KEYWORDS: ***Style – Memetics – Meme – Petroglyph – Track Rock Gap – U.S.A.***

STYLE VS MEMETICS: EXPLORING SOME NEW IDEAS

Denise Smith

Abstract. The author explores new terminology drawn from the relatively new science of memetics to answer some of the criticism certain rock art scholars have levelled against traditional terms such as 'style' and 'art'. After a brief overview of the terms, there is a discussion of the petroglyphs found at Track Rock Gap, located in northern Georgia, U.S.A.

Debate rages in rock art scholarship about the use of certain fundamental terms, namely 'style' and 'art'. This paper will offer some possible alternatives drawn from the science of memetics, as defined by Richard Dawkins in his 1976 publication, *The selfish gene*. These terms will then be applied to a case study of a rock art site recorded in northern Georgia (United States).

The first task is to identify the problems defined by those who object to terms such as 'style' and 'art':

(1) *Art is not quantifiable*: There is no absolute list of traits one can tick off to determine if something is a work of art, or if it belongs to a particular style. One cannot simply tally up traits that lead to the conclusion that one is dealing with art. In terms of style, any traits listed are generalities; there are always exceptions. Since a researcher usually decides something is a particular style first, or qualifies it, the quantification process is secondary. Computer models generally depend on quantifiable data.

(2) *One cannot easily construct computer models*: Computer models need numbers, what are called hard data. Since the quantification is secondary, any numbers created are open to re-evaluation or repudiation.

(3) *The definition of art being used is unsophisticated*: In his book, *Landscapes, rock-art and the dreaming: an archaeology of preunderstanding* — an otherwise brilliant piece of work — Bruno David had the courage to offer this explanation: 'I hyphenate "rock-art" to distinguish such practices from the Western artistic programme [*sic*], which is closely tied to a market economy' (David 2002: 10). Influenced by the ideas of Paul Taçon and Christopher Chippindale, David joins those who make the simplistic equation of art and the market. As I mentioned in my review of the book in *RAR*, this Western-centric, post-Renaissance equation ignores much of the art ever created. Moreover, most art is religious in nature, and was *never* intended to play *any* role in a market economy. This is true even of Western art until, in reality, the seventeenth century when a public market replaced the traditional patrons of art: the church and the aristocracy. It is also true of much of the art created for an internal audience in cultures all over the world. Many indigenous artists today create for two groups: their own community (often religious in nature) and for the market. So, any objection to using the term 'art' on this basis alone simply does not hold up.

(4) *More scholars advocate throwing out 'art', preferring 'image'*: An example would be Johannes Loubser, who prefers 'rock imagery' rather than 'rock art', as he writes in his essay, 'Management planning for conservation', published in 2001 in the *Handbook for rock art research*, edited by David Whitley. He explains:

> …[N]on-Western cultures value rock imagery as communicating a sense of place with multiple spiritual meanings, including association with the perceived spirit world. This is in contrast with the most prevailing Western approach, which sees the same rock images as art, with an intrinsic aesthetic presence (Loubser 2001: 83).

If one follows this argument to its logical conclusion, does this mean that a Western sensibility about art does not include spiritual meaning? I most vehemently disagree. If Loubser is alluding to the delicate issues of Western racism and imperialism, in that scholars are colonising the aesthetic expressions of other cultures by recasting them as art, that is another matter entirely, and unfortunately beyond the scope of this paper.

(5) *Some authors advocate throwing out 'style', preferring*

'type': An example would be Julie Francis (2001), author of the essay 'Style and classification' included in the same *Handbook of rock art research*. A brilliant piece of scholarship insofar as she offers valid criticisms of 'style' and how it was defined by Meyer Schapiro, an American art historian in 1952. However, she ends the essay with the conclusion that style is useless because the results are subjective, therefore cannot be duplicated or consistently quantified. She proposes using the term 'type', in use in archaeological scholarship for some time, as a more respectable term, if only because it can be defined in more precise terms. I would argue that the term 'type' has as many problems, warranting more discussion for which unfortunately there is not space to go into here.

Memes

So, in an effort to avoid some of the baggage, more and more voices are clamouring to eliminate these terms and find a new language. Broader and more subtle definitions for 'style' and 'art' offered by myself and my fellow art historians are not getting much reaction. Therefore, how about terms invented by scientists, specifically the science of memetics? Biologist Richard Dawkins was working on an explanation as to why humans are so different from other social animals. To grossly simplify his argument, he decided the reason humans build architecture, create art, write poetry or compose music cannot be explained purely by genetics. Humans have another advantage besides having the right genes. He hypothesised that, in addition to the genetic replicator, there had to be a second replicator at work. He coined the term 'meme' as a tool to discuss this second replicator. Inspired by the word 'gene', meme refers to any action that can be imitated by another human, whether this is carving a petroglyph, painting a mask, or playing rock and roll music. An example would be the Aboriginal elder who repaints a site in Australia in the presence of younger members of the clan. He or she learned in their youth how to maintain the paintings by watching elders. The younger members will in their turn return to the site and repeat these same actions at a later date. Each and every imitation is the meme in action. Since 1976, when Dawkins (1989) published his ideas, many biologists, as well as other scientists, including psychologists, have picked up this idea. 'Meme' itself has become a meme.

