



The use of cave art through graphic space, visibility and cave transit: A new methodology



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ABSTRACT

The objective of the paper is to determine convergences or divergences in the placement of cave art through the combined study of parietal art and the specific space in which it was executed.

The proposed methodology is based on the definition of the concepts of graphic space, visibility, access and capacity. Through these, a series of variables have been created to analyse in the cave: the presence of an archaeological context, the specific location of the figures, divided into three levels of study –graphic unit, panel and topographic unit–, the cave transit, the selected spaces and the potential visibility and observer capacity at each level.

This methodology has been applied to Chufin Cave (Cantabria, Spain). By studying the location of the different panels, two potential uses for the cave were determined: some panels are located on highly visible surfaces in large spaces of the cave using the techniques of deep engraving and drawing with red pigments. In contrast, other panels are situated in low visibility areas of more difficult access, with the technique of shallow engraving. This evidence might point towards a more widespread use of cave art in the first case, possibly including all the community, and a restricted use in the second case.

1. Introduction

Cave art is one of the oldest languages and a primitive form of visual communication (García-Diez et al., 2013, 2016; Guy, 2011; Leroi-Gourhan, 1992). As such it might help us understand how prehistoric societies interacted using the combined study of the spatial organization and the visibility of the depictions (Ochoa, 2016). The methodology presented in this paper takes the space where the cave art depictions were executed as a starting point. We believe their specific location played a significant role in society. In addition, the placement of the depictions is paramount in the determination of the potential use of cave art, since it might have motivated the people or groups that would have been able to see it. The general objective is to define the types of spaces Palaeolithic groups used to create the art in order to determine the role it might have played in their society during the different phases of the Upper Palaeolithic.

The study of the spatial organization of cave art dates back to the proposals by Max Raphaël (1986) taken up, shortly afterwards, by Laming-Emperaire (1962) and Leroi-Gourhan (1965). These authors suggested that the organization of the cave art was not random

although their primary focus was to understand the meaning of the depictions. Since then, research into the relations between the representations and their placement has diversified significantly, and taken into account many variables that had not previously been considered, such as transit and access (Rouzaud, 1978, 1996, 1997; Delluc and Delluc, 1979a; Le Guillou, 2005; Pastoors and Weniger, 2011) lighting (Beaune de, 1987a, 1987b, 2000; Delluc and Delluc, 1979b; Medina et al., 2012; Pettitt, 2016; Pastoors and Weniger, 2011); and more recently: visibility, capacity and intended audience (Bradley, 2009; Pastoors and Weniger, 2011; Villeneuve, 2008; Villeneuve and Hayden, 2007). These researchers proposed a methodology to analyse the variables corresponding to each of these topics. Their approaches constitute the foundation for the following methodology, which is a toolkit to attain the proposed objective by integrating several levels of study, from the graphic unit itself to the whole cave, including the geological space and the panels, and considering the graphic space where the depictions were positioned.

The objective of this article is to determine spatial and visual differences or similarities in the placement of cave art in the Upper Palaeolithic by studying the location of the graphic depictions. To do

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this, the new methodology has been applied to a case study, Chufin Cave in Cantabria, Spain.

2. Prior considerations

Several facts have to be taken into account regarding Palaeolithic cave art and its study in conjunction with its spatial location. Cave art was produced from at least 40,000 years ago until 12,000 years ago. During this time there are marked differences and homogeneities in style, execution and placement (Alcolea and Balbín-Behrmann 2007; Domingo et al. 2008; Guy 2011; Lorblanchet and Bahn 1993; Ochoa 2011, Ochoa and García-Díez 2014). This makes interpretation quite difficult from a diachronic standpoint. Some caves were only utilized during a specific chronology whereas others were used during several phases of the Upper Palaeolithic. Moreover, we need to take into account the definition of “synchrony”: is it a single moment? Or several moments in the same chronological period/culture? Can different styles coexist in the same cultural period? The meaning of “diachrony” also has to be considered: is it several moments in which figures are superimposed, enriching what was there previously? Are they individual phases with different objectives and meanings? Or is it the exact contrary, where the added depictions meant to “destroy” or “counteract” what was already there? If we apply Bailey and Galanidou’s (2009) theories on palimpsests to cave art, we can infer if panels used in several phases might replicate previous behaviours, following a cultural tendency. Palimpsests might also be interpreted as a superimposition of two or more supplementary artistic traditions, where the latter integrates the previous even if the meaning changed. On the other hand, we might find in some cases that the overlapping of two different cultural artistic traditions was avoided, where “social memory” might have been lost, or where two different cultural traditions clashed, in this specific case respecting the existing depictions.

