

## CAN AUDIO-VISUAL CHARACTERISTICS OF A ROCK ART SITE AFFECT HOW PAST SOCIETIES EXPERIENCED AND UNDERSTOOD ROCK ART?

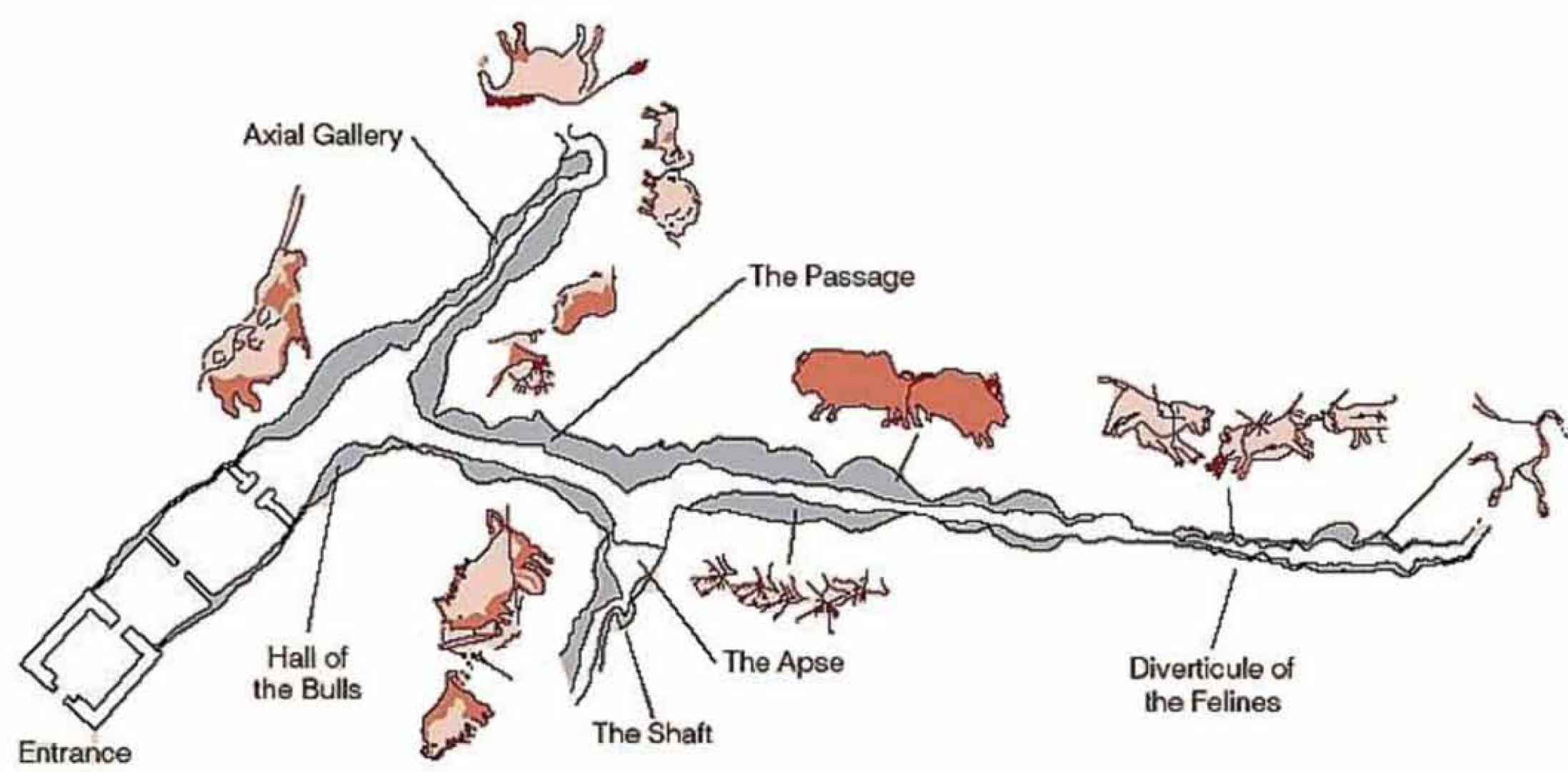


Figure 1. A map of Lascaux cave. (Lewis-Williams 2004:238). *The Mind in the cave*. Fig.56.



