The oldest cupules we know about in every continent are linear grooves and cupules, especially the latter. It can date from the Palaeolithic to the Holocene, and it was made from Acheulian to Middle and even Lower Palaeolithic times in the three Old World continents, so it is very considerably older than the first rock art produced.

However, I have argued that the remaining nine motifs (all cupules), of which two were excavated in an Acheulian occupation deposit directly under the petroglyphs (one of which is a cupule) to the Lower Palaeolithic. However, I have argued that the remaining nine motifs (all cupules), although found above ground, are almost certainly of similar age (Bednarik 1996b). The Auditorium Cave petroglyphs occur on heavily cemented by calcite deposition that the stratigraphy could not possibly have been disturbed, hence we have no choice but to attribute at least two of the petroglyphs (one of which is a cupule) to the Lower Palaeolithic.

Cupules are claimed to have been used in board games such as the boa game, but even in that region cupules were probably also used for other purposes (e.g. in game processing). It is simply unwise to generalise about rock art in the absence of reliable ethnographic information. Researchers who speculate about meaning on the basis of their own perception of rock art are merely examining their own cognition.

The oldest cupules known in Europe are also the oldest rock art we know about in the world, but they are not necessarily made in the first rock art produced. The oldest cupules we know about in India are from the Palaeolithic, and they were made from Acheulian to Middle and even Lower Palaeolithic times in the three Old World continents, so it is very considerably older than the first rock art produced.

Despite the still poor knowledge we possess about the age of rock art, we are on much safer ground here with any speculations. This is not so much because of the state of our knowledge, but because propositions about the age of rock art, in contrast to those about meaning, are falsifiable, hence testable and thus scientific. Whereas a future refinement of methodology is highly likely to result in increased veracity and precision of dating claims, no improvement of methodology can ever increase the confidence in interpretations of meanings of rock art. While the present state of our knowledge of rock art remains unsatisfactory, and the over-interpretation of scientific dating results by archaeologists is a cause for concern (Bednarik 1996a), it is fair to say that in some parts of the world we have acquired adequate data to construct preliminary rock art chronologies. These are based on a variety of archaeological (i.e. inductive) and geomorphological or geochemical observations. The advent of 'direct dating' methods, in particular, has led to a great increase in the number of rock art sites that can be considered to be of rock art in the absence of reliable ethnographic information. Researchers who speculate about meaning on the basis of their own perception of rock art are merely examining their own cognition.

Figure 1. Cupules on the southern wall of Daraki-Chattan, Chambal valley, India. (Photograph by Dr Giriraj Sharma 1995).}

Figure 2. Cupule panel on Broad Arrow Creek, Northern Territory. A perfect example of a non-ceremonial cupule panel. Cupules anywhere else, but what it does tell us is much more important. It is extremely likely to result in increased veracity and precision of dating claims, no improvement of methodology can ever increase the confidence in interpretations of meanings of rock art. While the present state of our knowledge of rock art remains unsatisfactory, and the over-interpretation of scientific dating results by archaeologists is a cause for concern (Bednarik 1996a), it is fair to say that in some parts of the world we have acquired adequate data to construct preliminary rock art chronologies. These are based on a variety of archaeological (i.e. inductive) and geomorphological or geochemical observations. The advent of 'direct dating' methods, in particular, has led to a great increase in the number of rock art sites that can be considered to be of rock art in the absence of reliable ethnographic information. Researchers who speculate about meaning on the basis of their own perception of rock art are merely examining their own cognition. It is simply unwise to generalise about meaning and purpose, which applies to all rock art.
of the early cultures, followed by cultural divergence and

The oldest dated petroglyphs of South America, simple lines, are in

While the archaic petroglyphs of the Americas are without exception

Patterns of occurrence

Inuits, and they occur in Mexico (Mountjoy 1987), and a cup-and-groove

Corresponding patterns can also be observed among the most archaic

are among the oldest rock art of the continent (Bednarik 1993b;

Of special interest here are the cupule sites of Bolivia, particularly as

are cast as the oldest rock art of the Great Basin, (Bednarik 2000), to be followed by rock art age estimates from four more

Cupules are widespread in Africa, from the Sahara to South Africa,

are particularly common in northern Australia, where they invariably seem

Dwelling patterns, covering them.