The data obtained through these studies has to be interpreted with the help of ethnographical studies. However, there are hardly any studies in which spatial variables and social aspects are correlated. Some examples are Lewis-Williams (1995, 2005), Loubser (2013a, 2013b); and Whitley (2000). Galanidou (2000) has shown, through ethnographical analysis, that the habitation space in caves has a strong cultural bond, which varies depending on perception and the experience of each of the groups.

Visual perception is a key concept in this study; it is determined by physiology and thus it should be the same for all humans, but it is also determined by psychology, neuroscience, cognition, etc. (Arnheim, 1979; Cenek and Cenek, 2015; Soffer and Conkey, 1997). It is not passive, and viewing implies a selection of what there is around. This suggests differences between cultures or societies and indeed it has been shown to be greatly influenced by culture: Asians see the world holistically –paying attention to the whole visual field and establishing relations with the objects– whereas Westerners are analytical –focussing attention on prominent objects– (Masuda and Nisbett, 2006). When or where these differences developed is unknown but they are probably influenced by the environment. The variations in current societies suggest that the way of perceiving was not the same during the Upper Palaeolithic.

3. The space in the caves: A theoretical approach

Regarding cave art, we can consider that “space” is the physical area where the depictions were traced. In our case, it is restricted to caves, which constitute a natural architecture, and thus it is easier to define since it is limited by the geology of the cave. “Space” is both the place occupied by a person and the void generated by the lack of occupancy. It is limited and usually has a specific use.

The consideration of space in cave art is necessarily significant: the depictions were specifically created in a space, they were meant to be there. This means the placement, the illumination, and the visual

perspective are relevant in the analysis of cave art. Swartz and Hurlbutt (1994) proposed that the appropriation of a space follows a process starting with the general perception of the space followed by familiarization, subsequently creating a social value by the different roles that it takes on. It is therefore a valid premise to state that space and use are inherently linked and thus we can infer the use of the cave art by studying the space itself. The problem is that space is subjective; it is based on perception and varies from one individual to another. Space is not only physical, tangible and real, but also virtual and it is formed by the perception of a single person or a group of people. The selection of space represents a subjective choice by the Palaeolithic groups: it comprises an idea and an artificial sense. The way the depictions were articulated in the cave’s space gives them a specific sense. Moreover, space is not only restricted by these constraints but also, in caves, it is limited by light, both natural –in the case it reaches the area with depictions–, and the artificial light carried by people to guide themselves through the dark areas of the cave.

We can differentiate two types of spaces in caves: graphic space and non-graphic space. ‘Non-graphic space’ was either not utilized or it was, but the art has disappeared due to preservation issues. The problem is that, theoretically, both can be easily differentiated, but in practice, they are impossible to distinguish. Graphic space was used by the Palaeolithic artist¹ to execute depictions. This paper will focus on the latter. To carry out the analysis, three levels have been considered: the topographic unit, the panel and the graphic unit (Fig. 1).

Topographic unit is a space in the cave defined by its geological characteristics and the subterranean topography (vestibular area, chamber, gallery, etc.). It can contain one panel or various panels with one or several graphic units.

The grouping of depictions has already been analysed from very different viewpoints (GRAPP, 1993, p. 303; Leroi-Gourhan, 1992, p. 364; Vialou, 1986) and consequently several concepts –panel, graphic field, graphic space– have been used to express the same idea. The word ‘panel’ is, nonetheless, the most common. It is the surface utilized to decorate. It can be defined by proximity of the depictions (Leroi-Gourhan, 1992, p. 364 – “Champ manuel” limited to 80 cm around the depiction) but also by its geological characteristics.

Finally, Graphic Unit is an entity of shapes or marks that constitute an ensemble or structure (García-Díez, 2002). It can be recognizable, such as an animal depiction or a sign, or non-recognizable pigment stains, remains of a depiction, etc.

4. Criteria for spatial analysis

Graphic ensembles can be analysed from a holistic point of view by integrating different characteristics such as the presence of archaeological remains, visibility, capacity, illumination, access and transit:

Archaeological Context refers to the archaeological remains in close proximity to the depictions (Conkey, 1997); it may or may not be directly related with the execution of the rock art, but even if it is not, it can provide very useful information. If the depictions are in close proximity to a habitation context, it might mean the whole group had access to the rock art; on the other hand, an intermittent context might provide information about the execution, the subsequent visualization of the art or even other uses of the space.

Visibility is the distance one can see as determined by light. It is a very important concept but we also have to take into account the differences in perception, which depend on culture, society and other factors. The visibility conditions of a space or a panel would have played a very important part in its selection: the placement chosen could indicate if it was created for observation (or not).

¹ We decided to use the controversial word “artist” for the want of a better word. Our intention is to refer to the person who executed the graphic units without the implications the word has nowadays.

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