Figure 2. A Bison from Niaux with motion in its turned head and drawn lines over the body interpreted as missiles. *Images of the Ice Age*, (Bahn, P. 2016:280) Fig. 11.3.

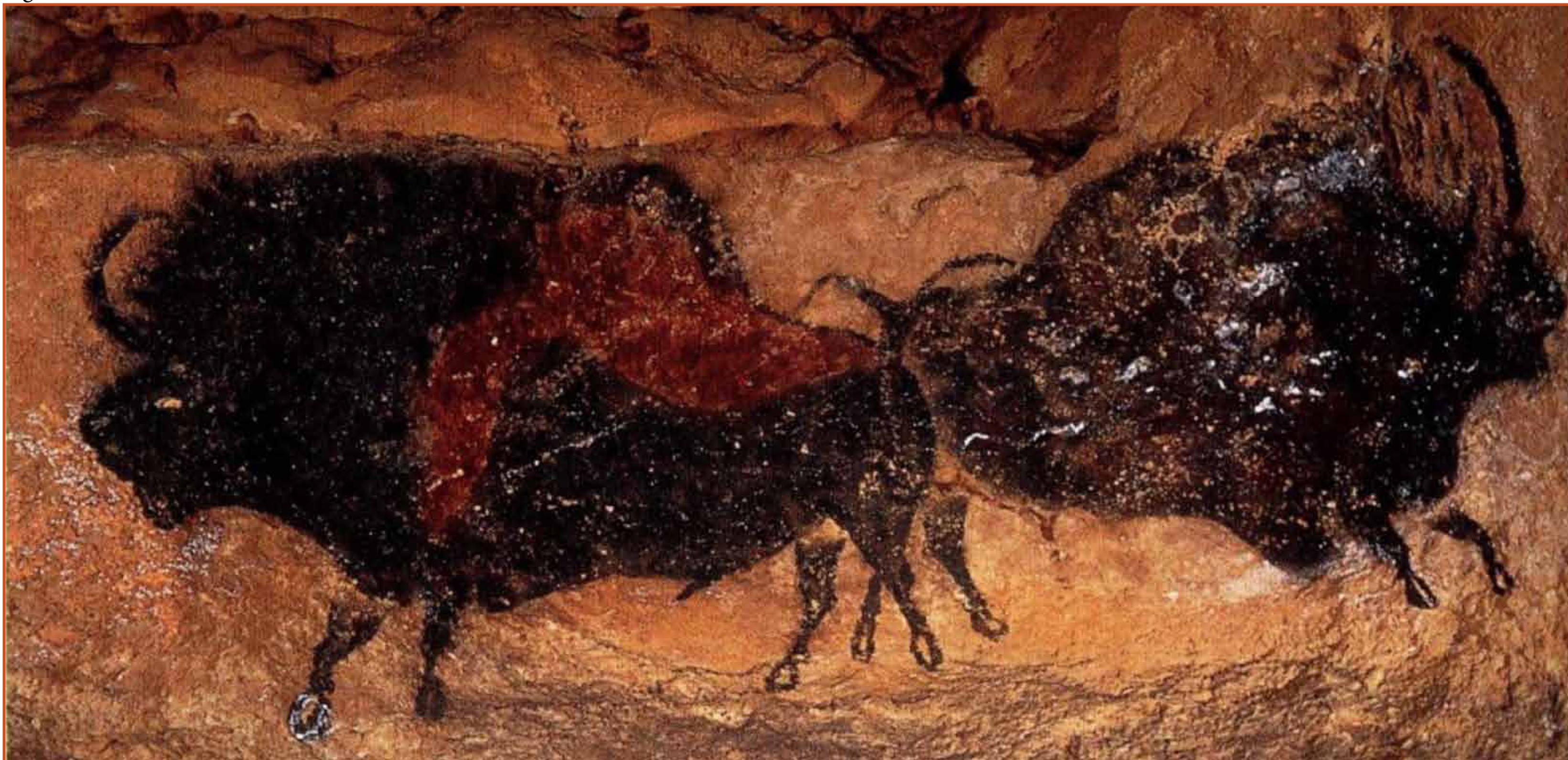


Figure 3. Image of two bison emerging from a hollow in the rock face out and around the viewer in Lascaux. (Lewis-Williams 2004:248) *The Mind in the Cave*. fig.27

