

# Mysterious Cup Marks

Proceedings of the  
First International Cupule Conference

Edited by

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BAR International Series 2073  
2010

This title published by

Archaeopress  
Publishers of British Archaeological Reports  
Gordon House  
276 Banbury Road  
Oxford OX2 7ED  
England  
bar@archaeopress.com  
www.archaeopress.com

BAR S2073

*Mysterious Cup Marks: Proceedings of the First International Cupule Conference*

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ISBN 978 1 4073 0634 6

Printed in England by Blenheim Colour Ltd

All BAR titles are available from:

Hadrian Books Ltd  
122 Banbury Road  
Oxford  
OX2 7BP  
England  
bar@hadrianbooks.co.uk

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# THE AMBIGUITY OF DEPRESSIONS IN ROCK ART

Maarten van Hoek

**Abstract.** This essay discusses three types of depressions that I observed at two rock art panels occurring at two distant rock art sites. The first type involves one (probably) natural oval depression on a petroglyph panel at Checta, Peru. The other two types of (definitely anthropic) depressions occur together on a large rock panel near Bluff, Utah, U.S.A., and comprise an excess of both ‘atypical’ cupules and abraded grooves. The author argues that the two much differing depressions at the Bluff Site may share the same concept, while the depression at Checta may demonstrate that a natural depression may acquire a cultural meaning.

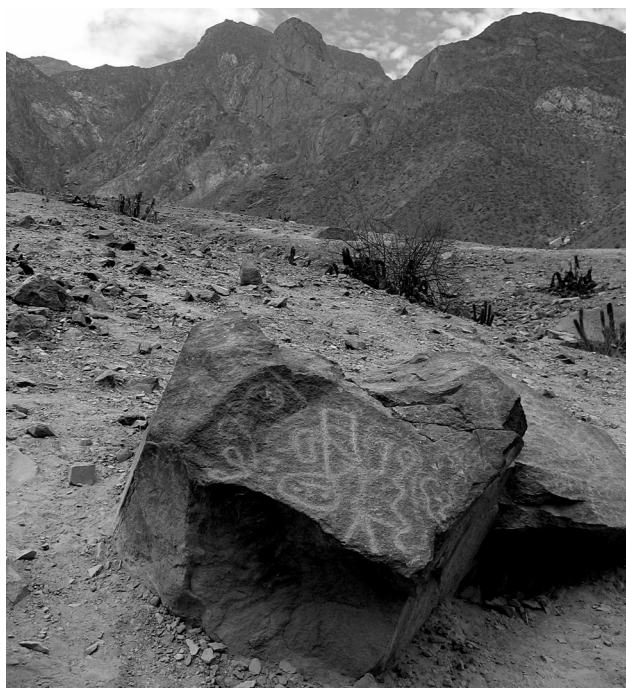
**Keywords:** Petroglyph, Cupule, Definition, ‘Atypical’ cupule, Checta, Bluff site

## Introduction

Both North and South America are well known for their wealth of fascinating rock art comprising numerous petroglyphs, pictograms and geoglyphs. However, one of the simplest, yet most enigmatic petroglyph forms seems to be underestimated and even neglected in many

rock art studies. It is the cupule, a small, hemispherical depression ground or pounded into rock surfaces, used for non-utilitarian purposes. For that reason I welcomed the initiative by Prof. Roy Querejazu Lewis to organise an international conference about cupules, which was held in Cochabamba, Bolivia, in July 2007.

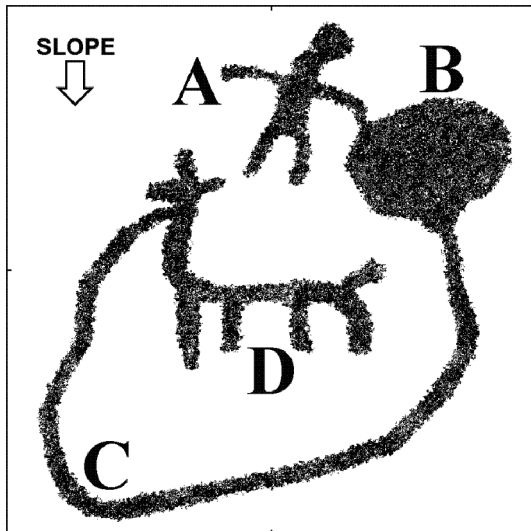
The study of cupules is problematic for several reasons. They occur in so many differing chronological and cultural contexts that it is impossible to attribute one single meaning to them. Moreover, often natural depressions occur on rock art panels, which are occasionally mistaken for anthropic cupules. To complicate things further, it proves that there is no consensus about the status of the cupule. Terms used to describe an anthropic depression often refer to both utilitarian and non-utilitarian depressions. Then there are more or less circular but definitely anthropic depressions that deviate from the ‘conventional’ cupule because they display excessive, ‘non-standard’ size and ‘atypical’ shape. When I use the term ‘atypical’ in this essay it refers to depressions that in my view deviate strongly from the ‘standard’ appearance of the cupule; thus my term ‘atypical’ is a taxonomic egofact. Consequently, it will be necessary to use a definition of a ‘standard’ cupule.