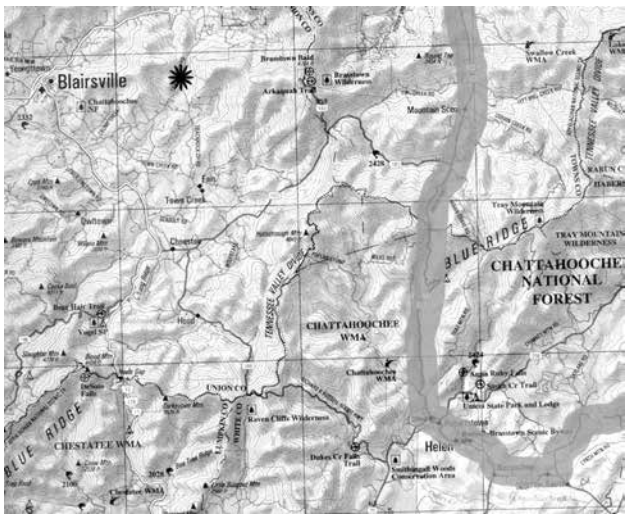

Figure 1. *Topographic map of Track Rock Gap (black star) and Unicoi Trail (in grey).*

To discuss how memes spread, many of the early scholars used the model of viral pathology, describing the process as one of infection, spreading through a population, going dormant at certain points in history, or recrudescing through the effort of archaeologists, epigraphers and historians. An example of this last would be the publication of the *Popol Vuh*, discovered by archaeologists, translated by epigraphers and examined by historians. In this case, however, the memes present in this ancient text have spread beyond a relatively small pool of host scholars to infect the larger populations in much of Europe and America, and perhaps further. Memes can enjoy a long period of existence, or they may die out in a few minutes. Their success is measured only in how quickly they spread.

To be sure, there are some problems with the terms in memetics, too, beginning with exactly how does one identify a meme? One scholar argued that the field of genetics has the same problem (Dennett 1995: 353). The term is simply a tool, an abstract construct, rather like the gene. Biologists can no more point to a segment on the human chromosome and say, 'There is a gene', anymore than one can say, 'This thing is a meme'. Usually, what survive are relics left from the action of a meme: the petroglyph, the mask or the song. These things are created under the influence of a meme. They in their turn may inspire other humans to imitate, either through watching the action of the making, or by examining how something was made and duplicating the process. Every repetition is how the meme survives and spreads.

Rock art scholars might consider how to apply this concept to their subject. Instead of elements, one could discuss memes. Instead of styles, one could define meme-complexes. Religious art, by the way, is often cited by most memeticists as being one of the most profound of meme-complexes, sometimes called a 'meta-meme complex', inspiring whole hosts of memes. These ideas are offered to encourage exploration and discussion. An example of how this language might be used would be an examination of a petroglyph site located in the south-eastern United States, near the border between the states of Georgia and North Carolina.

Track Rock Gap site

Track Rock Gap is one of the few publicly-accessible rock art sites in Georgia (Fig. 1). It has the virtue of being the only site I know of in Georgia where the

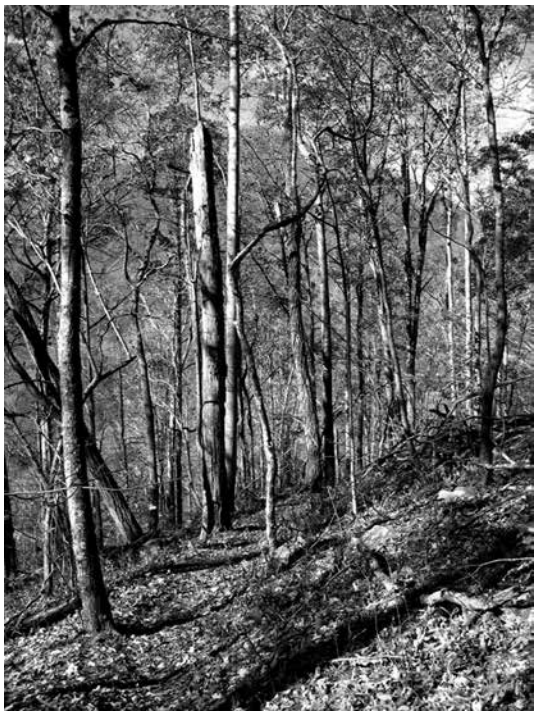

Figure 2. *View to the west of Track Rock Gap towards Thunder-Struck Peak.*

boulders are still in their original location; I am speaking only of publicly accessible sites. The site is located just along a state highway, which overlies a much older native foot trail. One of the major trails crossing these mountains was the Unicoi Turnpike (Fig. 1; Goff 1953: 128). Assuming modern roads overlie the old foot trails, Track Rock Gap is 19 miles or 30 kilometres from the Unicoi Turnpike. So this site was near, but not on, a major trade route. Much of the traffic through the gap was probably local.

Track Rock Gap is positioned in between Thunder-Struck Mountain in the west, and Buzzard's Roost Ridge in the east (Figs 2 and 3). In Cherokee, Creek and Yuchi myths recorded by James Mooney, the first professional anthropologist in the United States, the buzzard plays an important role in creating the mountains of northern Georgia (Mooney 1992: 430). After a Great Flood, Buzzard was sent to find out if the earth was dry enough yet for the rest of the animals to go to the surface. Because he flew so low to the ground, the tips of his great wings brushed the soft earth, mounding up the mud to create the mountains (Fig. 4). Such a story would be an example of a meme, which is still carried by three different south-eastern tribes and now by Mooney's readers. About Track Rock itself, Mooney wrote the following:

> The Cherokee have various theories to account for the origin of the carvings, the more sensible Indians [*sic*] saying that they were made by hunters for their own amusement while resting in the gap. Another tradition is that they were made while the surface of the newly created earth was still soft by a great army of birds and animals fleeing through the gap to escape some pursuing danger from the west — some say a great 'drive hunt' of the Indians (Mooney 1992: 418–9).

Figure 3. *View to the east of Track Rock Gap towards Buzzard's Ridge.*

The repetition of this story from native to native, then native to outsider, and finally from Mooney to his readers, is another example of a meme. The creation of petroglyphs at this location would also be the action of a meme.