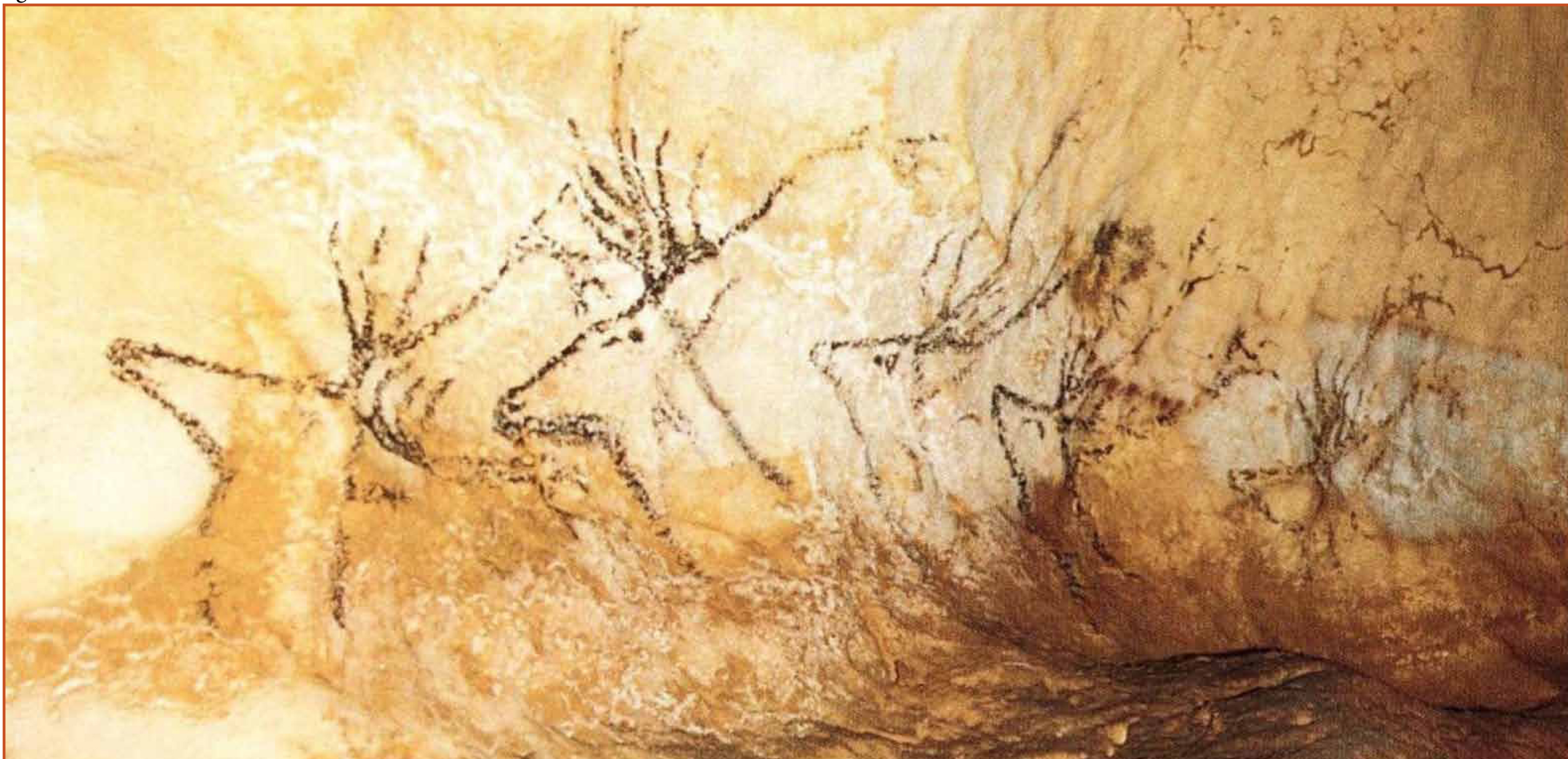


Figure 4. Famous 'swimming' deer at Lascaux showing juxtaposition and use of cave morphology to suggest a stream. Bahn (1997:147). *Journey through the Ice Age*. Fig. 10.14

The visual sense in our modern culture has taken over from our other senses in a disproportional way, in modern hunter gatherer societies other senses such as sound are equally if not more important.