**Figure 1.** The rock art site at Checta, Peru, showing a petroglyph rock in the foreground, looking SW. Photograph by Maarten van Hoek, July 2004.

## Checta, Peru

Checta is a well-known public rock art site situated about 65 km NE of Lima, Peru. The site is situated about 100 m above and south of the floodplain of the river Chillón. A large area of angular blocks of volcanic stone litters a small terrace (average altitude about 1150 m) on a steep mountain slope (Figure 1). About 450 blocks of stone bear



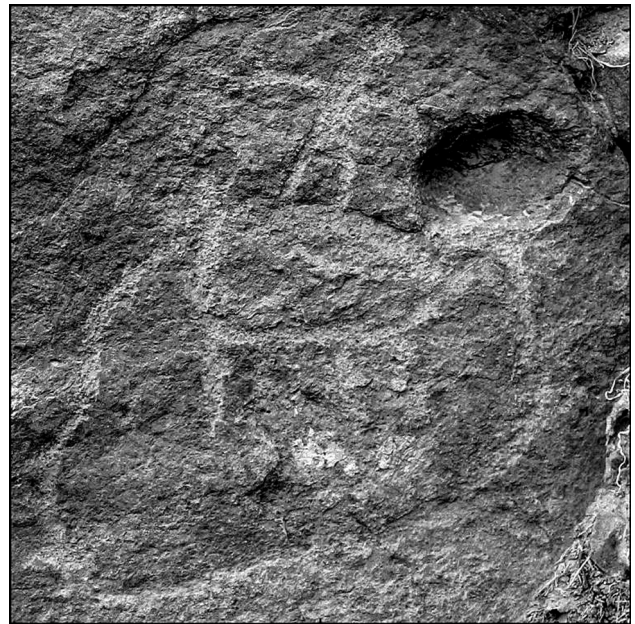
**Figure 2.** Petroglyph from Checta, Peru. See the text for explanation. 20 cm frame shown. Drawing by Maarten van Hoek, based on Figure 3.

up to 4750 petroglyphs. Biomorphs are relatively scarce: 4.7 % represent zoomorphs (223 examples) and about 1.2 % depict anthropomorphs (a little more than 50 examples). The other petroglyphs are mainly ‘geometric’ designs and other marks. Importantly, at least six boulders have been reported to bear altogether hundreds of definitely anthropic cupules (Guffroy 1980–81; 1999).

The petroglyphs discussed here are found on an almost vertical panel of a small boulder (36 cm in height by 25 cm in width). The stone is partially buried and seems to be part of one of the anthropic circular structures that are found distributed within the boulder field. The shallow grooves of the petroglyphs are all lightly pecked and rather weathered. The ensemble constitutes four major elements (Figure 2):

- A: a simple but rather small anthropomorphous figure with outstretched ‘arms’ and no further anatomical details.
- B: an oval area situated only 1.5 cm from the right-hand edge of the stone, measuring 4 cm by 6 cm.
- C: a long sinuous line that connects the oval area with the neck of a zoomorph.
- D: a simple matchstick-like zoomorph (probably a llama).

What cannot be seen from my drawing, however, is that the oval area is actually a depression (Figure 3) measuring about 3 cm in depth. Two questions immediately pop up. Firstly, is the depression natural or cultural? And secondly, is the depression part of the anthropic imagery? Unfortunately, its origin could not be scientifically established at the time of inspection, but from naked-eye inspection I am reasonably confident that the depression is natural. Importantly, however, one of the ‘arms’ of the anthropomorph touches the depression, and, more meaningfully, it seems to be connected, via a band of light pecking *inside* the depression, with the groove that runs towards the ‘llama’. Thus, part



**Figure 3.** Petroglyph from Checta, Peru. 20 cm frame shown. Photo by Maarten van Hoek, July 2004.

of the depression has definitely been worked on and has been incorporated into a more complex design, whether on purpose or not. However, in view of the thousands and thousands of true cupules found all over the world and the several instances of natural holes being incorporated into rock art imagery, it may be safely assumed that holes in a rock surface (whether natural or cultural of origin) were important in many cultures. Caves and holes in rock surfaces often are regarded as entrances to the spirit world. The inclusion of the oval natural depression on the Checta panel may therefore well be deliberate. So, it does not matter whether the Checta depression is of natural or cultural origin, it is certain that the whole ensemble, *including* the depression, is a cultural manifestation. In case of the Checta cupule it is evident that the depression unambiguously acquired a cultural context because of the band of pecking inside the depression. But even when there would not have been such a pecked line inside the depression, it still might have formed part of the design. For that reason the depression should always be included into illustrations, simultaneously mentioning its ambiguous nature in the text or caption. For that reason I regret that distinct circular depressions are often omitted from illustrations, like the examples on *Piedra 13* and *Piedra 42* at Yonán, Peru (Núñez Jiménez 1986: Figs 342 and 356). At *Piedra 13*, a groove seems to avoid the cupule-like depression, which may be a clue as to the greater cultural antiquity of the depression, if anthropic.