The site consists of several micaceous soapstone boulders, six of which still bear petroglyphs (Fig. 5). Mooney described stone cairns, present near the petroglyph boulders during his visit in 1889. There is no evidence today of such cairns. Because of the nearly horizontal orientation of many of the boulder faces, and their proximity to the ground surface, all of the petroglyphs are heavily weathered, rendering it impossible to tell what technique was used to create them, although abrasion is the most likely. Heavily vandalised, these boulders have been cut with axes or chainsaws, as well as having numerous names and initials carved into their surfaces, probably by pocket knives. One of my students who wrote a paper about this site interviewed several local people and summed up his

Figure 4. *View of Buzzard's Ridge from the north side.*

Figure 5. *Overall view of Track Rock Gap, photograph and drawing (not to scale).*

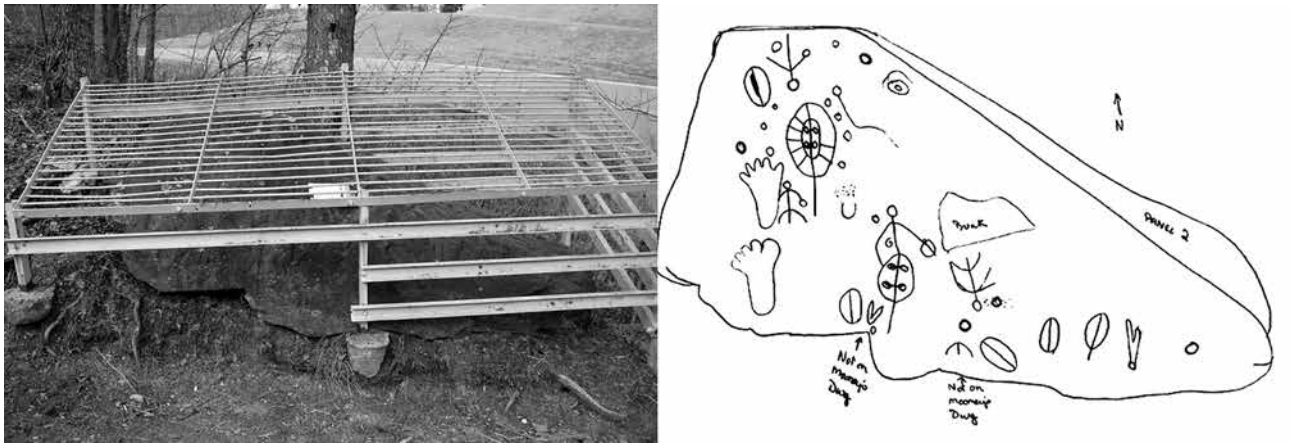

Figure 6. *Locus 1, photograph and drawing (not to scale).*

findings when he said, 'It seems to be a big joke that everyone has a piece of Track Rock' (Henry Dean, pers. comm. 2002). To protect the surviving boulders from further damage, the National Forest Service — the agency responsible for the management of this site — has placed metal grids over the boulders.

Locus 1 is probably the most famous boulder and the largest on the site (Fig. 6).

In 2004, I recorded on the main panel six bisected oval forms, two simple oval forms, one upside-down anthropomorph, another possible anthropomorph associated with one of the ovals, several cupules and two human footprints with five toes each. No handprints currently survive at Track Rock, although there are accounts of such existing at one time. It seems significant that what remains are footprints or other forms, not animal tracks.

Mooney's sketch of Locus 1, published in 1900, combines both panels into one image, adding another bisected oval and simple oval to the inventory (Fig. 7). A close comparison of his sketch to the actual boulder reveals that he did not record another possible footprint, two more bisected ovals, and a small element with two conjoined lines. There are two possible explanations for this: (1) he just plain missed these things, since they are *very* hard to see; or (2) these petroglyphs have been added since his visit (unlikely, but possible). I did my recording early in the morning with the raking light of the rising sun.

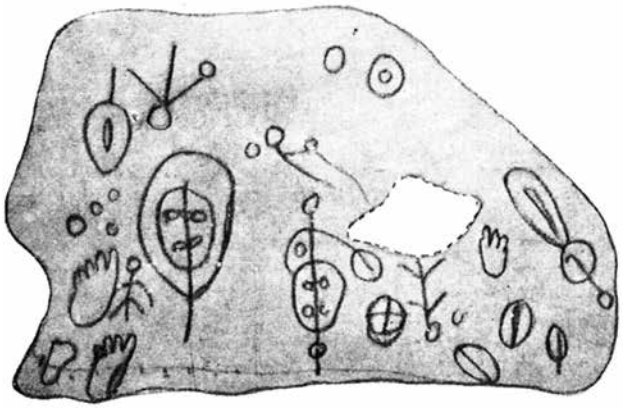

Figure 7. *Locus 1, drawn by James Mooney, 1889 (published 1900).*

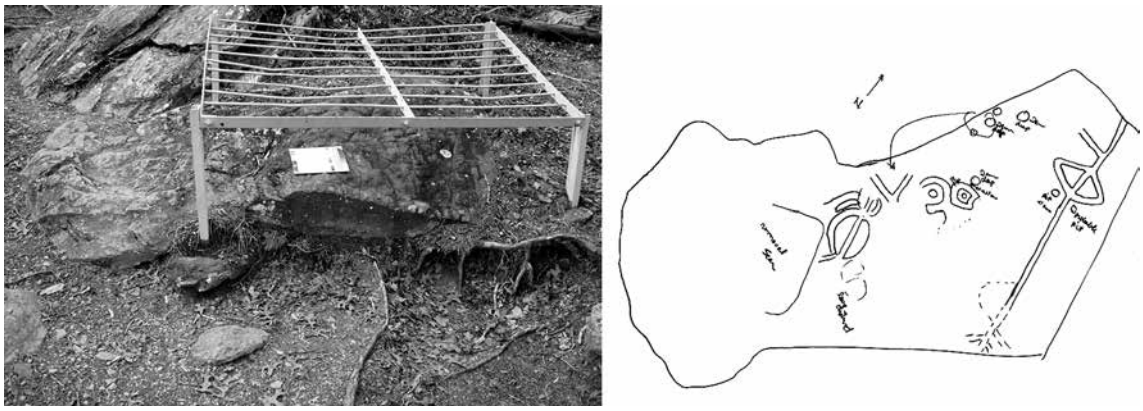

Figure 8. *Locus 2, photograph and drawing (not to scale).*

I discovered the small element of two conjoined lines in my initial examination, but when I went back for a photograph, it had vanished in just a few minutes. What I absolutely could not find were two footprints recorded by Mooney, which may have been removed since his visit. Unless one interprets the bisected and simple ovals as animal tracks (and most people see them as vulva forms), there is no evidence of animal tracks on Locus 1. This does not correlate with the story of birds and animals driven over this site in a hunt and leaving their tracks in the soft rock.

