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THE MEMORY OF AGES

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## ROCK ART AS A MNEMONIC PROCESS AMONG NON-LITERATE SOCIETIES

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### Introductory note

Non-literate societies did not have writing to preserve their memories. But in those human groups, rock art seems to have functioned as a primordial language, transmitting memories of special events such as comet phenomena and eclipses or daily events such as music and dancing sessions, among other narrative representations, such as hunting and ploughing. This way rock art can be considered the oldest archive of humankind, preserving memories for future generations (Coimbra, 2012b).

In this paper we focus on two themes: rock art and its capacity to record unusual events, rock art and the depiction of daily life. These two subjects of representation had certainly a mnemonic function. Regarding the second theme we will only consider music and dancing scenes, leaving out other images of daily life represented in rock art, which may have also mnemonic characteristics.

### Rock art and the record of unusual events

Among prehistoric societies, unusual happenings in the sky such as comet phenomena and eclipses must have left a deep impression on the minds of the observers, due to the visual impact that they produced. Probably they could have been interpreted as manifestations of the gods and thus represented on rock surfaces in order that future generations should remember the presence of the divinity. They can have been used as historical milestones, being remembered by several generations and used at the same time as a mnemonic process (Coimbra, 2012b).

In previous articles we already mentioned some examples of the representation of comets and meteors in rock art (Coimbra, 2007, 2010, 2012a, 2012b; 2017). Therefore we are not going to repeat here a list of those engravings, but instead focus on cases that may be related to mnemonic processes in rock art, some of

whose more interesting examples are found among the San in South Africa (Woodhouse, 1986; Fraser, 2007; Ouzman, 2010).

According to Fraser (2007) the San, living near nature, would be extremely attentive to unusual events happening around them. Astronomical events such as comets and meteors probably would have made a deep impact on them, as a happening in the sky that should be remembered and transmitted to future generations by depicting it over a rock surface. As a matter of fact, in San rock art, the panels with the depiction of cometary phenomena represent these events integrated into scenes of ritual character, for example, some paintings from Bethlehem District, where a meteor is associated with three anthropomorphic figures with feathers in their arms, which are simulating a flight attitude (Coimbra, 2008: Fig. 5.2), a representative image of the San astral voyage (Ouzman, 2010).

Another example, from Fouriesbourg, is the representation of a fireball (a meteor with a highly visible tail), which is being observed by a group of people, some of them clapping hands, two figures adopting “the ‘arms-back’ posture diagnostic of attainment of altered states of consciousness” (Ouzman, 2010: 20) and two cattle-headed therianthropes, among other figures with feathers typical of trance dances (fig. 1).

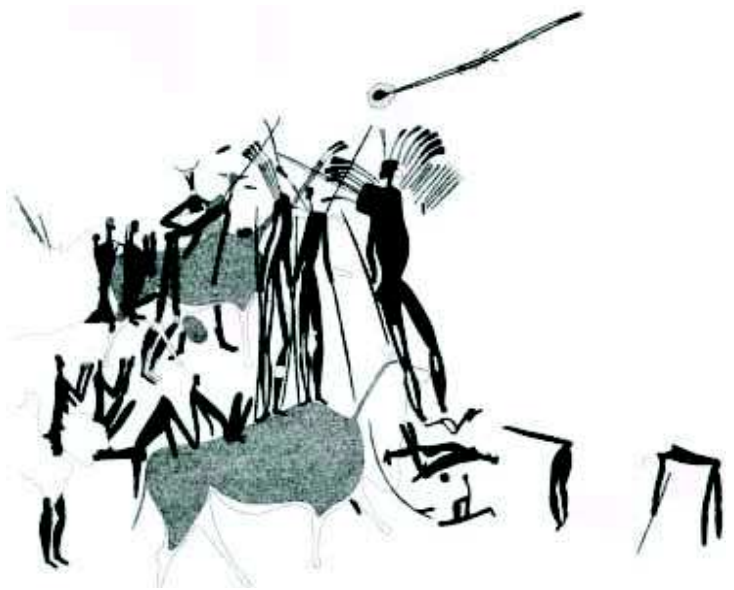


Fig. 1. Meteor and trance dance from Fouriesbourg (after Ouzman, 2010).





Fig. 2. Paintings from Pala Pinta interpreted as a cometary representation (left) (photo: F. Coimbra).

The topography of these rock art sites is “a mnemonic for the San cosmos” (Ouzman, 2010: 28), being also large spaces with abundant evidence of intense socialization, suggesting a culture centre of the San world. Interestingly, each site is located near deep waterholes or natural springs. According to San beliefs, “water provides an earthly anchor for heavenly bodies. Structurally, heavenly bodies have their origin in an upper spirit world. They then travel brightly and ominously through the sky before falling into a waterpit, which constitutes an earthly access to the underworld” (Ouzman, 2010: 29).