### Cupules

Guffroy (1999: 123) calls the smaller circular cupules on the *other* six stones at Checta *tacitas* or *cúpulas*. This labelling presents the first general problem regarding

cupules, since the term *tacita* is used indiscriminately for both utilitarian and non-utilitarian depressions in Spanish literature. Too many different Spanish terms are used to indicate cupules. So far I could find: ‘*hoquedades*’ (Van Hoek 1997: 37), ‘*cazoletas*’ (Van Hoek 2003a: 75), ‘*pequeños hoyos hemisféricos de planta circular y fondo cóncavo - también conocidos como “coviñas” y “fosettes”*’ (Costas and Novoa 1993: 23), ‘*pocitos*’ and ‘*pequeñas cavidades*’ (Mountjoy 2001: 58). Querejazu Lewis (1998: 48) distinguishes between ‘*cúpulas*’ — true cupules, and ‘*morteros*’ — grinding hollows. Other Bolivian researchers have used the word ‘*cúpulas*’ as well, but make a distinction between ‘*cúpulas auténticas*’ — true cupules, and ‘*cúpulas utilitarias*’ — grinding hollows, the latter also known as ‘*batanes*’ or ‘*moledores*’ (Methfessel and Methfessel 1998: 36). It gets even more confusing when other scholars use terms like ‘*tacitas*’ (Klein 1972; Guffroy 1999: 123; Núñez Jiménez 1986: 66; Mostny and Niemeyer 1983: 33), ‘*huequillos*’, ‘*huecos*’ and ‘*hoyuelos*’ (Núñez Jiménez 1986: 66 and Fig. 1194), ‘*cráteres*’ (Mostny and Niemeyer 1983: 12), ‘*pozuelos*’ and ‘*tacitas cupulares*’ (Ampuero 1993), in some cases making no distinction between utilitarian and non-utilitarian anthropic depressions. Klein (1972: 103) even suggested that cupule-like depressions at the most elaborately ‘*Piedra Tacita*’ at El Encanto, Chile, are unfinished ‘*tacitas*’, but for several reasons I have refuted this idea and postulated that the majority of the small anthropic depressions at El Encanto are a different cultural manifestation entirely and must be regarded as true cupules (Van Hoek 2003b). To bring the Spanish terminology more in line with the English term *cupule*, and to avoid confusing utilitarian and non-utilitarian anthropic depressions, I would like to suggest to use the terminology used by Querejazu Lewis and use the term ‘*cúpula*’ to indicate all non-utilitarian anthropic depressions, and ‘*mortero*’ to indicate the utilitarian anthropic depressions like grinding hollows. In order to distinguish between ‘true’ cupules and ‘atypical’ cupules, this essay, first and foremost, needs an unfailing definition of the true cupule. The standard definition is ‘a hemispherical percussion petroglyph, which may occur on a horizontal or vertical surface (Bednarik et al. 2003, in Bednarik 2008: 70), although, of course, cupules also occur on sloping surfaces. There are several properties that a true cupule must have: origin, shape, size and function. These properties will be briefly discussed.

#### *Property 1: origin*

First of all, a true cupule must be a *cultural* (or *anthropic*) depression. This statement, however, needs some refinement. Although by definition a true cupule has never been formed by natural forces only, it is possible and even likely that the presence of natural depressions have triggered the execution of anthropic cultural depressions. Therefore, when recording depressions in rock art studies, I would like to recommend to always make a clear distinction between three categories of rock hollows: natural depressions, cultural depressions and natural depressions that to some degree, but unmistakably

have been culturally modified. As we have demonstrated with the depression from Checta, the third type may have been accomplished by the (partial) re-working (and possibly deepening) of a natural depression, or by purposefully incorporating a natural depression (whether re-worked or not) into a more complex rock art design in which case the natural depression acquires a cultural meaning.

#### *Property 2: dimensions*

A true cupule is a hemispherical *depression* by definition and therefore must have certain dimensions regarding diameter and depth. Generally it is said that true cupules average 5 cm in diameter and 3 to 5 cm in depth, but there are also smaller and shallower cupules of around 2 cm, as well as larger ones measuring up to 10 cm. In addition, weathering processes often make it very difficult to recognise true cupules. However, not every anthropic depression will be regarded to be a true cupule. For instance, a large circular depression, measuring about 9.5 cm in diameter, with only 4 mm in depth in its centre, should not be admitted as a true cupule. This means that many circular marks with a negligible depth or no depth at all must be rejected as true cupules. It moreover is the context that determines whether the depression is a cupule. For instance, an anthropic depression larger than 10 cm among a large number of true cupules *might* as well be regarded to be a true cupule, especially when occurring on a vertical or steeply sloping surface.

#### *Property 3: shape*

It proves that shape is also a defining characteristic. A true cupule is a *hemispherical* (hence *circular*) depression by definition. Also slightly oval depressions may be regarded as cupules, but clearly oval cupules could be classified as ‘atypical’ cupules. Yet, the property of shape must be regarded in its context. For instance, if a rock surface would feature a large number of *only* kidney-shaped, anthropic depressions, there will be very few rock art researchers (if any) who would classify those depressions as true cupules. On the other hand, when one kidney-shaped depression occurs among a number of true cupules, there is a good chance that it will be classified as a kidney-shaped cupule.