Locus 2 has also suffered badly (Fig. 8). The left side has been completely removed, leaving deep scars. Few figures are recognisable or describable forms, but there is one possible bisected oval form, plus the linear figure on the right with the diamond-shaped body. Mooney's drawing of the same boulder reveals substantial differences (Fig. 9). The white areas are those he reported to be missing. To the left of the bisected oval form, that is indeed true. But on the right side, the boulder is still intact. The only possible explanation I can offer for this discrepancy is that the overburden of dead leaves may have been so deep during Mooney's visit that he did not detect that the boulder continued beyond the petroglyph. I honoured the same conditions during my recording visits and never cleared any of the encroaching leaf litter.

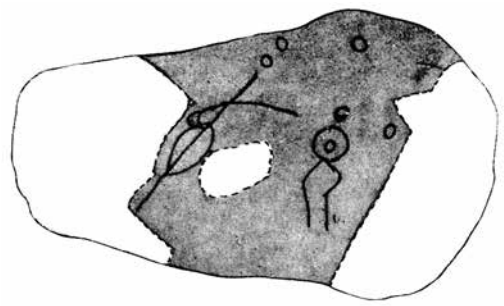

Figure 9. *Locus 2, drawn by James Mooney, 1889 (published 1900).*

Locus 5 bears the so-called 'Great Warrior's' footprint, measuring 16 inches, or 40 centimetres, among more ovals and one grid form (Fig. 10). Mooney quotes a Dr Stephenson who visited the site in 1834 as the source for this name (Mooney 1992: 419). However, Dr Stephenson described six toes, whereas I could only find four and a cupule nearby. Are Mooney's use of the name, 'Great Warrior's footprint', and his description more examples of memes? If so, whose? Did the meme originate among the Cherokee or the non-natives who passed on the stories?

Locus 6 presents some thorny problems (Fig. 11). In comparing Mooney's sketch from 1889, I could only

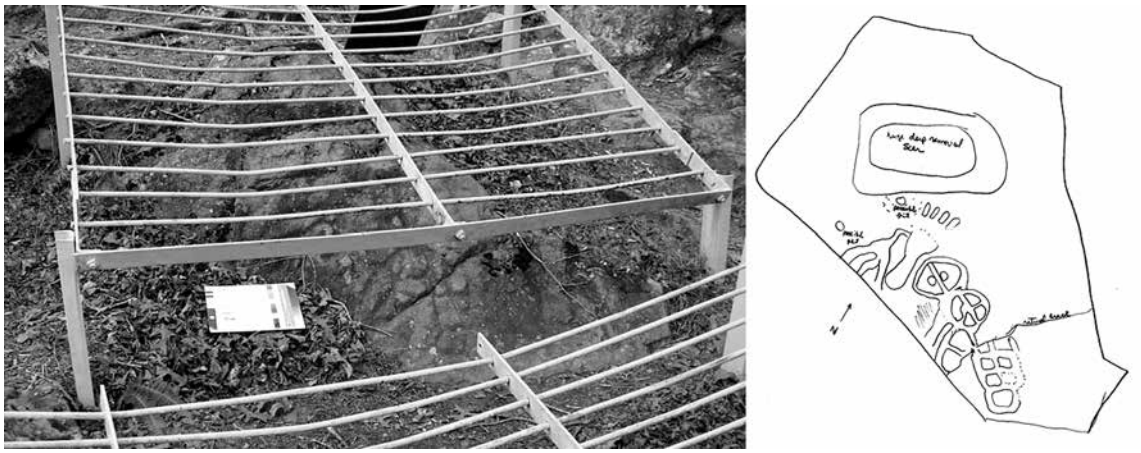

Figure 10. *Locus 5, photograph and drawing (not to scale).*

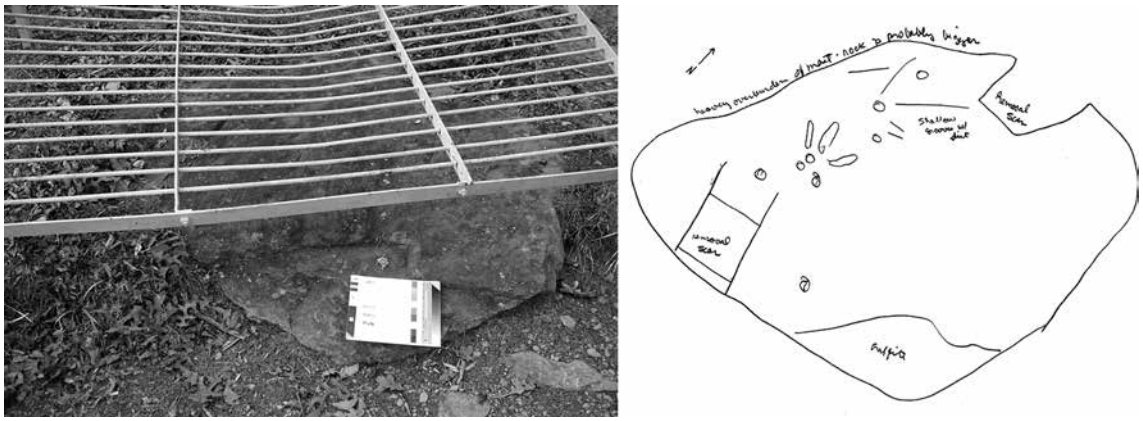

Figure 11. *Locus 6, photograph and drawing (not to scale).*

identify the rock by the shape of the portion cut out in the upper right corner. However, I saw nothing like what Mooney recorded (Fig. 12). The petroglyphs I did see more closely resemble the deer tracks reported by Dr Stephenson. The bird tracks Mooney recorded would have lent support to the Cherokee myth of the drive hunt. I suspect, however, that these are the very petroglyphs that have been removed by local collectors. However, it may also be a case of Mooney being influenced by the meme and seeing what he wanted to see.

