its interpretation must be considered with caution, due its unique character and therefore, the lack of parallels. There is neither overlappings, nor associations that could offer a clue about its chronology or its cultural context. Morphologically, it consists of a long curved handle which splits in two at one of its sides to connect with a small oval extension acting as the end of one of the sides (fig.9.n°6).

4. 6. Epigraphy

This category includes the epigraphic manifestations discovered in Oukaïmeden, from the two inscriptions in Libyan-Berber alphabet (fig.9.n°8) overlapped to an elephant and to an anthropomorph respectively, in the Elephants’ Frieze, to the Arabic sings carved on rock-art station 25 of OK6 area. The latter are probably of a recent chronology, as may be concluded from the lack of patina shown by its *ductus* compared to that of the prehistoric figures on the same panel and its peripheral position regarding the rest of the figures and the available surface.

4. 7. Burials (3)

Three complex pecked depictions of rock-art station 1 in OK3 area have been included in this category. The present author based his interpretation of these figures as burials, on similar cases documented in the schematic rock art of the Iberian Peninsula, traditionally considered as representations of prehistoric inhumations (Acosta, 1968; Caballero, 1983).

They consist of an overhead depiction of a cist or a rectangular shaft grave with a schematic representation of the body placed inside, showing their arms crossed and, in one case, bent legs (fig.9.n°7).

The chronological classification of these figures is uncertain, although the technique used to represent them must be highlighted, since it is also used in several weapons -in some cases grooved blades - engraved in the same panel. In addition, these figures appear underlying the large series of more than one hundred cup marks, marking the last icono-

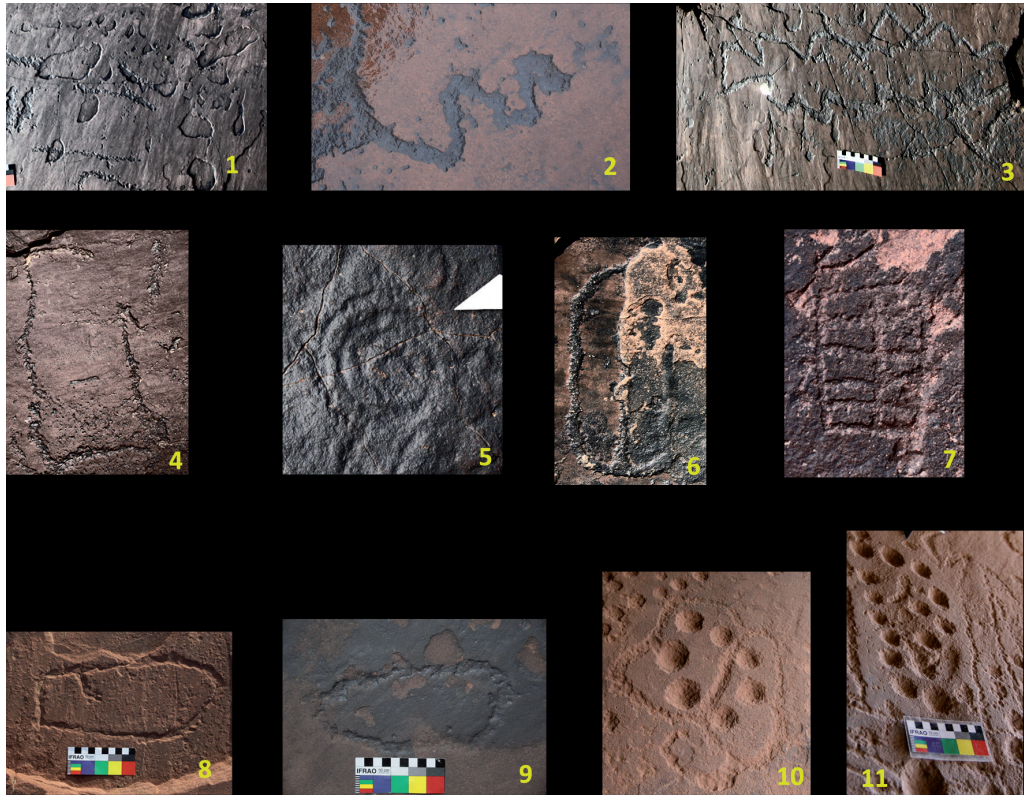


Fig. 11. Typology of “symbolic” motifs in Oukaïmeden. 1 Straight lines; 2 Undulated; 3 Chevron lines; 4 Rectangle; 5 Spirals; 6 Figure in “Phi”; 7 Tectiform; 8 Footstep carving; 9 Oval; 10 Indeterminate; 11 Cup marks.

graphic moment of this composition. Thus, these burial images could be considered contemporary to the representations of weapons, which cannot have been executed before the Bronze Age if their features are taken into consideration.