#### *Property 4: function*

It is often stated that cupules are *non-utilitarian* by definition (for instance Taçon et al. 1997: 943) and were not intended for secular practices. However, Bednarik argues that ‘there is no obvious or self-evident separation between some of the[se] economic features and non-utilitarian cupules ...’ (2008: 69). The meaning of the cupule is probably wholly ritual, symbolic and/or religious, but Bednarik rightly reasons that ‘A cupule could only be entirely non-utilitarian

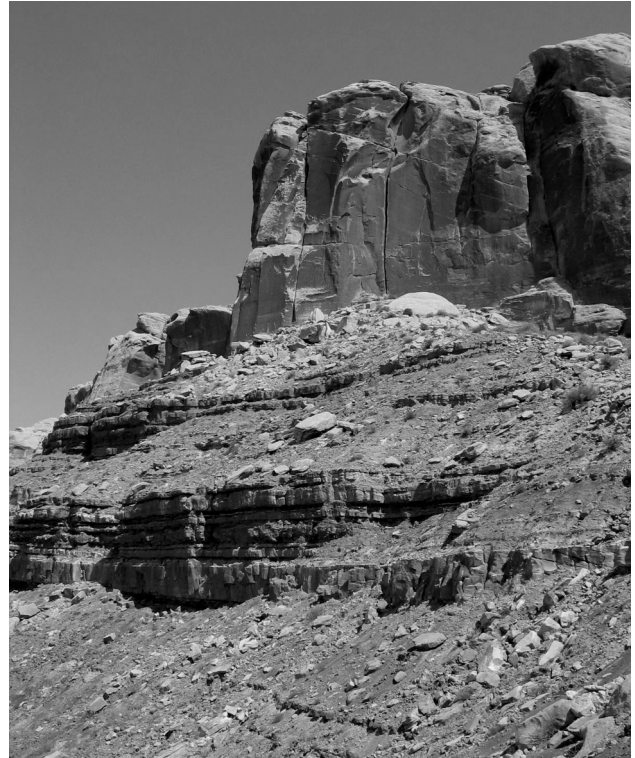
(symbolic) if no practical consideration were involved in its production' (2008: 69). So, although the distinction between utilitarian and non-utilitarian dimensions is often hard to determine, cupules are definitely not to be confused with grinding hollows that are often much larger (they may range from 5 cm to over 30 cm in diameter), though not necessarily deeper than cupules. Grinding hollows are abrasion-formed depressions (of natural or cultural origin) and are often very smooth as they are used for processing or grinding food, dyes or other materials. Another distinction is that true cupules may appear on horizontal, steeply sloping *and* vertical rock panels and even on ceilings (Bednarik 2008: 71), whereas grinding hollows almost exclusively are found on rock surfaces that are horizontal or nearly so. The Checta depression is found on an almost vertical surface, shows internal pecking, and could be regarded as an 'atypical' cupule (if natural, by association).

In conclusion, circular, anthropic depressions may be labelled as *true* cupules, or, alternatively, as *typical*, *standard*, *conventional* or *normal* cupules. However, some cupules may be 'oversized', distinctly oval shaped or do not have the maximum depth in their very centre (however, see Bednarik 2008: 71 and Fig. 20). In this paper I refer to cupules having irregular, non-hemispherical shapes and/or deviant sizes as 'atypical' cupules, stressing again that this is a taxonomic egofact.

### The Bluff Site, U.S.A.

The Colorado Plateau in the Southwest of the U.S.A is home to thousands of pre-Historic rock art sites. A very large part of the imagery on the Plateau is ascribed to the Anasazi, a pre-Historic people that inhabited the area from 1000 B.C.E. to 1850 C.E. Although several sites occasionally feature rock depressions of probable Anasazi origin, cupules are hardly ever mentioned, let alone described, in rock art literature. A large rock art site near the village of Bluff in south-eastern Utah will demonstrate this. Location details of the Bluff Site will not be given here as the site is too easily accessible and the local and national authorities prefer not to reveal the precise location to avoid further damage to this important site.

The Bluff Site (Figure 4) is formed by a complex of vertical sandstone cliffs that overlook a dry river valley. The main rock wall faces SW and is just NE of an enormous sand dune that in places blocks the view from some of the rock art panels. The base of the cliff is at about 1625 m O.D. and its average height is estimated to be about 60 m. Several petroglyphs are in a typically inaccessible position and probably have been made with the aid of ladders, scaffolding or ropes. The site has both true *and* 'atypical' cupules on *vertical* cliff faces. The 'atypical' cupules at this site are labelled as such because they are larger than standard cupules, often are not hemispherical but rather oval shaped (in relation to either their vertical or horizontal axis) and frequently have their deepest point well below the



**Figure 4.** The Bluff Site, Southeastern Utah, U.S.A., looking N towards the sandstone cliffs. Photograph by Maarten van Hoek, July 2005.

geometrical centre of the depression. However, it has been confirmed by replication that this latter characteristic is related to the biomechanics of cupule making, especially on vertical surfaces (Bednarik 2008: 71 and Fig. 20). Moreover, the 'atypical' cupules at the Bluff Site clearly show rather crude peck marks, which indicates that they have definitely not been used to grind something.

