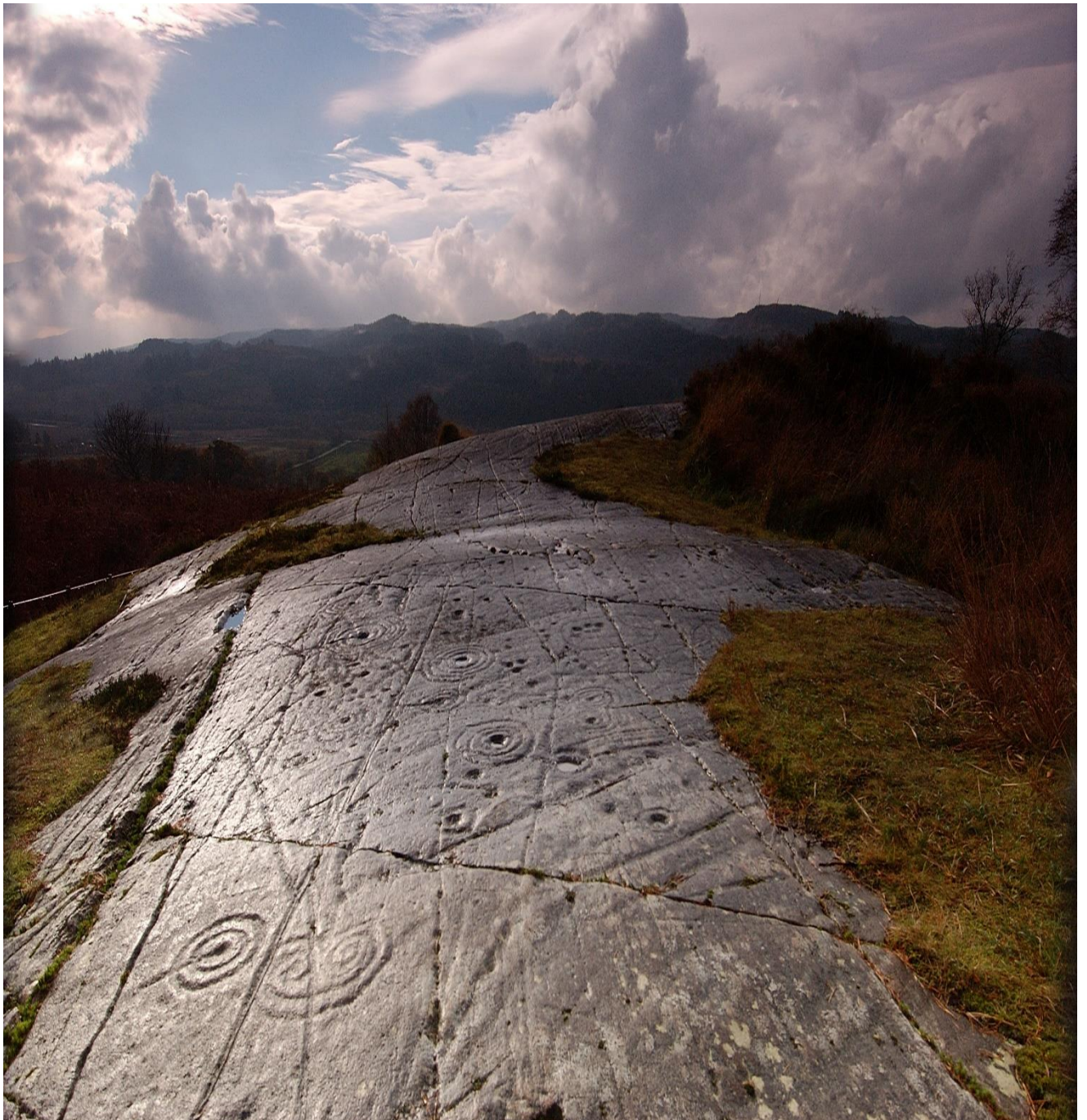


The Water Symbolism That is Filling Up the Cupules and Flowing Through the Cup and Ring Marks

By Veronica Wikman
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Cup and ring marks at Achnabreck, Scotland. Photo: historicensevironment.scot

Abstract

This paper explores the possibility that the *cupule* petroglyph originated as a symbol of water. This assumption, and the observation that the *cup and ring mark* type of rock art found in Scotland bears a strong resemblance to shapes and patterns that can be observed in water, leads to an interpretation of these petroglyphs as a symbolic translation of water. Based on evidence of Near Eastern influence in Britain during the Bronze Age and the probability that this influence also reached Scotland, it is assumed that the cup and ring marks also became infused with mythological beliefs associated with sympathetic and apotropaic magic aimed to ensure and control rainfall and fertility and to safeguard women during pregnancy and childbirth.

Cupules

Cupules are circular, hemispherical depressions that have been pecked into horizontal, vertical and sloping rock surfaces. They are found all over the world, except Antarctica, and are known to have been produced since the Lower Palaeolithic. Bednarik points out that “cupules are said to appear very commonly in Neolithic and Bronze Age contexts, but also in those of Iron Age antiquity, and in Europe they were still frequently made in the Middle Ages. In some parts of the world, notably in Australia, the production of cupules only ceased in the 20th century”. (Bednarik, Cupules). Cupules are probably the most common type of rock art and exist both as single petroglyphs and in clusters and are sometimes incorporated with other petroglyphs into figurative or abstract motifs.



Cupule in Auditorium Cave, Bhimbetka (India)
Photo: www.visual-arts-cork.com

Many interpretations and hypotheses have been made to explain their possible use and significance, for example linking them to the imagined activity of elves or interpreting them as vessels for collecting magical water for healing, holders for seed offerings, symbols for celestial bodies, among many others.

In this paper I will explore the possibility that cupules created in the Palaeolithic were used as symbols for water and that this symbolic meaning travelled into Neolithic and Bronze Age Scotland, influencing the type of prehistoric rock art - the cup and ring marks - found there. Cupules are also often referred to as “cup marks” and “cups”, and I will use those terms when discussing the rock art found in Scotland, in line with the terminology used by Rock Art Scotland.

It is fun to speculate and I am certainly not going to deprive myself of the opportunity here (!), but equally I don't wish to stray too far off the realms of credibility, so I have endeavoured to find reasonable explanations to back up what I hope will add a piece to this ongoing puzzle.