Some suggestions have been offered in the analysis of the Track Rock Gap site on the usefulness of the language of memetics: the connection between the Buzzard character in native myths and bird tracks (or lack thereof), or stories of animals stampeding in a drive hunt and the presence of animal and bird tracks (at least at one time), or the Great Warrior and his footprint. To my knowledge, this is the first time (in 2004) memetics has been used to analyse rock art. Obviously, this is a most tentative offering, but one I hope will engender thought and discussion. Other scholars are invited to contribute to a discussion of memetics and its application to rock art scholarship. The following bibliography will offer a place to start.

Aunger, R. (ed.) 2000. *Darwinizing culture: the status of memetics as a science*. Oxford University Press, Oxford.

Blackmore, S. 1999. *The meme machine*. Oxford University Press, Oxford.

Dawkins, R. 1976. *The selfish gene*. Oxford University Press, Oxford.

Dennett, D. C. 1995. *Darwin's dangerous idea: evolution and the meanings of life*. Simon & Schuster, New York.

E-Journal: *Journal of Memetics: Evolutionary Models of Information Transmission*, http://jom-emit.cfpm.org/

Dr H. Denise Smith
Savannah College of Art and Design-Atlanta
1600 Peachtree Street NW
Atlanta, GA 30309

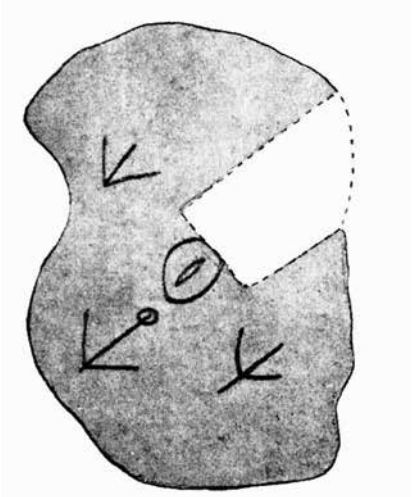

Figure 12. *Locus 6, drawn by James Mooney, 1889 (published 1900).*

U.S.A.
E-mail: *hdsmith@scad.edu*

RAR 26-896

COMMENTS

Notes on memetics

By PAUL FAULSTICH

In this intriguing and imperfect essay, Denise Smith challenges archaeologists to embrace scientific terminology. While this seems not only sensible, but necessary, this specific call for replacement of terms does not solve any problems of rock art semantics.

I am an advocate for infusing science into the study of cultural processes. However, Dr Smith's analysis of the Track Rock Gap artefacts, full of inference, does not provide a compelling argument for the viability of incorporating memetics into rock art studies, or for

a shift in terminology. If, as Smith suggests, a myth is a meme, a motif is a meme, repetition is a meme, a misidentification is a meme, and artistic creation is 'the action of' a meme, what use is such a precise yet simultaneously vague term?

A meme is an element of cultural ideas, symbols or practices. These elements transmit from one mind to another through art, rituals, or other imitable phenomena. Memes act as cultural analogues to genes in that they self-replicate and respond to selective pressures; in this respect memetics is a perfectly applicable — and potentially useful — concept to archaeology. However, the archaeologists' reduction of complex bodies of ideas (such as religion, art, even culture itself) to an essentially one-dimensional series of memes is problematic. Memes reduce and abstract, and alone they fail to produce greater understanding of complex cultural processed. However, when combined with other theoretical approaches, the concepts (if not the language) of memetics can be useful.

Consider, for example, semiotics. Semiotics is the study of signification and communication, and signs and symbols, both individually and grouped into systems. Unlike memetics, it includes the examination of how meaning is constructed and understood. It represents an epistemology as well as a methodology for the analysis of texts regardless of modality (for these purposes, 'text' is any message preserved in a form whose existence is independent of both sender and receiver). Memetic semiotics, for example, could represent a break from traditional art history and archaeological theory, and offer a variety of possibilities for fruitful analysis. Combining the strands of these two perspectives — semiotics and memetics — a theoretical approach based on humankind's affinity for visual imagery can be understood partly as an ethic of altruistic selfishness.

To the extent that nature has produced at least one artistic species, *Homo sapiens*, nature is not without creativity. We are creative beings and art is a natural phenomenon. However, a contrasting argument can be made that our interest in art comes particularly out of its utilitarian value in hunting, tracking, and natural history science. The basis, then, is cultural.

But neither of these positions is complete; culture and biology are not mutually exclusive. Art, if it indeed exists as a biological component of our species (as I believe it does), is certainly not free of sentiment and reason. The extent to which art is anthropocentric versus anthropogenic is not my immediate concern; indeed, in creativity both forces are at play. While Smith's concern is not so much the *philosophy* of art as its *biology*, we need not shy away from conjoining the cultural and ecological foundations of creativity. This extension of understanding art in interdisciplinary terms ties it to the processes of evolution; we may, therefore, understand art in biological as well as philosophical terms.

Creativity is a stream of energy flowing through a circuit of minds, bodies, and landscapes. Art, then, is comprised not only of components, but of an organisational pattern linking those components. Just as art is more than mere motif and style, memetic semiotics addresses more than a response to visual images; it is a response to the *systems that sustain* the images. Though we observe specific artistic motifs — roundels and lines, tracks and prints — art is none of these individual *things*; it consists of their interdependent relationships. Art is a common denominator of the cultural universe; intrinsic in all its multifarious manifestations but directly visible in none. Art, in its most ecological sense, is not about elements or styles. It is about relationships.