The petroglyphs of the Bluff Site are found in an area of about 500 metres, which includes at least ten different and well-separated (groups of) rock art panels. One large section (labelled panel 4 by me) features many faint petroglyphs, mainly of the Basketmaker Anasazi Period (dating based on Castleton 1987: 209), including several anthropomorphs in the San Juan anthropomorphous style ascribed to the Basketmaker II period (dating based on Schaafsma 2001: 109), similar to impressive examples at Butler Wash, a well-known site on the nearby San Juan River. More importantly, panel 4 is dominated by a large number of anthropic depressions that are not mentioned in the only work known to me describing the site (Castleton 1987: 209). Besides panel 4, at least five other panels feature anthropic depressions. Panel 1 (the major panel, at the SE end of the complex, which is densely packed with figurative imagery) has a group of 12 very superficial, paired depressions, a horizontal row of possibly up to 14 true cupules very close to ground level, and a closely packed cluster of at least 35 small anthropic depressions capped by a groove. Panel 3C has at least two 'atypical' cupules, while panel 3E has three, possibly four 'atypical' cupules in a random position. Panel



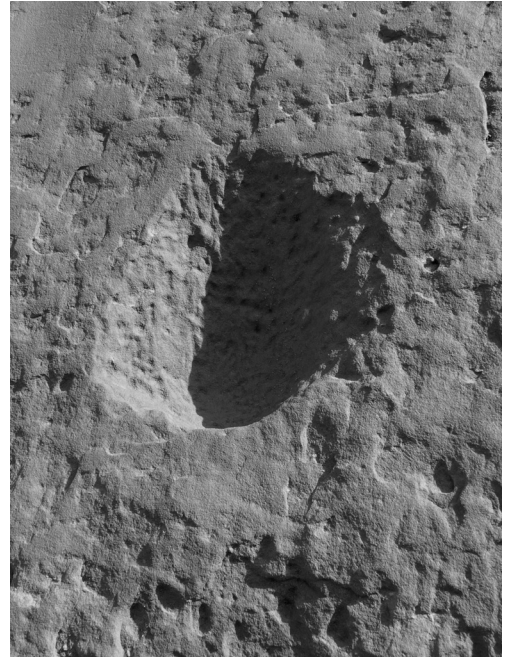
**Figure 5.** 'Atypical' cupules and other petroglyphs on Panel 4, the Bluff Site, Southeastern Utah, U.S.A.. The cupules at the bottom part are found on a more recently exposed part of the cliff, which is clearly less patinated. The largest cupule (near the centre) measures approximately 11 in width by 18 cm in height. Photograph by Duke Hayduk, Bluff, Utah, November 2005.

3F has at least one 'atypical' cupule. Panel 10, further west, has possibly seven 'atypical' cupules.

One of the many (tourist) attractions in the Bluff area is the rock art site of Butler Wash on the San Juan River. As access overland is very difficult, the site can only be reached by a guided boat trip. The site is well known for its imposing row of large petroglyphs depicting 'heroic' anthropomorphs that are characterised by drooping hands and feet and 'strange' extensions from the ears and heads. We also noticed recent Navajo petroglyphs and a small number of 'atypical' cupules. Also conspicuous at Butler Wash are many abraded grooves.

The day before our visit to Butler Wash, Vaughn Hadenfeldt of Bluff, knowing our interest in cupules, told us that there was another site near Bluff with cupules. This knowledge, combined with the experiences at Butler Wash, became the main reason for us to visit the Bluff Site.

To our surprise, many of the anthropic depressions at the Bluff Site turned out to be identical to the Butler Wash 'atypical' cupules. However, there were some major differences. First, there is the number of cupules. Butler



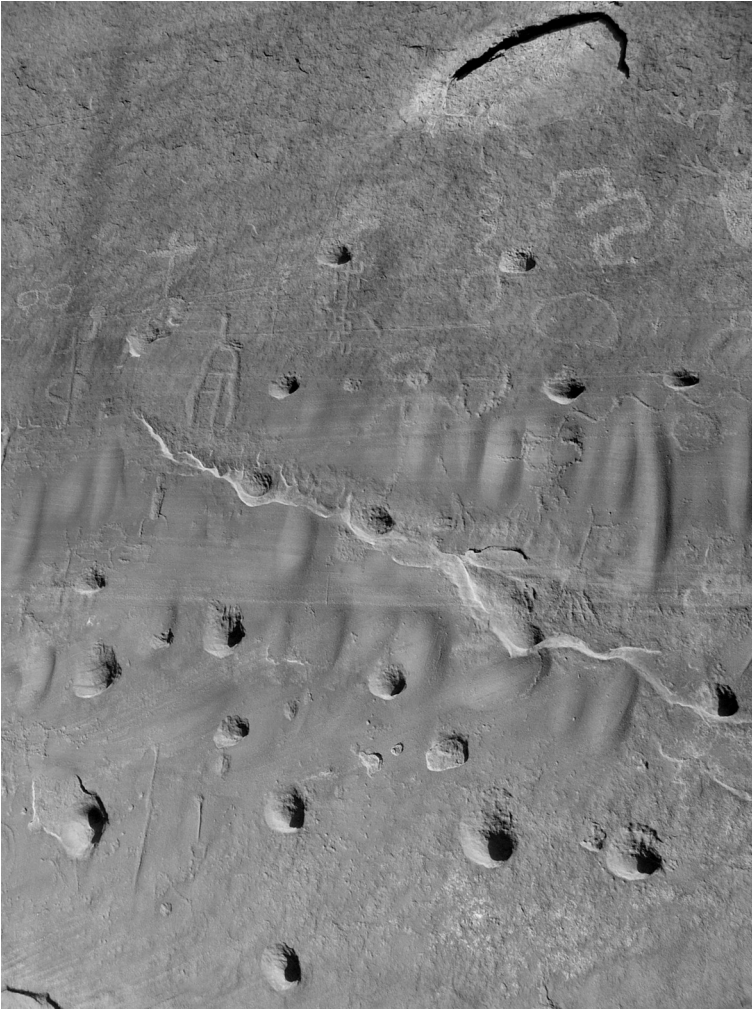
**Figure 6.** Close-up of one of the 'atypical' cupules on Panel 4, the Bluff Site, Southeastern Utah, U.S.A., showing crude peck marks. Photograph by Duke Hayduk, Bluff, Utah, November 2005.