Since cupules have been created ever since the dawn of our existence as a species and exist in every geographic location we have spread to, it would make sense to imagine that they were initially created for something that is essential and ubiquitous to us all. Something that was deemed so important that the tradition of producing them was passed on through future generations. A common denominator that unites us over space and time.

If we peel away all the layers of civilisation and our accumulated mountains of material culture, what are the absolute fundamentals we need in order to survive? We need food, we need a safe place to sleep, we need protection against a climate that is too cold or too hot, and finally, and above all, we need *water*. As we all know, every living organism on our planet needs water. No water, no plants. No plants for us to eat and of course no animals for us to hunt. The need for water is such a basic requirement that it is easy to overlook, but we do live or die depending on our access to it and our ability to manage the lethal risks it can pose.

In the absence of scientific knowledge, we can probably assume that our early ancestors would have bestowed water in all its varying forms with magical and anthropomorphic characteristics. They might have reasoned something along these lines:

Water is the starting point of life. A baby is born out of water. This mysterious water comes from an invisible place inside the woman (just before the baby arrives) just like the water from a spring that issues forth from a hidden place in the ground.

The fact that water is the starting point of life, can easily be observed every spring in the nearest pool by looking at how frogs are created by a special kind of water, known as *frog water*. First the frog water is grey and slimy, but eventually it turns into living frogs. All plants, animals and humans need water to stay alive.

But water can also be the end point of life.

Water will take our lives if it wants to.

Flooding can destroy our homes and everything in it.

Water can "steal" valuable things that are dropped in it.

It has many "moods". It can be anything from perfectly still, peaceful and tranquil to roaring and raging with massive, towering waves.

Water can appear in many shapes and forms with different characteristics: a trickling stream, a wide river, a thundering waterfall, a still lake, a mysterious spring, a roaring sea, gentle rain, heavy rain, mist, snow, ice, etc.

Water can float in the air and hide things it doesn't want us to see.

It can be salty and it can be sweet.

It comes out of our eyes when we are very sad or very happy.

It can allow people to float in it, swim in it or travel on it, when it is in the right mood.

It falls from the sky when the clouds are crying.

When it is very cold the water in the lake turns to ice. Now you can walk on it. But, it can suddenly change its mood and turn back into water and grab the person who is walking on it.

The sun can turn ice into water.

Fire can also turn ice into water.

Water can kill fire.

Water can not kill the sun, but it can make it invisible.
It can make mesmerising patterns and make them glide over its own skin.
It can make pits in the ground.
It can make interesting patterns in the sand.
It brings us food.
It brings us gifts (washed up shells, pebbles, driftwood).

Naturally, the capricious and volatile nature of such an immensely powerful and magical entity would need to be placated and cajoled, and if possible, controlled. Perhaps it is against this background that we might find the explanation for the cup and ring marks, that are found in Scotland and other locations along the European Atlantic coast? More on that later.

But let's start with the single cup mark, the cupule. Would it be possible to interpret it as a generic symbol for water? If so, how could it have happened? Perhaps in the following way:

Our early ancestors notice the fact that a pit in the ground *always* fills with water *whenever* it rains. In dry weather, when the water in the pit has evaporated, they will notice that the pit is *empty*, i.e. *devoid of water*. On seeing the empty pit, they will be reminded of the water that is no longer there and perhaps contemplate its absence. *Why is the water no longer there? Where has the water gone?* They might also have reflected on the following: Who can make a pit in the ground? Humans can. Many animals can. And so can a single drop of water that falls into sand. While it's easy to observe and understand how humans and animals can dig a pit by using their limbs and muscles, the reasons why this can also be achieved by water would have been an intriguing mystery for the prehistoric mind.

The above observations could have prompted our early ancestors to make a cognitive association between pit and water. Now the pit has become the symbol for water. The next step would involve "writing" the "word" "water" on a rock surface, i.e. pecking out the shape of a pit into a rock, perhaps in order to communicate a desire for rainfall to the supernatural entity believed to be in charge of supplying it.

Depending on the type of rock, pecking out the shape of a cupule can take up to two hours. A much quicker way of creating this symbol would be to paint it. Translated into a painted symbol, a cupule would look like a round dot. There would be no point in painting a round dot or anything else on a rock surface outside, as the pigment would soon disappear, so if we wanted to create this symbol outdoors, we would have to pick up a rounded pebble and start pecking. But it doesn't rain inside a cave, and among the Palaeolithic hand prints and animal paintings found in the caves of El Castillo and La Pasiega in northern Spain are designs made up of several adjacent rows of painted red dots that form a ribbon in the shape of a line or forming a ring. (donsmaps.com)

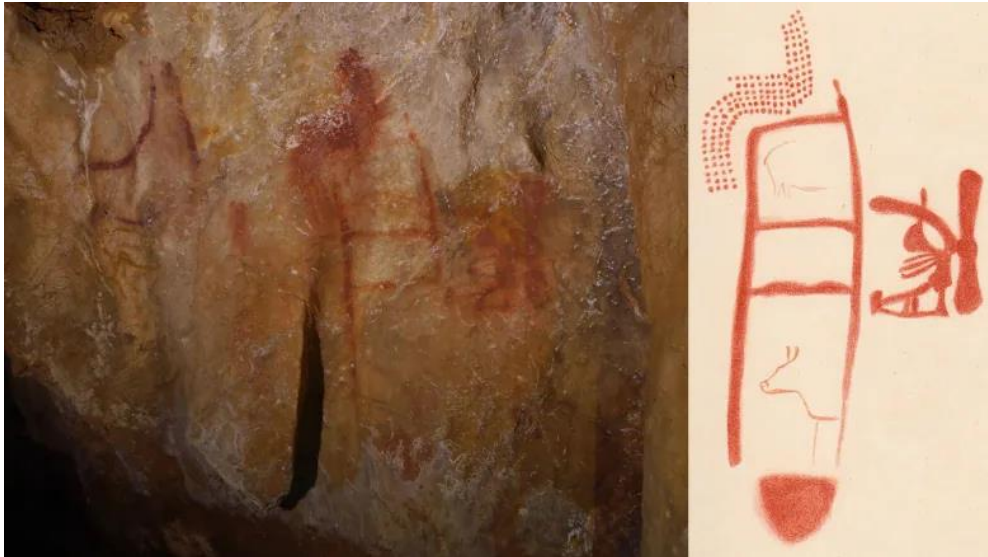


Painted red dots in El Castillo (Spain)
Photo: illustrationart.blogspot.com

What is the meaning of them? Could they be painted cupules? Let's entertain this idea and let's assume that a painted red dot means "water". In that case, it would be possible to infer that a long line of red dots means:

water+water+water+water+water+water+water= river or waterfall

In the La Pasiega cave is an image that consists of a dotted 'river/waterfall' with a motif that looks like a ladder (a shape known as a scalariform). The 'ladder' was painted 64,000 years ago, according to uranium-thorium dating, and was consequently the work of Neanderthals. (Los Angeles Times). Inside it we can see the outlines of two mammals. This motif is called La Trampa (the trap) and it's easy to see why. Is this a picture of a bison and a deer caught in a trap in a river? The fact that only a part of the animal has been painted would perhaps fit in with this interpretation. The explanation for the invisible parts would then be that they are hidden (submerged) by the water.



La Trampa motif, La Pasiiega (Spain)

Photo: www.cbc.ca/news/science/neanderthal-art-1.4378719

The dots that make up the ‘river/waterfall’ are believed to have been painted around 19,000 BCE during the Solutrean period and the animals at a later date, around 14,000 BCE during the Magdalenian period.

Regardless of the fact that the three individual elements (‘river’, ‘trap’, ‘animals’) that make up the possible hunting scene have been created at different times, and could have had a different meaning, it still seems to suggest that at the time of the addition of the animals, the dots that curve around the top of the ‘trap’ were interpreted as ‘river’, or, as proposed by Tom Fowler, ‘waterfall’.

But the downside of painting long rows of dots to write “river” is that it is time consuming. It takes less time to paint a line instead. But while that works well on the large canvas of a cave wall, it is an impractical symbol to use on the small surface of for example a pendant. So what’s the best solution? It is to simply roll up the river! Or in other words, to paint a spiral. (An analogy could be made with the practical reasons for writing “9” rather than “1+1+1+1+1+1+1+1+1” or “nine”.) Could this be the origin of the spiral symbol? I have no idea, but I quite like it!

One of the oldest artefacts found with a spiral motif is a flat piece of mammoth ivory (approx. 13 x 8 cm) that is decorated with spirals on one side and snakes on the other. The spirals are made up of small dots, whereas the snakes are incised with lines. The artefact has got a hole in the centre, indicating it could have been worn as a pendant. The hole forms the starting point of a large spiral that covers most of the area on the spiral side. Does the position of the hole, in relation to the spiral, carry a significance that goes beyond mere aesthetic preference? Does it mean “start of river”, i.e. the spring or lake that is the source of a river? This artefact was found at Ma’lta, Siberia and is dated to the Upper Palaeolithic. Was it used as an amulet to offer protection from the dangers of the river and the snakes that lived near it? (Bednarik, Pleistocene palaeoart of Asia, 2013)



Mammoth ivory plaque, Ma'ita, Siberia
Dated to between 23,000 – 19,000 BC
Photo: www.hermitage.museum.org/

Let's move on through the spatial-temporal continuum to the river valley civilisation of prehistoric Egypt. Here we can find more examples of the spiral symbol used in connection with water. Ceramic pots produced by the Naqada II culture for transporting water (presumably from the Nile river?) were typically decorated with spirals and the wavy lines of the Egyptian water symbol. Interestingly, there is a pot that is decorated, in a similar vein to the Siberian ivory artefact described above, with spirals and what looks like swimming snakes. Was the point of decorating the pot in this way, the same as that of the Siberian "amulet"? (Art 198 - History of World Ceramics; An Egyptian painted pottery jar, Pre-dynastic period Naqada II (Antiquities from the Toledo Museum of Art, Christie's online auction 14572, lot 1))

Returning to the cupules that are pecked into the rock surfaces and their possible links to water. In this context it is interesting to consider the biblical story "Water from the rock" where Moses manages to sort out a water shortage in the desert by striking a rock with a staff.

In Judaism this rock is known as Miriam's well:

"Moses called on God for help and God commanded him to strike a particular rock with his staff. The rock split open and water gushed forth. This rock came to be known as "Miriam's well"... For forty years this rock travelled with the people and served them faithfully, providing water for them and their animals..." (Kesselman)

According to the Midrash the "well" was actually a rock shaped like a sieve. It would roll with them and throughout their travels.

"The well, according to the Rabbis, was one of the things created on the eve of the Sabbath at twilight (M Avot 5:6); they depict it as a wondrous well that flowed from itself, like a rock full of holes (T Sukkah 3:11)."

It is interesting to note that the rock (which functioned as a well) was shaped like a sieve (bowl shaped?) was full of holes (cupules?) and would follow them on their travels (a

portable rock?). Rocks, of portable size, that are covered in cupules have been found. Perhaps they were used in a rain ritual?

Cup and ring marks

But let's move on to the type of rock art that can be seen in Scotland (and other locations along the west European Atlantic seaboard) - the enigmatic cup and ring marks. These are believed to have been created during the Neolithic and the Bronze Age and include a variety of simple and more complex motifs: simple rings, cup and rings, partial rings, arcs, spirals, 'keyholes', radial lines, wavy lines, straight lines, etc. An overview of the shapes, the rock art typology, can be found on the website "Scotland's Rock Art Project".

These motifs often include the cupule, or cup/cup mark as it is also known. Sometimes the cup mark is on its own, sometimes several cup marks are clustered together and at other times it occupies the centre of a design that looks intuitively like the image of a raindrop falling into a pool of still water, creating spreading rings around it. In fact, many of the petroglyph motifs look like visual representations of the shapes and patterns that are created by raindrops as they fall into a body of water, or by the shapes that can be observed in water that is flowing. In other words, shapes and patterns that can be explained by physical forces governing water, e.g. surface tension, fluid dynamics and viscosity.

The cup and ring mark often includes a radial line (also known as a radial gutter) that is leading out from the central cup and across the concentric rings that surround it.