Biology tells us that nonhuman vertebrates show a widespread preference for the kind of environments in which their species prospers. Humans, at least, go further and express *aesthetic* preference for habitats conducive to survival, which suggests that aesthetic responses, as a characteristic of our species, are not trivial, but have evolutionary purpose. Additionally, we respond positively to landscapes in which there are suggestions of human influence, such as paths, villages, or even rock art. Such scenes bespeak socialisation, companionship, and an integration of human systems with natural systems. Geophilia is a persistently retained response to certain landform stimuli that presumably constituted risks or advantages during human evolution. Cultural and biological advantage is conferred on those who experience a sense of identity, reliance, and knowledge produced by the security of living in community and in place, and as a mnemonic, art contributes to this solidarity.

Culture is real phenomena, and adds dimensions of variability to human expressions of how, artistically and biologically, we fit into ecosystems. But symbolism, too, is real, and offers rich examples of how human intellect and intuition work in relation to the land. Diverse cultures have diverse perceptions of the land they inhabit. Understanding the core of at least some of these varying perspectives is imperative for our understanding of the human condition. Geographical places become sacred or symbolic when they conjoin human social facts with those of nature. Art, consequently, is a biocultural artefact necessary to the human ordering of life.

Graphic art is not merely concerned with animals, places, or events, but serves as a signifier of core aspects of culture. It is embedded in a cultural matrix that projects it from static form to discursive entity. As an iconographic expression, visual symbolism defines the order of the world as cultures and individuals conceive it to exist. Part of our cultural diversity and, indeed, our very humanity, derives from the unique ways we affiliate with — and depict — the world around us. This world — our environment — is the organic, emotional, and inspirational core of culture. Through art, self-and-other exist as a continuous and extended entity in diverse cultural worldviews.

Terminology, while important, is not alone going to bring clarity to rock art studies. For that we need astute, compelling analyses.

Professor Paul Faulstich
Environmental Studies
Pitzer College
1050 N. Mills Ave
Claremont, CA 91711
U.S.A.
E-mail: *Paul_faulstich@pitzer.edu*

RAR 26-897

Memes and rock-art: an unproven and unpromising approach

By CHRISTOPHER CHIPPINDALE, BRUNO DAVID and PAUL S. C. TAÇON

First, it is important that we clarify a misunderstanding near the start of the paper. Chippindale, Taçon and David indeed have noticed that the particular circumstances of 'art' in the recent and contemporary Western world do not neatly apply to pictures and images, including ancient rock-art and other markings, in other kinds of society. So have many other, perhaps nearly all, rock-art researchers. We stress that all peoples have aesthetics, but this does not mean that recent Western notions of 'art' apply equally to all peoples, for 'art' as applied in the contemporary West is a commodity in and of the market economy (one that takes advantage of aesthetic values, but is a commodity of the market economy nonetheless). We do *not* make a 'simplistic equation of art and the market' — or think that 'art' and aesthetics are *reducible* to market economics — and Smith's remarks that follow intended to show we are wrong — 'most art is religious in nature ...' — broadly agree with or re-state our actual position, rather than stating an opposite one. We are puzzled as to how this error arises, especially since the quotation from Bruno David's book *distinguishes* the Western artistic program from practices in other social contexts, as visible in rock-art. So this is a non-issue, and there is nothing to debate. It appears that comments by Jannie Loubser also have been misinterpreted, and that the whole introductory section is at best misleading.

Now to memes. A cute word for a cute idea. If biological reproduction takes place through the workings of genes, then other kinds of reproduction — such as the spreading of a cultural habit through a human population — can be modelled through 'memes' as the cultural equivalent of genes. So far, so good as a vague analogy: one can see a cultural habit — such as the wearing of scarves in a certain way, or the wearing of scarves at all — as spreading through a culture's population rather as an infection or a particular gene propagates itself.

A good model, like that of genes, has its origin in a certain class of circumstances, in this case that of biological reproduction with its coded DNA and the gene as the basic unit of heredity in a living organism. Well fitted to explain that system, it should be good also for other systems which are closely similar, where similar kinds of entity are reproduced by a similar mechanism. It will be weak for other systems where different kinds of entities are reproduced by different mechanisms.

It does seem to us that the very particular way in which biological organisms reproduce by a biochemical mechanism encoded by genetic material and where such genetic material in descendent populations cannot be affected by the learned behaviour of the ancestors has little in common with how cultural traits reproduce in a cultured human society. One of the better efforts to translate the notion across is Ben Cullen's idea of a cultural virus (2000) — a book which could usefully be added to Smith's recommended reading. Rather than closely following the DNA and genetic analogue, it develops a loose analogy between infectious diseases spreading by means of a biological virus and cultural traits spreading as a kind of 'cultural virus'.

Reading Smith's worked example, we are at a loss to know what the meme in this case is actually supposed to be. What a gene is in biology is reasonably clear and well-defined, but what is a meme in rock-art research? Examples given successively in the paper are: a story carried by three south-eastern tribes; the repetition of this story from one person to another; the creation of petroglyphs at a certain location; (possibly) the use of a certain name to describe a motif. Its final mention is in the remark, 'it may also be a case of Mooney [researcher of the site] being influenced by the meme': here, we are at a loss to grasp which of the several things reported in previous paragraphs is this 'meme'.

Earlier Smith has said, 'Instead of styles, one could define meme-complexes'. Style is a difficult concept, and a word used in so many different ways that we prefer to avoid its use altogether. But we need to know just what is different about a meme-complex, and why defined meme-complexes will offer insights and productive methods not accessible through notions of style. If they do not, then one simply replaces a standard, well-known and difficult concept by one which is novel, obscure — and at least as difficult.

This paper is presented as the first time memetics has been used to analyse rock art. We respectfully suggest memetics has not actually been used here, and that no good evidence has yet been offered as to why the approach would be valuable if it were to be applied!

