THUNDEROUS REVERBERATION AND ROCK ART
THUNDERSTORM IMAGERY

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Thunder myths around the world contain thunder god descriptions matching rock art motifs found in reverberating locations. Thunderbirds are found on echoing cliffs of the Americas, and reverberating shelters of the Southwest contain wide-eyed Tlhoc figures, the Mesoamerica's rain/thunder god. Australia has the Lightning Brothers. In Europe, hoof beats from mythical horses and goats of Odin and Thor reverberated through the skies, and the Bull God’s voice (bull-roarer sound) is the roar of thunder. Greater than 90% of European cave art depicts ungulates, typically thundering stampedes in portions of caves reverberating the loudest. An acoustical connection with rock art thunderstorm imagery is explored. Thunderstorms were one of the most powerful and frightening natural phenomena encountered by early humans, yet also brought life-giving rain. The universal experience of thunderclaps and lightning that was shared by cultures around the world gave rise to many similar legends that explain these phenomena as caused by supernatural spirits, an example of animism.

This paper is a result of investigations of reverberation, which is a particular type of acoustics in which sound reflections are so closely spaced together that they perceptually merge into the gradually decreasing persistence of sound that is characteristic of thunder as well as large spaces enclosed by hard surfaces such as caves and canyons. Without knowledge of the wave nature of sound, reverberation would have been considered a very mysterious phenomenon.

Thunder, echoes, reverberation, bullroarers, galloping hoofed animals, drumming, hammering, “the voice of god”, and flapping wings all sound homologous to each other as revealed in myth, such that they were interpreted interchangeably. Many ancient cultures took advantage of these similarities via homeopathic magic where mimicking the sound of thunder was employed in the belief that it would bring rain. I postulate that the mystery of hearing thunderous reverberating sounds in caves and canyons evoked not only the mental concept of thunder, but also brought to mind those culture-specific images and symbols believed to cause the identical-sounding celestial thunder. Such mythical thunderous sound sources included supernatural thunder beings described as having animal and/or human shapes that correspond to frequently occurring rock art design elements.

The connection between rain-making rituals in general and rock art has been well substantiated in both the Old and New Worlds. Connections have also previously been made between thunder and rock art: “rock thunder produced by one rock striking another… pitted boulders might possibly be viewed as stone drums.” In this paper I concentrate on thunderous reverberation as a signature aspect of thunderstorms and focus on its sonorous connection with both rock art iconography and the long ignored acoustical attributes of rock art sites.
Comparison of Norse thunderstorm mythology portrayed as "The Wild Hunt of Odin" by Peter Nicolai Arbo in 1872 (top), and stampeding ungulates painted in the reverberating cave of Lascaux (bottom) – see the barbed sign reminiscent of the forked trident weapon known to be a symbol of lightning thrown by Eurasian thunder gods.
While researching myths of reverberation and thunder, I noticed a striking similarity between cave art and the depictions of the thunder gods of Europe. The 1872 painting “The Wild Hunt of Odin” by the Norwegian painter Peter Nicolai Arbo, who specialized in painting images from Norse mythology, shows the thunder god leading a stampede of hoofed animals though a stormy sky. This stampede is uncannily reminiscent of the painted hoofed animals stampeding through Lascaux (figures). This rendition of how thunderstorms were perceived by ancient Europeans helped lead me to postulate that the hoofed animals depicted in reverberant caves represent the very same supernatural hoofed animals thought to cause thunder in the clouds.

If so, one can test this postulate by looking for internally consistent images in the rock art that corroborate this postulate, e.g., the presence of associated lightning images. With this perspective, the various “abstract” strokes and barbed signs that have been previously interpreted at face value as mundane weapons or symbolically as male signs, may now be recognized as depictions of lightning accompanying the thunderous reverberation. Lightning in antiquity throughout the world, but particularly in Europe, was typically represented as the spears, arrows, and tridents thrown by the Thunder Gods. In my opinion, designs known to be thunderbolts resemble to a remarkable degree many cave art signs. Scientifically documented acoustic evidence showing hoofed animal imagery occurs preferentially in the loudest parts of caves, coupled with myths that inform of the nature of European Thunder Gods who were closely associated with hoofed animals, suggests that European ungulate cave art may represent thunder spirits. Based on this evidence, I further propose that some of the weapons and branched signs among prehistoric European ungulate cave art may represent the lightning/thunderbolts associated with these hoofed thunder spirits.