Cup and ring mark with radial line
Glasserton, Dumfries and Galloway (Scotland)
Photo: www.geograph.org.uk/photo/3767274

However, this is a feature that can't be seen when observing the effect of raindrops falling into a pool of still water. *Or can it?*

Recently, I made an interesting observation when watching a video I had recorded (on my smartphone) of gentle rain falling into a pool of still water. When I was watching the video at normal speed, no radial line was visible, *but it was* when I scrolled through the video slowly, and *it was also visible* in some still photos that I took from the video.



Radial line formed in water
Photo: Veronica Wikman (author)

Also, I could see a spiral shape that was invisible when I watched the video running at normal speed. *What is going on?*

Perhaps it can be explained like this: the radial line and the spiral have such brief “lives” that the human brain does not have time to fully process them when we are watching them in real time. Yet the brain has registered and stored them somewhere, making it possible for them to emerge in a dream. A dream that can later be recalled and serve as creative inspiration? Perhaps that is how they made their way from the prehistoric mind and onto the rock? Something to do with subliminal perception?

However, there is an alternative, and probably more plausible explanation. *What if the water itself is slowed down?* This would happen naturally in muddy

water, which has a higher viscosity than clear water, and consequently would be slower to react to the impact of falling raindrops.

In addition to the cup marks and cup and rings (with and without the radial line), there is also a type of motif known as a keyhole shape. These motifs can't be explained by raindrops breaking the surface tension of a tranquil pool, but water can still be used to account for them. Here it is a case of what will happen if we combine water flow with a cylindrical object, standing in its way. When the water flow comes into contact with the cylinder (that is standing upright, perpendicular to the water) it will initially follow its shape, before creating a wake trailing behind it. Now we have a keyhole (see Wang, Figure 1). Variations on the width between the "legs" of the keyhole can be explained by the flow rate that is creating the wake.

This is something that the people of Bronze Age Scotland could have watched all day and every day, as their homes were built on artificial islands, crannogs, constructed on wooden piles (i.e. cylindrical objects standing in a perpendicular position to the water). So, plenty of opportunities to study the phenomenon described above. And maybe they had reason to? As is the case with bridges built on piers, crannogs might have been subject to similar destabilisation problems due to the impact of the water flow around the piles.

In the absence of scientific knowledge, it seems likely that the people of prehistoric Scotland would have reached for magic and superstition to explain natural phenomena and to protect themselves against the problems and dangers they can pose. Perhaps the keyhole motifs were created in order to be used in a ritual to persuade a water deity to leave the crannogs alone?

An interesting motif that appears among the petroglyphs at the Achnabreck site in Scotland is the double-horned spiral.



Double-horned spiral, Achnabreck, Argyll (Scotland)
Photo: www.pinterest.co.uk/pin/148126275227783601/

This shape can be observed and explained by a phenomenon in fluid dynamics called a Kármán vortex street (see the animation on the Wikipedia page describing it). Intriguingly, the double-horned spiral also appear on one of Scotland's famous carved stone balls, the beautiful Towie ball, dated to around 3,000 BC.



The Towie Ball, National Museums of Scotland, Edinburgh (Scotland)
Photo: www.nms.ac.uk/towieball

Does this mean that a link between the Towie ball and the Achnabreck site can be inferred?
The following comparison suggests it is a possibility:

In Scandinavian rock art, the ship motif is very common. Ships of this style, incorporated into a design with other figurative elements, is also found on bronze razors from the Bronze Age that were found in Denmark. The Danish archaeologist Fleming Kaul has suggested that the imagery on these razors tells the story, the myth, behind ship motifs found at the rock art sites, and that these sites should be understood as venues where ceremonies based on the myth were performed.



Figurative rock art, Bronze Age (Sweden)
Photo: hallristning.se/faltrapporter/falt_2014.html



Bronze razor, Bronze Age (Denmark)

Photo: mimirsbrunnr.com/2020/02/19/symbolism-of-the-nordic-bronze-age-razors/

In addition to protecting their homes from the destabilising effects of a capricious water deity living below their crannogs, there would have been a myriad of other reasons to keep on good terms with the divine forces that were in control of water. Not least the power that was in control of rainfall.

The cup and ring marks are thought to have been made during the Neolithic and Bronze Age. This coincides with the introduction of agriculture and its earliest development in Britain. To this day, any type of farming is heavily dependent on crops and pastures receiving the right amount of rainfall at the right time. How can this be achieved? Clearly, *we* know that no amount of petroglyph creation or time spent on rituals and ceremonies is going to make any difference, but the early farmers in the Neolithic and Bronze Age did not know this. For them, anything deemed to have any hope of controlling rainfall would have been regarded as a highly important and worthwhile activity, no matter how labour intensive. Perhaps the cup and ring mark motifs with their visual resemblance to the water features discussed above, were created for this purpose?

Creating artefacts and images that resemble something you hope to get or that can be associated with something you wish to happen, is an important part of what is known as sympathetic magic:

“**Sympathetic magic**, also known as **imitative magic**, is a type of magic based on imitation or correspondence.

...Imitation involves using effigies, fetishes or poppets to affect the environment of people, or occasionally people themselves. Voodoo dolls are an example of fetishes used in this way.

...Correspondence is based on the idea that one can influence something based on its relationship or resemblance to another thing. Many popular beliefs regarding properties of plants, fruits and vegetables have evolved in the folk-medicine of different societies owing to sympathetic magic. This include beliefs that certain herbs with yellow sap can cure jaundice, that walnuts could strengthen the brain because of the nuts' resemblance to brain, that red beet-juice is good for the blood, that phallic-shaped roots will cure male impotence, etc.” (Wikipedia, Sympathetic magic)

Sympathetic magic rituals were commonly used by prehistoric people in the hope of achieving a certain result. For example, it is believed that figurines resembling pregnant women were created to protect women during pregnancy and childbirth.

The ancient Egyptians, for example, believed in a concept known as *heka*. This was a magic, animating force that was used by gods and humans in order to achieve a desired result. It was

believed to permeate life and to pervade the whole universe. The Egyptians thought it was possible to steer heka in the right direction so that the desired outcome would be realised, by carrying out actions, uttering words (spells) and by creating objects and images in the likeness of the thing one aspired to get or wanted to happen.

As well as being a magical force, heka was also personified into a god (Heka).