Dr Christopher Chippindale
MAA Museum of Archaeology & Anthropology
University of Cambridge
Downing Street

Cambridge CB2 3DZ
United Kingdom
E-mail: *cc43@cam.ac.uk*

Dr Bruno David
School of Geography and Environmental Science
Monash University
Clayton, VIC 3800
Australia
E-mail: *Bruno.David@arts.monash.edu.au*

Professor Paul S. C. Taçon
School of Humanities
Gold Coast campus
Griffith University, QLD 4222
Australia
E-mail: *p.tacon@griffith.edu.au*

RAR 26-898

Memetic gymnastics in rock art research

By ANDREA STONE

Denise Smith proposes a radically new way of thinking about how particular rock art forms (aka 'styles') disseminate and persevere (basically describing synchronic and diachronic processes of cultural transmission) using concepts and terms drawn from memetics. At the least she deserves credit for thinking 'out of the box' and giving us something very unusual to chew on. Moreover, rock art researchers may ultimately benefit from this approach once its relevance is made apparent. I speak from the perspective of one lacking a background in memetics in dire need of definitional clarity. For someone in this naïve position the pieces of puzzle do not fit together. I cannot see the logical intersection of the various arguments nor how using the term meme, rather than something more conventional, sheds substantive light on the Track Rock Gap site in northern Georgia. This is possibly a situation in which too little has been said about something that, inherently, is very complex and demands more qualification.

I would like to detail some of my questions, and apologise in advance if they are the result of sheer ignorance or misreading of the author's statements. I did a bit of snooping on the Web about memes, and quickly realised that there is no consensus about what a meme is. Smith defines it as 'any action that can be imitated by another human.' One question I have is: where does the meme reside? In the human brain (Dawkins' position?), that is, as an idea about an action, or rather in the external world (Smith's position?), somehow embedded within the action itself? Or is this a relevant question? How can one understand the statement that 'Each and every imitation is the meme in action' if the meme is defined as an action. Please clarify if imitation here refers to an act or a thing imitated. Perhaps more expanded discussion of a meme as an entity (especially where it resides in the physical world) would shed light on this.

If meme is a fuzzy abstraction, modelling it as a virus comes as a relief because viruses are concrete things with an innate drive for replication, and therefore can be imagined to exist and spread (yet this model is even more profoundly hypothetical). The author exemplifies the viral paradigm with the K'iche' Maya text known as the *Popol Vuh*. Although not germane to the questions at hand, I am puzzled by the statement that the *Popol Vuh* was 'discovered by archaeologists, translated by epigraphers…' since the *Popol Vuh* was 'discovered' by 19th-century antiquarians, after being transcribed by a priest in the 18th century, and translated mainly by anthropological linguists. More to the point, I would like to know how a meme can be present in a text like the *Popol Vuh* if a meme is defined as a replicable action or how it exists at all in inanimate objects. I suppose we are to imagine this as a virus moving from a human host to an inanimate object where it lies dormant only to reinfect humans who come in contact with it. I realise that this is all conceptual modelling meant to further scientific inquiry, but it would also make a great plot for a rather scary science fiction film.

The article begins with a critique of the shortcomings of the terms 'art' and 'style' as a justification for seeking alternative units of classification. A major source of dissatisfaction with the old terms is in the area of quantification. Yet, in the memetic model presented there is not a single allusion to how it alleviates the quantification deficiency, nor how specifically it is less subjective (although it is clearly more hypothetical). When the model is finally applied to a specific rock art site, the only mention of memes occurs in the statement 'Instead of elements one could discuss memes. Instead of styles, one could define meme-complexes…'. The topic is then dropped until the end where it is claimed that memetics was just used to analyse a rock art site. Sure, one *could* discuss memes; however, this says nothing beyond the superficial. I wish the author *had*, in fact, gone on to discuss these things in an illuminating way beyond the idea that a story retold among indigenous people generated rock art that was later documented by Westerners. It is odd that memetics seems so arcane and theoretical while Smith's implementation merely describes a series of events without putting them into any deeper context. How does the analysis justify why the language of meme-complexes would be a better alternative than style?

The value of introducing new terms or redefining old ones is to accommodate a theoretical agenda based on a set of assumptions. Cultural transmission has been cloaked in a number of different terms, such as genealogy, citationality, and epidemiology by scholars seeking different approaches to relations of

power, cognitive development and phenomenological subjectivity. Conceivably memetics could be operationalised to address a set of issues or further a philosophical position relevant to rock art. However, this theoretical stance in relation to rock art, perhaps grounded in evolution, is not conveyed by the information provided; merely some of the tenets of memetics are uncritically noted. Perhaps the foundations of a theorised rock art memetics will be laid in a future instalment on this subject.

Professor Andrea Stone
Department of Art History
University of Wisconsin-Milwaukee
Milwaukee, WI 53201
U.S.A.
E-mail: *stone@uwm.edu*

RAR 26-899

The selfish meme meme

By LIVIO DOBREZ

I take my title from the extravagant Dennett (1996: 362) who promotes the meme meme because, among other things, it 'explains' cultural transmission in other than consciousness terms (bearing in mind that the viral spread of memes depends not on vehicles such as Dawkins, Dennett and Blackmore but the staying power of the meme itself). It seems necessary to begin discussion of Smith's paper in this way because if we are to use memespeak we raise the large issue of the extent to which we accept its implications. Dawkins, who begat the meme meme, was disarmingly nonchalant about it in *The selfish gene*, half suggesting it was no more than an analogy. In *The extended phenotype* he is still more self-deprecating, emphasising ways in which the gene/meme analogy breaks down (1983: 112) — as impatiently noted by Dennett (1996: 361). Of course, once you show scepticism, Dawkins' fast-talking fellow-traveller will accuse you of filtering or immunorejection. If there are two kinds of very big memes, the meme for Thinking You Know and the one for Knowing You Don't, Dawkins' progeny and biblical literalists share the first of these. In which connection I can only admire Smith's courage in calling up the spectre of the Dawkins progeny from a base in the Bible Belt. Some years ago, the generally positive American reviewer of a book I co-edited faulted us for including material by zoologists of a Darwinian disposition.