5. “Idols” (6)

This typology includes a series of representations showing similar morphological features. The closest comparable depictions appear in the Atlantic rock art of NW Iberia (Costas and Novoa 1993: 183-196) and the schematic rock paintings in the Peninsula (Acosta 1967).

Five of the six documented depictions are in several rock-art stations of OK5 area, and only one in OK2 “Repeater” area. They were made -in identical proportion- either by pecking or abrading the rock surface. Their morphology is approximately the same in all the cases except for the depiction of panel 2, of rock-art station 13 in OK5 area. They are rectangular, elongated and their upper part ends either with a semi-circular (as in rock-art stations 43 and 45 of OK5 area) or horizontal shape (as in rock-art station 34 in OK5 area). They are divid-

ed internally by transversal lines forming a variety of square spaces that in some cases (as in rock-art station 34 in OK5) and are completely filled by peckings. Their lower end has a small, more or less pronounced recess that appears repeatedly in all the figures studied in this typology (fig.10. n° 1 and 2).

The depiction in rock-art station 13 of OK5 area is different. Although is more or less rectangular in shape, what it could be identified as a head, narrows in the neck area, which serves to separate head and body. The torso is rectangular and do not present any internal divisions. This fact gives it a more humane appearance than in other examples of that same type already described. This fact also reminds some idol-plaques of the Iberian schematic rock art (Collado 1997) (fig.10.n°3).

Based on associative criteria and comparing also carving techniques and the arrangement of these figures on the same surface, there is, in our opinion a clear relationship between the “idols” and several types of weapons (daggers, halberds, maces, etc.). Therefore in the writer’s view, the depiction of idols in Oukaïmeden could not be chronologically previous to the weapons, and therefore, they could be dated to the Copper Age and mainly the Bronze

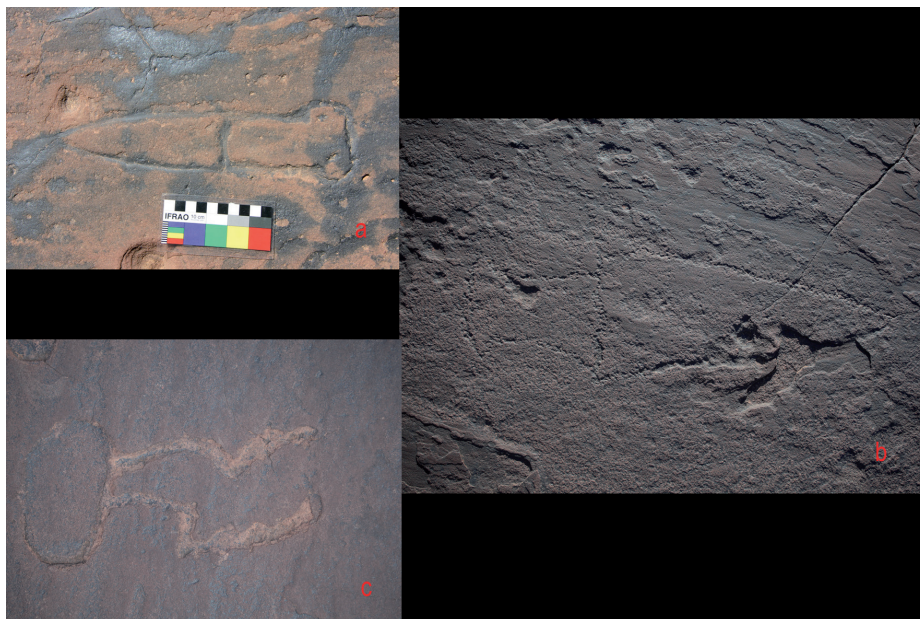


Fig. 12. a) Pecking and abrading combination. The dagger shows in the blade area an abrading re-carving over the original pecking, while pecking is preserved in the handle area. b) Dagger sketched using scattered pecking. c) Use of the rock surface. A natural hollow complemented with pecking and two undulated grooves in rock-art station 5 in OK3 area.

Age. On the contrary, there are not proofs of its survival into the Libyan-Berber period.

6. Symbols (326) and indeterminate figures (111)

This group includes depictions of uncertain meaning. They appear in all the studied areas and are made either using a pecking or abrading technique. However, as in other types, most of these figures were made using the first technique.