“In origin stories, the creator god, Atum, uses heka to make the world. As a result, every aspect of the universe is made of heka. Because of this creative act, heka made deities, humans, land, water, animals, plants – everything. It has been likened to an all pervading coercive power – comparative to the laws of nature in its coerciveness and all pervadingness – by which in the beginning the world was made, by which it is daily maintained and by which mankind is ruled”. (Anthony)

Did the people of Bronze Age Scotland believe that carrying out “daily maintenance” rituals was required in order to secure the status quo of the rivers, lochs, waterfalls and the sea?

Were the carefully designed and created cup and ring mark motifs, with their obvious similarity to shapes and patterns that can be observed in water, made as images to be used in sympathetic and apotropaic magic rituals in order to control rainfall?

Did the cultural shock waves produced by the remarkable and highly influential civilisation of Ancient Egypt reach as far as Scotland during the Bronze Age?

There are things that point in that direction. Cup and ring mark motifs that look similar to those found in Scotland (and along the Iberian west coast and in Brittany) have been found on Sardinia. Also, decorations on an Egyptian pot from the Naqada II tradition, believed to have been used for carrying water, are reminiscent of the spiral motifs found at rock art sites in Scotland.

Intriguingly, a female clay figurine from ancient Egypt has been decorated with a particular design, called a rosette, that is also found at rock art sites in Galloway and in Argyll in Scotland.



Rosette motifs, Ormaig (Scotland)

Photo: www.ancient-scotland.co.uk/site/126



Clay figurine (E.6895) from ancient Egypt with rosette motif on her stomach (Garstang Museum of Archaeology) Photo: garstangmuseum.wordpress.com/2018/08/29/object-in-focus-a-female-figurine-from-ancient-egypt/

This figurine might, as Redpath suggests, have been used in the practice of *heka*:

“Papyri discovered in the Mut Precinct of the Karnak Temple Complex show that these figurines may have been used in the practice of magic (or heka) in ancient Egypt. The direct quote from the papyrus, which can be found in Leiden, describes a spell for curing stomach ache: “Words spoken over a female figure of clay. As for any of the suffering in the belly, the affliction shall go down from him into the female figure of Isis until he is healthy”. (Redpath)

What is the meaning of the “puncture” lines and circles on this figurine? I’m going to indulge myself here and suggest the following (with no “evidence” whatsoever!):

Let’s assume that they are an attribute that signifies *movement*. In that case, the horizontal puncture lines across the figurine’s buttocks and across the front of the figurine between her hips, signify the up-down movement of bending over/sitting (or standing) up straight. Similarly, the horizontal puncture line along the hem of her veil (?) illustrates that the veil can be raised/lowered. The vertical puncture lines along her hair indicates perhaps the movement of the hair during dancing or that hair can be long/short (hair growth can be said to have a vertical “movement”, albeit very slow!). The three circular patterns, one on her stomach and two on her lower back, i.e. the *rosettes*, indicate a rotating movement (as in belly-dancing perhaps?) around the axis of the central cup mark. Perhaps the figurine is quietly acting out a ritual (on behalf of her barren (?) owner), in order to attract the attention of heka, so that the woman who owns the helpful figurine will fall pregnant?



The back of the figurine with lines of puncture marks and two rosettes.
Photo: garstangmuseum.wordpress.com/2018/08/29/object-in-focus-a-female-figurine-from-ancient-egypt/

Another example that suggests a connection with ancient Egypt is the spacer plate necklace that was found in Inchmarnock, Argyll and Bute (west coast of Scotland). This stunning piece of jewellery, made of jet beads, is:

“a form of Early Bronze Age female jewellery that appeared as a deliberate skeumorph of gold lunulae in the 22nd century BC”. (ScARF)



Spacer plate necklace found at Inchmarnock (Scotland)
Photo: www.butemuseum.org.uk/project/spacer-plate-necklace/

So what is a skeumorph? According to the dictionary it is:

“An object or feature which imitates the design of a similar artefact made from another material.” (Lexico.com)

In this case, it imitates a gold lunula:



Gold lunula, found in Lanarkshire, Scotland.

Dated to 2300 – 2000 BC

Photo: blog.nms.ac.uk/2018/09/06/douglasnugget/

And the gold lunula, in turn, was possibly (probably?) inspired by the iconic broad collar that was worn around the neck by gods as well as women and men in ancient Egypt - the usekh (or wesekh):



Usekh of Senebtisi (Ancient Egypt)

Photo: www.metmuseum.org/art/collection/search/544168

The transport of these cultural ideas could have been arranged by the seafaring ancient Phoenicians who sailed to Cornwall in search of tin. It is quite possible that they even went as far as Scotland and Ireland, as suggested by place name research that suggest a Phoenician

origin of some Scottish place names found along the western coast and in the Hebrides.
(Green)

But there is another very intriguing possibility, which might well answer the question of for what purpose the petroglyphs were made.

To find the answer I think we should look to another part of the Ancient Near East and to the similar tradition of identifying everything, not just organic life like plants and animals, but also physical objects and material substances, e.g. rocks, water and earth with gods and as products of the *procreation of gods*. More specifically, let's consider the religion practised in the Canaanite city state of Ugarit (on what is now the coast of northern Syria).

Ugarit was occupied since the Neolithic period (6500 BC) and its position as a hub for trade and cultural exchange from the Hittite empire in the north to Egypt in the south and from Mesopotamia in the east to the Mediterranean in the west led to its development into a flourishing kingdom.

In Canaan, male and female deities were worshipped as Divine Pairs. (Some of the myths about these deities eventually ended up in the Bible and in Judaism where they have other names).