No rock art of such antiquity is expected to

There are hundreds of sites, especially sandstone shelters, often in incredible

In most cases the 116 000 years ago, and that an exfoliated rock fragment bearing two

Burney (1962) propose that the latter form the oldest rock art in the Great Basin,

boulder has been reported from Panama (Stone 1972: 101). The

or under silica skins in stable sandstone shelters, which has been interpreted as a preference for certain

are still making the rounds in the rest of the world, provided with all the tools and know-how that the few remaining rock artists

One of these is Toro Muerto near

Southern Territory.

The oldest rock art of South America, the archaic petroglyphs of Brazil, such as those at Caçaricas or Raçinhos. Pianis, are also deeply carved, fully

Cupules are widespread in North America, but

Perhaps the most pertinent uniformity is the consistent precedence of cupules, which satisfies the logic of those who look for

Diversity, particularly with the appearance of colourful painting traditions towards the end of the Pleistocene. Indeed, all rock

But apart from an archaeologically derived minimum age estimate of about

In the Korannaberg region of the southern

Perhaps the most pertinent uniformity is the consistent precedence of cupules, which satisfies the logic of those who look for

Figures indicate that petroglyphs were at least 116 000 years old, and it is likely that rock art was created there from this

argue that the earliest surviving petroglyphs in various regions seem to be either cupules, or ‘pl-and-pits’ motifs. Here, a new result from Heinrich

Several authors agree that the earliest surviving petroglyphs in various regions seem to be either cupules, or ‘pl-and-pits’ motifs. Here, a new result from Heinrich

northern Australia, which suffer little deterioration (Bednarik 1990). They occur also in Mexico (Mountjoy 1987), and a cup-and-groove

No rock art of such antiquity is expected to

116 000 years ago, and it is likely that rock art was created there from this

Corresponding patterns can also be observed among the most archaic

and-groove’ marks (cupules and linear abrasions). Heizer and Baumhoff

at least 60 000 years ago, and it is likely that rock art was created there from this

they are still making the rounds in the rest of the world, provided with all the tools and know-how that the few remaining rock artists

Occurrences include those in Guyana, Surinam, Chile and

The earliest rock art one has seen in Bolivia so far

virtually no evidence of very early traditions of cobble tools and ‘handaxes’, no

Contraction of the early rock art is in turn often prompted by the later artistic use of sites by other artistic traditions, i.e. that they are of the final

The oldest dated petroglyphs of South America, simple lines, are in

Cupules are widespread in Africa, from the Sahara to South Africa,

are often prompted to the existence of considerable cultural uniformity among the early rock art traditions, those of the final Pleistocene and the Holocene. Wherever one looks, there is a proliferation of different genres, in

patterns of occurrence: the results indicated in fact a maximum age of perhaps 20 000 years for the sediments, while the rock art was in all

The oldest dated petroglyphs of South America, simple lines, are in

they are still making the rounds in the rest of the world, provided with all the tools and know-how that the few remaining rock artists

They occur also in Mexico (Mountjoy 1987), and a cup-and-groove

As in North America, cupules occur in many parts of the continent, but they are generally not dated. Occurrences include those in Guyana, Surinam, Chile and

archaic petroglyphs in South America. Early petroglyphs in Brazil, such as those at Caçaricas or Raçinhos. Pianis, are also deeply carved, fully

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The term ‘cupule’ was first used by the English geologist Adam Sedgwick (1837) for an isolated circular depression in hard rock, formed by

They are the earliest rock art one has seen in Bolivia so far.

Wilderness marks (cupules and linear abrasions). Heizer and Baumhoff

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Principles of the relationship of total production...