They have been named after the morphology of these images, among which we recognize a wide range of figures -mainly geometric- and that can be broadly separated into two large subgroups according to the denomination that we established in the study of the engravings of Molino Manzánez, Guadiana Valley (Collado 2006)

6. 1. Linear open structures

Here are included all the motifs that do not delimit an area. This subgroup is thus formed by straight, simple, double, curved, irregular, chevron, cruciform or undulated lines, angles and spirals (fig.11. n°1, 2, 3, 4 and 5).

6. 2. Linear closed structures

This category includes all the figures that –regardless of their shape- delimit a closed polygon which

can be either empty, filled or internally divided. This subtype comprises oval forms, squares, rectangles, triangles, *tectiforms*, and pairs of feet or foot-step engravings (fig.11.n°6, 7, 8, 9 and 10).

To these two subgroups we must add as well individual marks made by the juxtaposition of several blows on the rock surface, as cup marks made by pecking, abrading or both (fig.11.n° 11), and lastly, a wide range of indeterminate depictions, that cannot be included in any of the aforementioned categories, either because their morphology or due to the poor state of preservation.

Little can be said about associations. Despite the numerous “symbolic” depictions, they do not appear to follow any clear associative pattern on the panels, but instead they look to be added to other depictions in those rock-art stations where weapons, anthropomorphs or zoomorphs play the main role.

The overlappings recorded do not clarify a chronological framework for these depictions. They appear either overlapped or underneath other more representative types as weapons, anthropomorphs and zoomorphs.

The Carving Techniques Applied

Regardless the different chronologies attributed to the diverse types of engravings of Oukaïmeden,

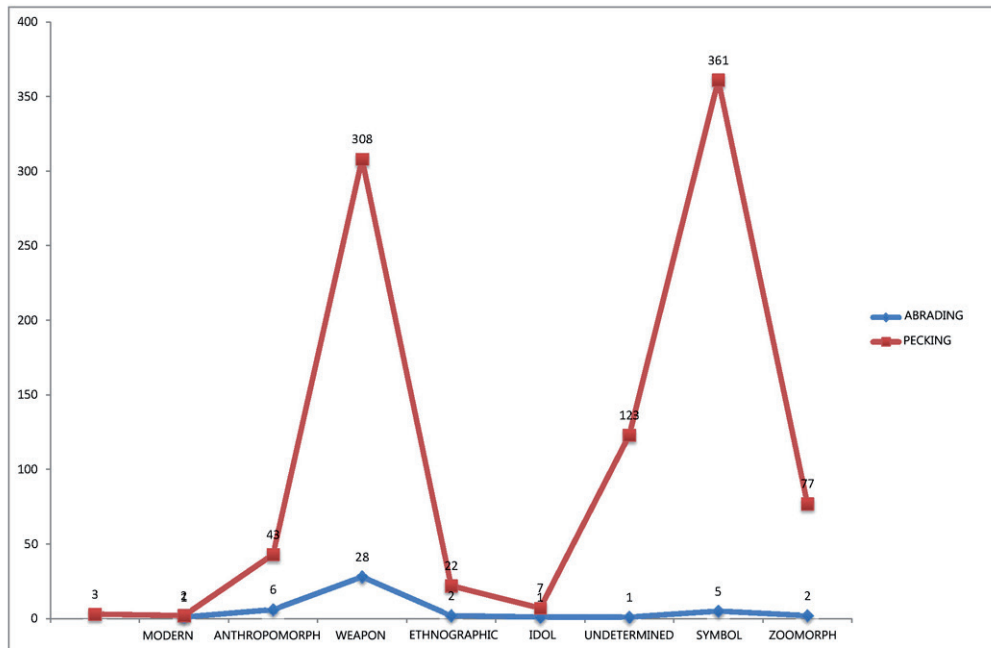


Table 3. Typological distribution according to execution techniques.

their authors used just three techniques to engrave the depictions: pecking, abrading and thin incised trace.

The combination of the two first techniques is also found in a few cases of scarcely representative in statistical terms.

The thin incised trace could be considered exceptional, as it has been documented in a single case (OK2 “Village” area rock-art station 4) interpreted as a possible dagger’s blade depicted without a handle.

The great majority of the other rock art motives have been pecked, as is registered in more than 1000 depictions. Eventually, abrading was used -to a much lesser extent- to carve only 49 motives. However, it should be pointed out that, in addition to the two aforementioned techniques, a new category has been established. This category includes the 18 motives made combining both techniques, and the single motive, in which a thin incised trace was used. Nevertheless, this category requires further explanation regarding the way in which both were combined. Firstly, in some cases the outline of some motives was first pecked. Then, the pecked groove underwent a process of rubbing or abrading. In these cases, the transversal section of the groove shows a U-shaped profile easy to differentiate from the V profile appearing when the grapheme has been made only using abrading technique. The second combination is the addition of both techniques over the same figure, made in part by pecking and in part by abrading

(fig.12a).