“In the Ugaritic text KTU 1.100:1-2, three ancient Divine Pairs are mentioned. These Divine Pairs seem to be regarded as the first Divine Pairs which brought forth all of subsequent creation. The first pair is Heaven and Flood, whereby Heaven is the masculine partner and Flood is the feminine partner of the pair. This first pair brought forth the second Divine Pair: the female Source and the masculine Stone. And this second pair subsequently brought forth the third Divine Pair, consisting of a male breeding animal and a female breeding animal.” (Van den Bosch)

The idea of a “Heaven and Flood” pair correspond to the Upper Waters and the Lower Waters of Judaism, where it is rather endearingly explained that they were once united in one “eternal embrace” but were forced apart:

“... the first pair of Heaven and Flood we encounter again in Jewish sources that tell about the masculine upper waters and the feminine lower waters. These waters were locked in an eternal embrace but were separated on the second day of creation.” (Van den Bosch)

The identification of two water entities and the separation of them into one that is located above the other is also explained in the Old Testament of the Bible:

“And God said, “Let there be a vault between the waters to separate water from water.” So God made the vault and separated the water under the vault from the water above it.” (The Bible)

The idea, in Ancient Near Eastern mythology, that water was a living entity imbued with a divine spirit is echoed later on in the Bible:

“The earth was without form and empty, with darkness on the face of the depths, but God's spirit moved on the water's surface.” (The Bible)

That the masculine Heaven is responsible for sending fertilising water (rain) and that the female Flood receives it on earth where she resides in the ‘lower waters’ i.e. rivers, waterfalls, lakes etc, would have been an accepted belief in ancient times according to Van den Bosch:

“In Ancient cosmogony there was no clear distinction between irrigation and ejaculation. The sexual behaviour of the gods and the irrigation and fertilisation of the cosmos were just two sides of the same medal. Baal, for instance, was known as the bringer of the fertilising rain. But at the same time he is portrayed as a bull with great sexual vigour. These two characteristics belong together.”

With this mindset, it is quite possible to interpret rain as “water sperm” and the moment when a raindrop hits the surface of a body of water as the moment of “conception”, with the ensuing water rings marking the duration of the “pregnancy” until the new water “offspring” has been “born”.

In other words, the male Upper Waters is responsible for “impregnating” the female Lower Waters, i.e. all the bodies of water that exist on earth – the lakes, the rivers, the waterfalls, the sea.... It’s in effect a mythological translation of the descending part of the water cycle. In a pre-literate society, art is used instead of text to describe ideas and tell stories. I think that sites like Achnabreck, where the petroglyphs have a clear association with the shapes and patterns that can be observed in water, can be regarded as the equivalent of a book that explains “how water is made”. Perhaps it was a venue for large, communal gatherings where water-related rituals and ceremonies were performed?

Given that the Lower Waters was regarded as *female*, makes it possible to assume that the above notion could have transferred into ideas about female fertility. In a prehistoric society where no medical expertise was available, belief in magic and superstition would have been used to fill the gap. It is reasonable to assume that the cup and ring marks could have been infused with this added meaning and that they were used as objects in a ritual of sympathetic magic to achieve conception and a safe and successful pregnancy and childbirth.

It is certainly possible to imagine that women, as part of a fertility ritual, could have been sitting on the motifs to connect to the “power” they were believed to have. Perhaps, in a less than poetic way (!) one can compare it to the way we plug in an electrical appliance into a wall socket so that it can be charged with electricity and work properly.

Interestingly, according to folklore, this is *exactly* what barren women would do on the Fertility Stone at Dacre, North Yorkshire, which is decorated with cup and ring marks. Perhaps the Towie ball with its possibly water-inspired patterns was used by barren women (in a way I will leave to your imagination, suffice to say, it would leave no evidence of wear and tear) for the same purpose?



The Fertility Stone at Dacre, North Yorkshire (England)

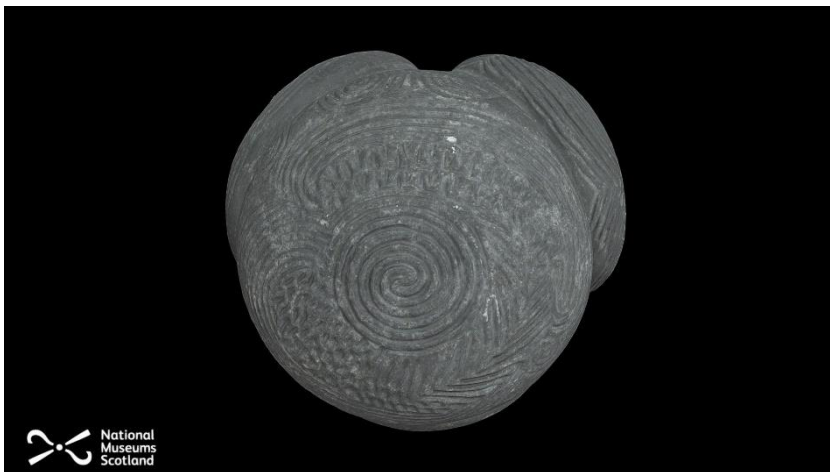
Photo: www.thenorthernantiquarian.org/2011/08/22/fertility-stone/



Tormain hill, Ratho (Scotland)
Another fertility stone?

Photo: www.ancient-scotland.co.uk/site/270

Let's take another look at the Towie ball. The spiral in the centre is (almost) encircled by a pattern that forms an open ring around it, leaving a gap to the left.



The Towie ball. Found in Towie, Aberdeenshire (Scotland).

Dated to between 3,200-2,500 BC.

Photo: sketchfab.com/3d-models/carved-stone-ball-towie-aberdeenshire-b3580aa890b841d19ac51e2d0f83e91c

Below is a wooden figurine of the Egyptian queen Tiye, in the form of the goddess Taweret. Tiye (also spelled Tye, Taia, Tiy and Tiyi) was the Great Royal Wife of Amenhotep III, mother of Akhenaten and grandmother of Tutankhamun.

Taweret, was a goddess of fertility, pregnancy and childbirth that was worshipped in Ancient Egypt.

“She was thought to help women in labour and to ward off evil spirits and demons who intended harm to mother or baby. She was also thought to help with matters of female sexuality and pregnancy...” (Ancient Egypt Online)



Queen Tiye (1398 BC - 1338 BC), in the form of the goddess Taweret – protector of mother and child during pregnancy and childbirth. Photo: Egyptian Museum, Turin

The design on the back of the figurine bears a *very close* resemblance to the pattern that encircles the spiral on the Towie ball above. Surely too close to be coincidental? If Taweret was the inspiration for the Towie ball, then the pattern that encircles the central spiral can be interpreted as something along the lines of “Taweret will protect you during your pregnancy”. Furthermore, it also demonstrates a cultural influence from Ancient Egypt in Bronze Age Scotland.

On the side of the Towie ball above, we can just about make out three small spirals (a better view of these is shown in the previous image of the Towie ball). Two of them are connected, and one is set slightly apart.