Wash features altogether 12 'atypical' cupules, whereas the Bluff Site has more than 125 such cupules, the majority concentrated on panel 4, which has more than 110 examples. Several 'atypical' cupules at the centre of panel 4 are found on a lower area of the vertical cliff that apparently once was covered with talus debris; the surface has a less patinated appearance (Figure 5). It is possible that the talus debris, especially at the eastern part of panel 4, covers further cupules.

Second, the distribution of the cupules across the panel differs. At Butler Wash vertical, linear rows predominated, but at panel 4 of the Bluff Site, most of the 'atypical' cupules were distributed randomly across the rock surface. Although the 'atypical' cupules are similar in size and shape to the Butler Wash cupules, some are less deep and more superficially executed; especially the larger examples that, moreover, often clearly show deep peck marks (Figure 6). However, several examples do not show any or hardly any peck marks (Figures 7 and 8). It seems that they have been rubbed; possibly at a later stage.

#### *Associated features*

The ('atypical') cupules at the Bluff Site are



**Figure 7.** 'Atypical' cupules and other petroglyphs on Panel 4, the Bluff Site, Southeastern Utah, U.S.A.. A close-up of the cupule in the left-hand bottom corner of the photo can be seen in Figure 8. Photograph by Duke Hayduk, Bluff, Utah, October 2005.

found together with (but not associated with) anthropomorphs, zoomorphs, phytomorphs and geometric designs. However, panel 4 is not only exceptional for its concentration of 'atypical' cupules, but also noted for its large number of vertically orientated, abraded grooves. Unlike Butler Wash, where those abraded grooves are found in two major concentrations *outside* the petroglyph areas, the abraded grooves at panel 4 are found 'randomly' positioned among cupules and other petroglyphs, yet many arranged in horizontal groups (Figure 9). Although not so deep as the examples at Butler Wash, they are easily recognisable. Some are more than 30 cm in length and 10 cm wide. Like at Butler Wash, the 'atypical' cupules and abraded grooves have the same degree of patination as the surrounding natural rock surface and (most of) the figurative art.

There is another association of the panel 4 cupules that may be significant. A short distance west of it is a large cliff area that features dark coloured, vertical stripes caused by run-off water of a waterfall that pours down from the cliff during the

wet season. The large concentration of 'atypical' cupules may be explained by the location of the panel close to that temporary waterfall.

### *Meaning*

Since they are found at vertical cliff faces and clearly show large peck marks, it is certain that the 'atypical' cupules at the Bluff Site are anthropic and non-utilitarian. Importantly, because of their size and shape, these depressions differ from true cupules. Still, their execution must have been important, although, because no ethnographic records are available for this site, it can only be guessed at what their function and/or meaning has been. Yet, other rock art sites may offer a clue, especially when anthropic depressions are found at *specific* spots on figurative imagery. For instance, another rock art site in south-eastern Utah features a zoomorph with five anthropic depressions, obviously executed at a much later time, specifically at the head, heart area and extremities, thus possibly acquiring power from the animal image (Malotki and Weaver 2000: 72).

However, the 'random' and unrelated positions of the Bluff Site 'atypical' cupules indicate that other rationales must have been the cause for these cupules. Notably the presence of the large number of abraded grooves might give a clue. Especially at panel 4 of the Bluff Site, there clearly is an *excess* of such polished depressions. In contrast, these abraded grooves are lacking at the major panel of the Bluff Site, located only 250 m to the SE, which is far more densely engraved with figurative imagery. It appears that the abraded grooves were not used to sharpen the

instruments with which the petroglyphs on the same panel were made (although this can never be ruled out). This seems to be confirmed by the fact that many other major petroglyph panels on the Colorado Plateau (and beyond) seem to lack these abraded grooves (or they have not been reported at those sites, like there is no record known to me of the abraded grooves at Butler Wash). Also, there would exist more abraded grooves at other sites where these features do occur. This generally is not the case. For instance, at the Potash Road rock art complex near Moab, Utah, I noticed only two true cupules and one simple abraded groove close together on one of the huge vertical faces that are full with figurative art.