Comet phenomena are also represented in rock art in other parts of the world. For example, several tribes of Native Americans interpreted comets and meteors as the voyage of a shaman’s soul to the afterlife (Coimbra, 2010), an event that surely should be registered and remembered. Could this be the interpretation of some comet rock paintings from the cave of Burro Flats, in California?

In Europe there are also some depictions of comets in rock art. Among other possibilities, one of the best studied cases is the painted rock shelter of Pala Pinta (Alijó, Portugal). These late prehistoric paintings (fig. 2), were the subject of some multidisciplinary research, involving archaeologists, astronomers, and

technicians of 3D photography, arguing that some figures may depict the passage of a comet (Coimbra, 2017).

A database of known comets shows that in the period between 5500 BC and the year 1 BC, about 680 comets passed the area of Pala Pinta. Among them, four comets had a trajectory similar to the paintings depicted on the rock shelter: Comet Biela, Comet Kowal-Vavrova, Comet Väisälä 1, and Comet P/2004 VR8, which is the one with most possibilities of being represented, since it was visible during 143 days in the year 4626 BC (Projecto Pala Pinta, 2014). Such a long period of visibility certainly would have been a fact to remember.

It is not easy to find unambiguous examples of the representation of eclipses in rock art. Indeed, some published examples are too speculative. Nevertheless, astronomical research done by NASA provides maps of visible eclipses (total and partial) since the fourth millennium BC (Espenak, undated). For example, between the fourth millennium and the third millennium BC, 634 total eclipses occurred, which means 63.4 eclipses by century and 6.34 by decade. This means that in a lifetime of about 40 years, 25 total eclipses would be visible in the world (Coimbra, 2017). Surely these examples were not seen everywhere at the same

time, but certainly there were enough cases to constitute a reason to be remembered and registered in prehistoric art.<sup>1</sup> Interestingly, traditional Aboriginal Australian cultures provide less subjective information, which “includes a significant astronomical component, perpetuated through oral tradition and ceremony (Norris and Hamacher, 2010: 1). Indeed, some of these cultures explained eclipses as a conjunction of the sun and moon (Coimbra, 2017), “caused by the Sun-woman being hidden by the Moon-man as they make love” (Norris and Hamacher, 2010: 4).

### **Rock art and the record of daily life**

Rock art has many narrative scenes such as ploughing and hunting, which may have mnemonic characteristics.<sup>2</sup> Besides these examples we must be aware that in many prehistoric cultures music is an integral part of daily life, used to keep and transmit knowledge, to summon protection, to remember ancestors or to regulate social and economic activities (Torres, undated). Interestingly, several late prehistoric paintings from different parts of the world depict dancing scenes (certainly using some kind of sound or music), that were registered on rock surfaces possibly to remember some rituals connected with those dances. It seems to be the case of the Neolithic paintings from Wed Mertoutek (Algeria), showing two girls dancing in a very dynamic way (Anati, 1994: fig. 76). Also from North Africa, an example from Tadrart Acacus (Libya) depicts three girls, one of them clapping hands and the other two holding tree branches (Anati, 1994: Fig. 53), probably in order to produce some sound. From Saimaly-Tash (Kazakhstan) there is a group of engravings, dating from the second millennium BC, which seems to show a ritual dance in front of a man holding a sun image (Coimbra, 2012a: fig.3), a figure with an intense symbolic meaning.

Dance scenes with different chronologies have been studied by the Italian researcher G. Ragazzi, who argues that “in the analysis of a dance scene we are facing a representation which is ... reproducing a continuous series of images epitomizing a real event occurring in

time, and which remained alive in the memory of the person who has experienced it. The sequence of movements linked to that event is rendered with a unique mark in such a way that its observer (believer, member of the society, priest) can recognize the image as a formalization of the event” (Ragazzi, 2015: 312–13). Dance scenes appear, therefore, with a high mnemonic characteristic, and there are also many examples represented on ceramics since the Neolithic in many parts of the world.

However, it is important not to forget that generally these dances certainly had the sound support of drumming or some kind of music. As a matter of fact, the archaeological record shows the existence of clay Neolithic clay drums covered with animal skin, from several parts of Europe, for example Sjäne (Sweden), Knabstrup and Garup (Denmark), Mecklenburg (Germany), and Mrowino (Poland) (Aiano, 2006).

Furthermore, rock art depicts some drums, such as in the Bronze Age engravings from Bhimbetka, in India (Meshkeris, 1999). Smaller drums can be seen on a Neolithic wall painting from Çatal Hüyük (Turkey), where a man is represented holding a hand drum (Mellaart, 1967: figs 61–63), and also on a rock art scene from Wadi Harash (Negev, Israel), dated from the second millennium BC, where a human figure is playing a hand drum, together with two persons playing lyres and four people dancing (Anati, 1994: fig. 156).