Aside from these technical aspects, mention has been made of pecking as the main technique used to execute the engraved figures of Oukaïmeden. The technique applied is very simple. It consists in pounding the rock surface repeatedly and continuously with a striking tool to obtain continuous or discontinuous grooves. These grooves are filled with varying shapes of marks, the depth of which varies depending on the hardness of the rock, the resistance of the striking tool and the strength of the impact (Feruglio,1993: 267).

This technique appears evenly distributed over the whole study area, and it was mainly used to define the outlines of the several figurative typologies established here. It is rarely used to fill the representations partially or completely. These fillings are basically limited to the zoomorphs where sometimes we find partial fillings -dividing the figure internally, mainly in the neck and chest area- or invasive fillings - spreading through the entire body structure of the figure (See fig.6). Some idol representations also present partial invasive pecked fillings (fig.10)

As in many other rock art sites showing pecked depictions, in Oukaïmeden it is practically impossible to determine whether the impacts on the rock surface were direct or indirect. Thus, we have not documented any tool allowing us to approach the subject and have had to resort to baseline studies such as those performed in the *Côa* area (Portu-



Fig. 13. *Gar Issafen* Shelter in Ok3 area.

gal). Here, the use-wear analysis performed on two quartzite stones found in layer 3 of the *Olga Grande* 4 site -close to the *Côa* engravings- indicated that they were used to peck directly on the schist surfaces (Zilhao 2003: 81). This clearly shows a preferential use of direct percussion in prehistoric rock art in open air contexts.

Other aspects of the pecking technique in Oukaïmeden, can be analysed in greater depth by examining the marks left on the rock surface by the different positions of the striking tool. The vast majority of the marks show circular or slightly heart-shaped formats, which indicates that the striking tools were practically perpendicular or slightly sloped over the rock surface at the time of the impact. Thus, the mark made was thin and had regular edges that slowly gave shape to the figure.

The thickness of the grooves varies, fluctuating sometimes between 0.7cm and 3 cm in some exceptional cases, being the overall average thickness 1.2 cm approximately. Usually, the thickness of the grooves is rather uniform during the entire process of carving the figure. However, in some cases we detected the intentional use of different thicknesses to define different areas of the representation.

The process of pecking the Oukaïmeden figures is also interesting and open to discussion. Considering the steadiness and depth of most of the representations, the most probable is that process of engraving was determined by the experience of the artist regarding the figure that he was seeking to represent. Nevertheless, in Oukaïmeden some mo-

tifs made using as a guide a discontinuous and scattered pecking has been detected (fig. 12b). On that basis, the present author thinks that in some cases the figure was previously designed on the rock outlining a sort of sketch that was later filled with regular pecking. This would give form to the characteristic pecked grooves that, as mentioned above, are observed in most of the figures of Oukaïmeden.

Incise abrading grooves are the second most frequent technique used in Oukaïmeden to produce rock engravings. Only 46 figures – around 4.56% of the total - have been engraved using exclusively this technique, and they are clearly concentrated in two areas: OK2 “Village” area, (rock-art stations 1 and 7 respectively, bringing together 24 of the 25 recorded figures in this area), and OK5 area, with 13 figures (11 of which in rock-art station 43).

The main features of this technique are repetitive and can be summed up as presenting always a regular thickness (between 0.8 and 1 cm), similar to all the figures. They also show a V-section and a very steady *ductus* in all the examples analysed, without refurbishments or sight lines. Unlike the case of pecked depictions, there is not a single rock-art station in Oukaïmeden where this technique was exclusively used, as it always appears together with other pecked figures.

The use of this technique is especially significant when compared with the different types of figures (table 3). Thus, while pecking is used in all the types documented in Oukaïmeden, the abrading technique is mostly used to represent different kinds of weapons. In fact, 60.89% of the abraded motives are weapons and, to a lesser extent, anthropomorphs (13.04%), symbols (10.86), zoomorphs (4.34%) and ethnographic elements (4.34%).

To deal with this topic in greater detail, it should be highlighted the use rate of the abrading technique in certain kinds of weapons, such as halberds (8) and daggers (9), especially those daggers with grooved blade, and, in a smaller proportion, maces (3), swords (2), spears (2), arrows, “*falcatas*” and axes (1 case of each of the three latter types).