Even though the reason to execute 'atypical' cupules and abraded grooves at the Bluff Site will remain obscure, it is possible and even likely that the execution had more to do with the site and/or the rock itself, than with the figurative rock art. This seems to be confirmed by rituals among the Zuni Indians, who still live in western New



Mexico, U.S.A. Zuni women and men wishing to have a female child used to visit a 'Mother Rock' where pregnant women removed grains of sandstone for an offering to be left at the site (Stevenson 1904: 294, Pl. 12; quoted in Cole 1990: 41).

An illustration of Mother Rock shows a surface that is densely pockmarked with abstract imagery, including small pits [cupules], larger holes or niches, and grooves. Vulva-like symbols have been formed by using pits and incised lines.

Several distant rock art sites may offer similar explanations in which the depression is not the intended product of the action. The first three examples are ethnographically supported. A large boulder near Nantaguna springs in the Northern Territory of Australia bears in a recess around sixteen horizontal cupules. They are the result of a ritual conducted to cause a specific bird to lay more eggs. This is accomplished through the mineral powder rising into the air as the cupules are pounded (Flood 2006: 244; Bednarik 2008: 72). A similar ritual involved the collection of the 'fertilising' dust created by Pomo women pounding cupules on specific boulders in California (Bednarik 2008: 73). Cupules on a



**Figure 8.** Close-up of one of the 'atypical' cupules on Panel 4, the Bluff Site, Southeastern Utah, U.S.A., showing the smooth (rubbed?) interior. Photograph by Duke Hayduk, Bluff, Utah, October 2005.



**Figure 9.** Horizontal rows of vertically orientated abraded grooves and other marks on a vertical sandstone cliff at Panel 4, the Bluff Site, Southeastern Utah, U.S.A.. Photograph by Duke Hayduk, Bluff, Utah, October 2005.

lithophone (rock gong) at Pola Bhata in India were witnessed by Robert Bednarik to be used and explained to him in 2004 (Bednarik 2008: 73–4).

Besides a relatively small number of cupules, many of the temples in Egypt, like Medinet Habu, Luxor and Karnak, feature thousands and thousands of abraded grooves, identical to those in Utah. Several examples clearly superimpose the art of the ancient Egyptians and in some cases even destroy petroglyphs added by later peoples onto the walls of these temples. Although these abraded grooves may have been produced as a sort of ‘gestural art’ to record a visit to a site in analogy with ethnographically recorded instances in Australia (Flood 2006: 240–1), these abraded grooves most probably have also been made to derive the power of these ancient temples.

Similar abraded grooves occur elsewhere in Africa and for instance have been reported by Simonis et al. (1998) from at least three of the five so-called Niola Doa petroglyph panels in the Ennedi plateau in eastern Chad (1370 km SW of Luxor). At least seven such polished grooves can be seen in their illustration of panel 3 (1998: Figs 2 and 3), while another seven examples appear on panel 2 illustrated by Simonis et al. (1994: Fig. 4). Coulson and Campbell illustrate Panel 1 at Niola Doa and this panel features at least four abraded grooves. Importantly, Coulson and Campbell argue that ‘at a later period, vertical grooves were ground between the figures; such grooves appear throughout Africa and even on Egyptian temple walls where women rub them to increase their fertility (Coulson and Campbell 2001: Fig. 15). All examples at Niola Doa have been executed in a vertical position, like most of the Egyptian and Utah examples. Perhaps the resulting stone powder from the Egyptian temple walls was taken home, or even occasionally swallowed.

On the north coast of Rapa Nui (Easter Island) is a low eminence of irregular lava called ‘Ava ‘o Kiri. On this outcrop are three petroglyph panels with altogether six large petroglyphs: a fish-within-fish; a tail-of-fish (not an unfinished fish) and a complete ‘tuna fish’ associated with two ‘fish-hooks’; all executed in outline. There are also some scattered, possibly cultural cupules, as well as a few faint and indeterminate markings. Importantly, at the foot of the knoll and out of sight of the fish petroglyphs is a horizontal outcrop. It is covered with some cupules and more than 30 flat and oblong depressions that also occur at other sites at Rapa Nui and that are referred to by Lee as tool sharpening depressions (1992: Fig. 4.29). Those tools could have been adzes. Despite the fact that petroglyphs of ‘adzes’ only appear at two sites on Rapa Nui, Lee emphasises the importance of the adze as a tool, but also states that the object could also have had religious and ceremonial connotations as a sacred symbol of the forest god, Tane (Lee 1992: 115).