A comparison can be made with the Tormain hill stone above. The stone has a natural fracture which divides it in two. On the triangular section of the stone is a motif of three cup-marks where two are associated with each other forming a slanting “8”.

On the Towie ball, at the centre of one of the other knobs, there is also a group of three “dots”, where again, two are associated, just like on the Tormain hill stone. What is the meaning of this? A plausible interpretation is that it symbolises conception, which could be described as a fusion of two which will give rise to a third.

Another knob on the Towie ball shows four large spirals. What could be the meaning here? I think this might symbolise the four factors that are essential for a pregnancy: the male, the female, the embryo and the placenta. This would also explain the fourth little spiral (not visible in the pictures in this paper) that is set apart from the group of three which are on the side of the knob shown above. The Towie ball can be viewed in detail on the National Museums of Scotland’s website.

The fact that cup and ring marks appear so widely across Scotland supports the idea that they were possibly used by women in rituals related to pregnancy and childbirth. Perhaps the large, open sites like Achnabreck were used for water related ceremonies on a large scale for

communal gatherings and the smaller, sheltered sites like Tormain hill were used by women in private rituals related to aspects of their fertility? Perhaps they thought that the petroglyphs were charged with a divine power that they could access by touch or by sitting on them so that the imagined “power” could transmit itself through the vagina and into the uterus?

The design on the Tormain hill stone that can be interpreted as a story about conception is repeated on stones in other areas. For example, at Gallow Hill, Tealing, Angus where a different design but similar layout seems to explain the same event: the union of male and female (two joined cup and rings) produces the embryo (two cupmarks within two oval rings) with an attached placenta (cup and ring). I interpret the additional cupmarks as amniotic fluid and/or perhaps an illustration of “life force” (heka?).

Observations in water

So, assuming that water was the inspiration for the creation of many of the Scottish petroglyphs of the cup and ring mark style, how can these shapes be observed in water? I will attempt an explanation below:

Shapes formed by the impact of raindrops from gentle rain falling into a body of still water:

Cup and rings, simple rings: (as explained above, see photo below)

Superimpositions: created when two raindrops fall simultaneously into almost the same spot. The rings created by them will be forced to compete for the same space and will therefore create an overlapping pattern. See photo below.

Arcs/partial rings: these will be created when a raindrop falls very close to the edge of the pool. The edge will stop a full ring from forming. See photo below.

Shapes formed by the impact of hard rain falling into a body of still water:

Cups without rings: created when a multitude of raindrops fall simultaneously into the water making it choppy, with lots of small waves, but no rings.

Shapes formed as a result of water flows:

Keyhole shapes: as explained above. The shape represents a view from above of a pile standing in flowing water. (Analysis of water flow pressure on bridge piers considering the impact effect, Wang, Zou, Xu and Lou)

Spirals, including the double or horned spiral which is formed in a Kármán vortex street (see the animation on Wikipedia). See photo below.

Wavy lines: waves. Perhaps this petroglyph was directly influenced by the Egyptian water symbol? As mentioned above, place name research suggest a Phoenician origin of some Scottish place names found along the western coast and in the Hebrides.

Shapes formed in ice:

Straight/angular lines: these can be observed in breaking ice

Photos of shapes that possibly inspired rock art motifs:



Double spiral, dumbbell, single rings, cup and ring
Photo: Veronica Wikman (author)



Single rings, concentric rings
Photo: Veronica Wikman (author)



Arcs
Photo: Veronica Wikman (author)



“Stacked” rings
Photo: Veronica Wikman (author)

Location near water

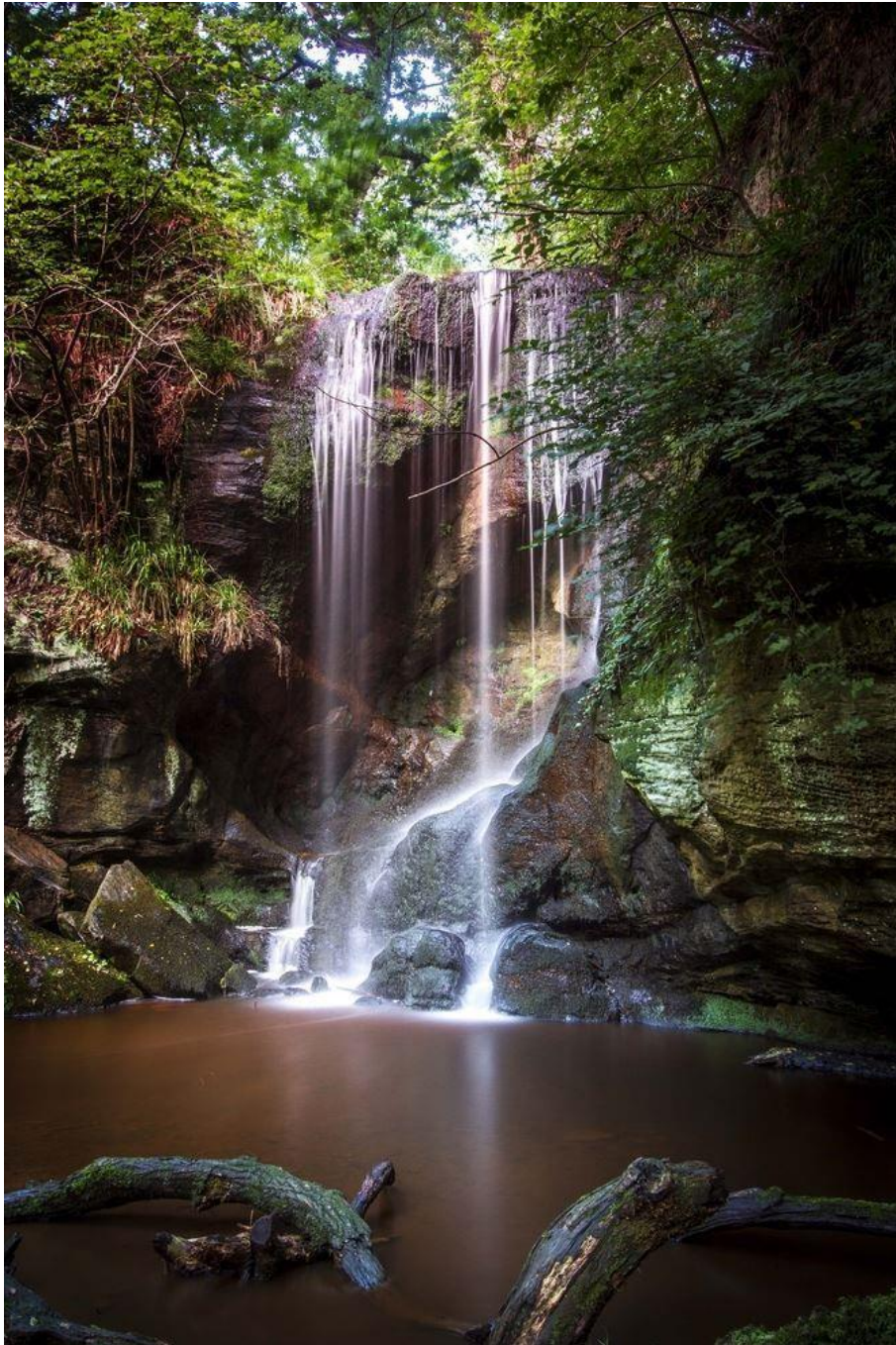
At several sites, for example at Roughting Linn (Northumberland, England), the motifs are positioned in or near a natural hollow in the rock, with the effect that the petroglyphs come into direct contact with rainwater or snow that will naturally collect in the hollow. There can be no doubt that the makers of these petroglyphs deliberately chose to place them there in order to create that effect. It is also interesting to note that the rock art sites themselves are often close to bodies of water, such as waterfalls, rivers, lakes, bogs and the sea.