Lastly, mention should be made of the low frequency of interaction between the rock surface and the figure depicted in the rock art of Oukaïmeden. Usually, the figures appear engraved on the rock surface without establishing any kind of relationship with it. Nevertheless, there are some rare examples where this relationship has been detected. In these cases the irregularities in the rock surface (crevices, hollows or exfoliations) are used to conclude partially or completely the figure. This is the case in rock-art station 5 of OK3 area, where a natural oval hollow in the rock surface was pecked, ending in its right side with two small undulated

grooves (fig. 12c). This might have been used to complement the figure, in an attempt to define a sort of landscape using the irregularities as a contextual framework for the represented motifs. In the latter case, the figures almost seem to be supported by -or be walking over- rock crevices or rock protrusions, instead of simply “floating” on the panel surface.

There are also some examples showing the figure adapted to the irregular frame, conditioned by the uneven rock surface where they were engraved. The more remarkable example probably is the Elephants’ Shelter, where the artist designed one of the large elephants on the south-eastern wall (panel 2) by adapting the trace used to represent the animal’s back to the curved surface offered by a protrusion on the rock (See fig.6.n°3).

Surfaces

The general tendency in the High Atlas rock art is to carve the depiction on the open air, either on flat or slightly sloped rock outcrop. Oukaïmeden is not an exception. Nevertheless, here patterns vary from engravings on a simple detached and isolated slab, to surfaces belonging to large sub-horizontal rocky outcrops. Their colour is quite monotonous: reddish or greyish, with a wide variety of shades. The reddish panels are slightly more numerous (60%) than the greyish ones (40%). However, the rock colour does not seem to play a major role in the criteria used to select the surface for carving.

The same is true for the range of panel angles. The majority (87%) vary between 7° and 20°, simply by adapting to the general inclination of the rocky outcrops in each work area.

The orientation of these surfaces has been classified into four large groups:

- a.- from 0 to 90°
- b.- from 90° to 180°
- c.- from 180° to 270°
- d.- from 270° to 360°

Group B is predominant, accounting for 69% of the orientations of the studied surfaces. The next most

common group is C (15.2%) and, at a much lesser proportion, group A (10.8% of the rock art sites). Finally, group D represents only 4.47% of the rock art sites.

Besides these, five rock-art stations showing a different morphological pattern to the ones mentioned above have been analysed. These are shelters or small caves of different heights and depths, inside which the engraved motifs were made. One of them is the Elephants’ Shelter (rock-art station 7 in OK7 area), the so-called Elephants’ Frieze (rock-art station 14 in OK4 area), rock-art station 16 (also in area OK4), rock-art station 1 (*Gar Issafen* shelter) in OK3 area, and rock-art station 1 in OK2 “Village” area

Vertical panels appear only in two cases (Elephants’ Shelter and Elephants’ Frieze), while in the other three rock-art stations, the figures are represented on more or less horizontal or slightly sloped surfaces, which are solely distinguished from the rest of the rock art sites by the presence of a protecting ledge. (fig. 13).

It is striking that only two shelters were chosen for engraving, because other shelters of this same kind, with vertical walls and rocky ledges, are not infrequent in the Oukaïmeden area.

We thought at first, that this fact could be due to differential preservation, caused by the strong congelifraction in the area that would have detached or even destroyed the vertical surfaces suitable for the engravings. However, a detailed revision of these surfaces led us to reject this hypothesis, since the large majority of these surfaces were perfectly suitable to carve the figures, and the effects of detachment caused by congelifraction were limited.

On that basis, it is clear for the present writer, that the selection of specific locations for engraving was intentional. The selection or rejection of places to carve the rock art according to certain parameters (orientation, slope, type of surface, iconography, etc) could be understood within the framework of a program to manage and control the limited resources of a territory. Prehistoric herders occupied this territory seasonally and made summer pastures the main means of survival of their first economic resource: stockbreeding.

NOTES

1. ARPA stands for *Arte, Paisaje y Poblamiento* in Spanish.
2. Acronyme standing for Institut des Sciences de l’Archéologie et du Patrimoine du Maroc.
3. In one of the examples pointed out by Rodrigue, he identifies the figure of a deer with a weapon superimposed (rock art site 34 in OK5 area) as a bovid. The second case is located in the Elephants’ Shelter and, in our view, does not correspond to a bovid, but to a goat. Also, the relationship of this figure with what Rodrigue interprets as a dagger -located to the right and at the level of the head- is rather uncertain.

4. *Falcata* was the name of the swords wore by the Iron Age Iberians. It consists of a curved sword with a single edge, and with blade and handle forming one piece.
5. Personal information provided by the researcher Alessandra Bravin.