The execution of an extremely small number of figurative images on top of the eminence does not justify the presence

of so many oblong depressions as it is very unlikely that these adzes were used to actually produce those petroglyphs. Therefore, I suggested (Van Hoek 2000: 14–6) that the lower outcrop was specially selected by the islanders to sharpen specific tools like the aforementioned adzes or just rub the stone with some kind of object because of the importance of the place, also acknowledged by the execution of a special sequence of fish engravings. Perhaps it was thought that spirits supposed to reside in the rock could be appeased (Lee 1992: 124) or supernatural potency (called *mana* in the Polynesian culture) derived by sharpening their tools or rubbing the rock surface or by executing cupules at specific spots. The people of Rapa Nui possibly thought that, in general, touching the stone at ‘Ava ‘o Kiri and other sites on the island in a specific way would imbue their tools and/or themselves with supernatural potency. Could this idea also explain the execution of ‘atypical’ cupules and abraded grooves at the Bluff Site? Might the non-visual explain many of the ‘atypical’ cupules and abraded grooves?

Interestingly, Ouzman postulated a similar idea (2001: 245). He describes some animal petroglyphs from southern Africa that were carefully and repeatedly rubbed with the fingers or pieces of hide *at specific spots*. Ouzman argues that ‘rubbing them [those spots] allowed people to access the potency they embodied’ (ibid. 247). Although in the first instance the manufacturing of cupules does not actually represent instances of rubbing (though tool sharpening activities do), their execution may still have had the same purpose. Ouzman notably argues that ‘Such cutting and hammering of the rock also functioned more generally as a means of piercing the rock so that potency could flow from the Spirit World into the Ordinary World’ (ibid. 248) and into the person or even the group that manufactured those openings. This concept would explain the random placement of such cupules on the rock. If the purpose of those rituals were to release potency from the Spirit World, it would not really matter where those depressions were placed.

Ouzman offers a further explanation. Apart from possibly representing passages between the ‘Spirit World’ and the ‘Ordinary World’, the execution of those cupules could fulfil the desire to *possess* pieces of such potent places (ibid. 248). When rock art panels have been flaked, this could point to the desire to possess a part of a potent site (ibid. 250).

But the execution of cupules hardly ever produces flakes suitable to take away. Therefore, to overcome this problem, another method might have been invented. The manufacturing of cupules often produces a fine stone powder that can easily be swallowed by a person without causing harm. It is known that animals, like elephants and giraffes, and even groups of people and/or individuals occasionally consume certain types of clay during severe shortages of food (Callahan 2000) Consuming stone powder from certain rock surfaces has also been reported from other areas. It is suggested that the deliberately executed holes at the aforementioned zoomorph in south-eastern Utah may have been motivated by the idea of utilising the power inherent

in the animal fragments to obtain favourable outcomes for hunting or ritual-related activities similar to those depicted on the rock art panel. In fact, rock flour from the petroglyphs may actually have been ingested by the ritual participants, an act referred to as geophagy, that is, the ‘consumption of earth’ (Malotki and Weaver 2000: 72). Also in Europe, cupule-powder is said to have been used as or in medicine (Evers 1996: 83; Schwegler 1992: 29; see also Callahan 2000 for a full report). In this respect it is worth mentioning that Ouzman (2001: 251) tentatively and carefully suggests that the ingestion of rock powder might also have been a possible way for selected people in southern Africa to inherit the potency of a rock or rock art site.

Thus the execution of (‘atypical’) cupules and abraded grooves at certain panels at the Bluff Site (and elsewhere in the world) may have been intended to create visible passages to the spirit world and possibly simultaneously to produce a powder that could be ingested (or flakes that could be taken) in order to absorb metaphorically *and* literally the potency of the place. Also the execution itself may have had ritual significance.

It may therefore be concluded that the majority of the cupules and abraded grooves at the Bluff Site that are found together with figurative petroglyphs probably express an intimate relation with the rock and/or the place where they are found rather than with the figurative imagery itself. Such rock, site or place-related cupules and abraded grooves may represent a means of contacting and accessing the spiritual world hidden ‘behind’ the rock surface. An additional reason to produce cupules and abraded grooves might have been the desire to acquire (or even ingest) powder or pieces of those sacred places, possibly also as mnemonic devices. A mnemonic device is a memory aid. For instance, ethnographic records confirm that abraded grooves at the Yiwarlarlay rock shelter in the Northern Territory of Australia were cut into the rock to record that a specific person visited the site, or as Flood states ‘That mark means I was here’ (2006: 240). Similarly, items (like stone flakes from a specific site like the Berlin Wall) could be taken home to remind the visitor that, by looking at the device, he or she could say ‘I once was there’. In this way tourists have adversely damaged the megaliths of Stonehenge by chipping off stone flakes probably as mnemonic devices.

#### Acknowledgments

First of all I would like to thank Prof. Roy Querejazu Lewis, who was so kind to read, in my absence, this essay (originally submitted as two separate, more comprehensive papers) to the audience at the International Cupule Conference, held in Cochabamba, Bolivia, in July 2007. I also appreciate the ever-constructive comments offered by Robert G. Bednarik after having read the draft text of the paper, but I note that he is not responsible for any shortcomings. I am also most grateful to Duke and Sarah Hayduk of Bluff, Utah, for taking a large number of extra photographs of the Bluff Site for me. I am also indebted to Vaughn Hadenfeldt of Bluff, for informing me about the cupules at the Bluff Site. Last but not least, I thank my wife Elles for her assistance during all the field trips in Utah and Peru.

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