### Sound and Location

Is the position of art within caves such as Lascaux and Niaux in France, significant acoustically? Were areas to decorate deliberately chosen that have specific acoustic properties such as resonance, reverberation and echo and were specific animals used to decorate these areas? Sound reflection experimentation at rock art sites has revealed that percussion noises (from clapping or producing stone tools) can produce echoes. These can sound similar to the galloping of a horse or the thundering of a buffalo stampede as though about to emerge from the wall (Waller 1993a:2).

In Lascaux the images of horses, bulls, bison and deer are in regions with high levels of sound reflection, whereas feline art is in regions of the caves with poor acoustics. This suggests an acoustical influence on both the placement and content of the art. The shape of a cave can exert general influence on the placement of images and acoustics are affected by cave shape. However, the highly sound-reflecting Axial Gallery decorated with ungulates and the acoustically dead Chamber of Felines in Lascaux are both narrow dead-end tunnels, suggesting that the cave shape was influential only to the extent that it affects the acoustics (Waller 1993a:2). (Fig.1)

The location of decoration for acoustic reasons is hugely important and as artists made use of the morphology of the caves it is likely they also used acoustics. The Salon Noir of Niaux, is a huge high chamber where art is on the backwall like a stage (Bahn 2016:314). (Fig.2). Low tone male voices resonated best in experiments at the Salon Noir especially if accompanied by a low tone drum or bull-roarer (Reznikoff 1995:550).

In tunnels, up to ten metres long at Isturitz, a red dot appears at the very location of maximum resonance. Advancing in darkness, in a narrow tunnel humming could be used as a kind of sonar to tell whether there is space ahead (Reznikoff 2014:104).

### Motion and morphology

Alongside the acoustic experience is the visual including the clever use of cave morphology. Prehistoric artists were well aware of and made ample use of this for images to add depth, making the animal appear to be entering or leaving crevices in the wall. (Fig.3)

Artists created the illusion of motion by use of juxtaposition and superimposition. In Lascaux there are 165 juxtapositioned scenes representing the motion of different animals such as horses, deer, aurochs and goats. The famous scene in which five deer appear to be swimming, where their heads may be interpreted as individual animals or just one that is moving. (Fig.4).

More than 100 lamps were found inside Lascaux cave when it was discovered in 1940. Flickering lamp light used to illuminate images can create the perception of animation and life especially if re-enforced by acoustic effects. The image is static, artificial but sound alongside the image is tangible creating dynamism (Cholodenko 1991:281). Superimposition of parallel lines in the feline in Lascaux could be urination or represent sound emission (Luis (2009:1306).

The world that surrounded our Palaeolithic ancestors was in continuous motion so why wouldn't they want to create this effect to make it more real? The images may seem set and "lifeless" to us today depicted as they are on cold hard rock with unnatural lighting but it would have been important to the prehistoric people to use devices to create the illusion of movement. This is why some images are carefully drawn to show superimposition and juxtaposition and with the use of lighting could enable storytelling and imagination.

### Spirit and ritual

Reznikoff (2014:105) suggests that Ethnology and ethnomusicology show there are no ancient civilisations without belief of an invisible world and associated rituals. Religious or spiritual beliefs delivered by the use of entertainment devices assure that the intended, but not always transparent or entirely conscious, social cohesion message is delivered and complied with more successfully (Culotta 2009:787). These devices do not leave tangible signs, any more than created sounds did and we may not believe in such things today but ancient civilisations did.

Cave images could be a form of mnemonic or memory aide (Bradley 1997:12). In societies that lack writing oral tradition is fundamental in transmission of societal values and behaviour. Knowledge of the environment is vital to the survival of very mobile groups especially in changing conditions and resources.

### Conclusions

Cave sites and images were important to society both socially and spiritually. Sound in the form of natural acoustic echoes, reflections and reverberation has not been given the recognition that it deserves in relation to the positioning of rock art in cave systems. It is vital that acoustic research continues especially for deep caves sites as a lot of the current case studies are rock shelters. The same lack of recognition can be said for animation of rock images.