Recent research in sound archaeology (or archaeo-acoustics) has been paying attention to mind/bodily experiences caused by sound. Interestingly, back in 1967, the anthropologist R. Needham (1967: 610) had already mentioned that “there is no doubt that sound-waves have neural and organic effects on human beings, irrespective of the cultural formation of the latter. The reverberations produced by musical instruments thus have not only aesthetic but also bodily effects.” For example, B. Watson (2009) argued that frenetic dancing (to the sound of drums), which was probably used in several prehistoric rituals, may have resulted in a trance, or maybe in altered states of consciousness. There are several San paintings from the Ukhahlamba-Drakensberg National Park that appear to relate to trance dances, healing rituals, and rain-making, and often show therianthropes such as elongated human figures with antelope heads and hooves (Bradshaw Foundation, undated).

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1 For more complete examples of eclipses in rock art see Coimbra, 2012b; 2017.

2 Due to the limit of space for this article we will focus only on dance scenes.

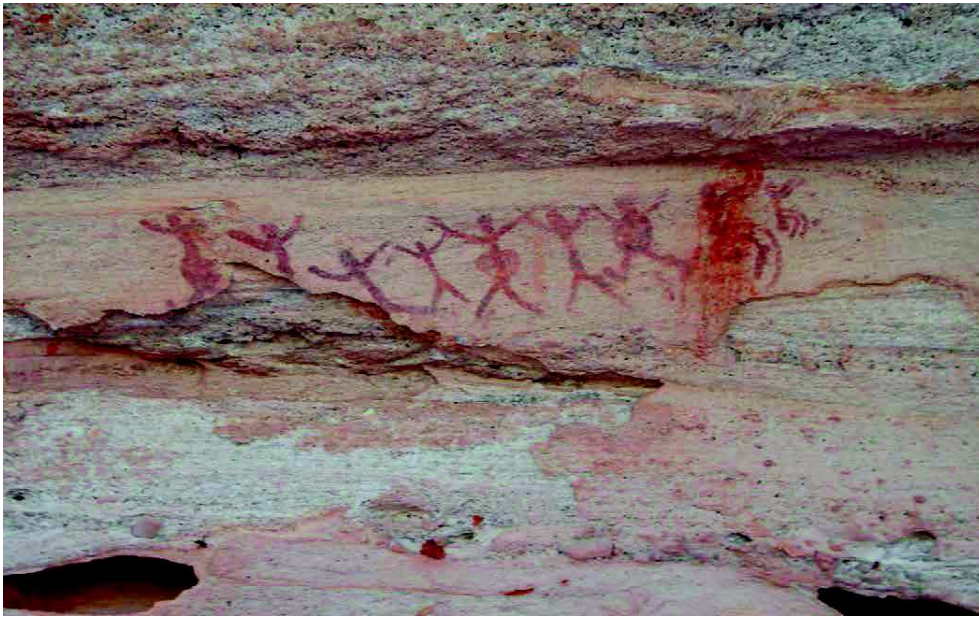


Fig. 3. Dance scene from Toca do Estevo 4, Serra da Capivara (photo: F. Coimbra).

In South America, some cases of dance scenes can be found in the painted rock shelters from the region of Serra da Capivara (Piauí, Brazil), dating from the period of early agriculturalist peoples (fig. 3).

There is an interesting example with a similar chronology<sup>3</sup> at Toro Muerto (Peru), with some figures dancing, each one having “a different mask which indicates his identity (or the identity he represents in the dance)” (Anati, 1994: 153; fig. 157).

### Final statements

In their need of survival, non-literate societies had to be aware of changes in time. Besides the use of calendars based on moon and sun observation (Coimbra, 2012a), they would need a mnemonic to explain and control crucial events such as comet phenomena and eclipses, which could be provided by rock art images. Indeed, prehistoric societies had a cognitive need of explaining and controlling astronomical phenomena (Boyer, 1993), which resulted in many cases in the creation of myths and beliefs.

One interesting example, among many others,<sup>4</sup> appears in a more recent society, that of classical Greece. It is the myth of Phaeton, who asked his father if he could ride the sun’s chariot, but lost control and fell

into the Eridanus River, which is considered by several astronomers as the fall of a meteorite.

In daily life, prehistoric societies believed in the presence and actions of evil beings, which could bring illness, disaster, and natural catastrophes. Probably these people thought that certain actions such as music and dance could protect them against such things (Lund, 2018), so that these activities became organized as rituals and therefore necessary to be known by all members of society and remembered for the future. For this purpose, nothing better than to register those actions, rough paintings or carvings, on rock surfaces, which seem to have an everlasting durability.

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<sup>3</sup> There are also dance scenes in Chile with the same chronology (Marcela Sepulveda, personal communication).

<sup>4</sup> For more examples see Coimbra, 2010.



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