Detail of hollow with cup and ring marks at Roughting Linn, Northumberland (England).
Photo: www.flickr.com/photos/howick/4745116689



Roughting Linn, Northumberland (England)
Photo: www.stone-circles.org.uk/stone/roughtinglinn



Roughting Linn waterfall (near the rock outcrop), Northumberland (England)

Photo: www.pinterest.co.uk/pin/333547916145552062/

Conclusion

Cupules (cupmarks) are the oldest and most ubiquitous type of petroglyph in the world. We can find them wherever we find evidence of human occupation. While this petroglyph no doubt has had a variety of uses and meanings to people over time, I think that it is very plausible that it was once used as a symbol for water. Concern over access to water and its lethal and destructive potential is a perennial and common denominator for all of us. The cognitive step required to associate a water-filled pit with water, even when the water has evaporated from the pit, seems a natural one to make. Especially, in consideration of the fact

that it is possible to observe depressions being created in the ground by rainfall while this happens. As a cupule resembles a pit and as it was possible for our early ancestors to create it with simple stone tool technology and in the environment they inhabited, it seems an obvious candidate for a water symbol. Also, there are references in the Bible and also in Jewish literature to a special, portable water generating rock with many holes. In view of the fact, that portable rocks, with a multitude of cupules, have been found, the religious stories seem to further support the idea that cupules may be interpreted as water symbols.

Taking into account that petroglyph creation is a time consuming business, that a painted symbol would be equally useful in a protective cave environment, and that the painted equivalent of a cupule would look like a round dot, makes it possible to infer that the rows of painted round dots (dated to the Palaeolithic) that exist in caves in northern Spain where Palaeolithic cave art has been found, are probably water symbols. It is perhaps also possible to assume that the dotted spiral decorations and the incised snakes on the pierced, mammoth ivory plaque found at Ma'alta, Siberia, carry a water reference, and that it might have been used as a pendant, serving as an amulet against the dangers of a river.

Is it also possible to infer a water symbolism from the enigmatic type of rock art, the cup and ring mark motifs, created in Scotland (and other locations) during the Neolithic and Bronze Age? Yes! I think it definitely is. Here there are many supporting factors to take into account. First of all, many of the shapes that make up the motifs can be observed in water as a result of the physical forces that govern the behaviour of water.

Secondly, in the absence of scientific knowledge, the people of Neolithic and Bronze Age Scotland would have had to make up their own explanations, or adopt them from another culture, to account for the natural phenomena they encountered. In light of the above, it is plausible that this would have included beliefs from Ancient Near Eastern mythology.

Perhaps the rock art sites should be regarded as venues where rituals and ceremonies to communicate with these deities took place? The Scottish stone balls which are decorated with similar motifs, such as the Towie ball, might have played a part in this context. A contemporary Bronze Age comparison can be made by looking towards Scandinavia, where there is a correlation between the figurative motifs found on the Danish bronze razors and the figurative rock art found on granite bedrock in for example Tanum, Sweden.

Thirdly, the creation of these petroglyphs coincides with the introduction of agriculture in Scotland during the Neolithic and its early development during the Bronze Age. Concerns about receiving the right amount of rainfall at the right time, in order for crops and pastures to grow and harvesting to be successful, would have been as acutely felt among Scotland's early farmers as they are today. Also, the beliefs surrounding the mythological Divine Pairs with its strong focus on fertility would be appealing for a cattle rearing society.

Yet another factor that can be taken into consideration is the fact that people in Bronze Age Scotland lived on crannogs - artificial islands built on piles in the lochs. It is reasonable to assume that the crannogs would have been subject to a similar kind of destabilising forces caused by currents and waves as our bridge piers are today. So, yet another reason to remain on good terms with the water deities! Alternatively, the creation of the petroglyphs possibly inspired by the shapes caused by water flows, might also reflect a nascent scientific interest in the different forms of movement that can be observed in water.

But finally, I think the most important point to consider is the fact that in the absence of medical care and knowledge, pregnancy and childbirth was perilous and would have taken the lives of many women and newborn babies. This would have been a very compelling reason for prehistoric women to use sympathetic and apotropaic magic to try to achieve conception and a safe and successful pregnancy and childbirth. As the cup and ring marks show such a strong resemblance to water, and hence have a clear association with mythological beliefs that links water with female fertility, I am convinced that they were used for the purposes described above.

Is an important key to understanding the enigmatic cup and ring marks to be found in water? Based on the above, in particular the fact that so many of the petroglyphs discussed in this paper can be observed in water, I really think it is. Unfortunately, we can't ask Thales, but if he was still among us, he would surely declare that *all whatness is wetness!*

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