It is true that Smith seems still more throwaway about memes than their originator. Since you, the implied *RAR* reader, show little interest in broader and subtler approaches to 'style' and 'art', how about something (hopefully) scientific, how about memetics? In her own analyses of Track Rock Gap she reverts to sadly pre-memetic modes of description ('six bisected oval forms, two simple oval forms, one upside-down anthropomorph' etc.), throwing in the term meme once in a while. But perhaps there is a touch of irony in all this, especially as her memes — an original story explaining topography; two stories explaining the petroglyphs, the various replications of these, person to person; the making of the petroglyphs etc. — thoroughly obscure differences between distinct activities, as revealed by non-memetic accounts. She wonders if Mooney's term 'Great Warrior's footprint' is still another meme, asking: whose? (Meaning the Cherokee or later commentators.) But the memetics answer to this illegitimate question is plain: these people, Smith, myself and *RAR* are simply varied vehicles for the footprint meme. The real question is whether meme-terminology adds to existing ways of describing rock art. On present evidence, it is not clear to me that it does.

One might, as a thought-experiment, envisage its application to a more or less historically recent category of art, say portraiture. Rather than 'elements' or 'motifs', there would be memes corresponding to the Mona Lisa torso, her crossed hands in dialogue with her face, the problematical background landscape etc., not to mention smaller memes for her gaze, smile and so on. That would amount to a meme-complex (rather than a 'style') and would relate to other meme-complexes of a similar sort, ultimately to the meme-complex called portraiture. Somewhere along the line contextual memes (such as that for a 'likeness') would need to be factored in. Then again it might be better to think of all these memes and their complexes as 'phenotypic effects' (Dennett 1996: 347), let us say 'phenes', since memes are no more visible than genes. At which point the Mona Lisa looks like an aggregate of highly diverse phenes and phene-complexes which refer back to a memetic ground. It would be necessary to list all these bits of phenomenal and noumenal self-replicating information and to organise them into hierarchies of little, big and bigger, and in the process we would reinvent many taxonomic wheels, not least the theory of parts and wholes. The problems this raises are exactly those faced by archaeologists (in Australia, Maynard or Officer) who try, from scratch, to invent objective frameworks for stylistic typologies which they at once acknowledge as tainted by subjectivity. They are equally problems previously faced by philosophers, from Schleiermacher to Husserl to Gadamer, all focused in one way or another on the so-called hermeneutic circle, the relation of parts and wholes. I see no harm in fresh attempts at translating from one language to another — hermeneutics to (problematical) objectivity to memetics — provided we understand consequent losses and gains and, above all, remain firmly entrenched in Socrates' undogmatic Knowing You Don't Know meme.

The first section of Smith's paper explains her rather exasperated response to people who dislike

terms like 'art' and 'style'. I do not blame her: for two hundred years the *Geisteswissenschaften* have been in a desperate state of self-justification in the face of those aggressively confident *Naturwissenschaften*. It is for this reason we in the Humanities and Social Sciences (sic) have sought so hard to define methodologies which, if not scientific, are at least rigorous. It might, among other things, explain memetics, itself scientific only in some honorary sense (and, arguably, only tenuously connected with Darwinian evolution). Smith's points (1) and (2) correspond to point (5), the argument by some that neither 'art' nor 'style' are amenable to objective, i.e. quantifiable, assessment. Diverse matters are raised under these points. To comment on one example, it is true that 'art' is not given in any trait, a fact clearly evidenced by Duchamp's urinal or Warhol's Brillo boxes. There are no formal markers for art: art is simply what at any time we choose to call art and its markers are entirely contextual. It is also true that 'style' is a slippery concept, but *not* because it has no formal markers. Rather, the difficulty here is in archaeologists trying to quantify these. I agree with Smith that replacing 'style' with 'type' is not much help.

Point number (3) is initially confusing, as it deals not with problems found in terms like 'art' and 'style' by people unsympathetic to them, but with problems Smith has with people who use unsophisticated definitions of art. This would seem to be the burden of point (4) as well. I understand Smith's feelings on this score. Since the inaugural days of Giovanni Belzoni, archaeologists have wanted, on and off, to dynamite their way into those time-honoured, if hopelessly subjective, *Geisteswissenschaften*. On the other hand, to take one example, the equation of art and the art market need not be simplistic. It depends on how broadly you define the market. Moreover art not *intended* as part of a market economy may still function within it. In saying this I am not wishing to reduce culture to economics. Of course there are religious contexts for art (especially for rock art) and also aesthetic ones. (For a sophisticated, if ultimately reductive, account of the relation of aesthetics to 'fields of power' see Bourdieu's discussion of nineteenth-century French examples in *The rules of art*.) But the problem of the term 'art' is a real one: it carries 'art for its own sake', post-Kantian, anti-utility baggage — and most of what we call art is not like that at all. But we shall go on calling it art, just as we call churches Gothic though the Goths had no part in their making. For what it is worth, I prefer the term 'representation' which carries no modern aestheticist baggage, differentiates between artworks and utensils or tools, applies to anything from macaroni to a likeness, and focuses attention on the symbolic equivalence or doubling up which seems the essential element of re-presentation. Understood in this way, representation need not be confused with straight iconicity in the Peirce sense.

But to return to Smith's major theme, I am for vigorously pursuing the Art History argument with reductive archaeologists rather than wooing them with possibilities for yet another metalanguage, that of phenes and memes. I appreciated a paper coming from Art History, less for the good it might do to archaeologists than for the good it does to art historians, who for the most part never give a thought to rock art. I also appreciated information about a Georgia site previously unknown to me. The last word, however, should concern memetics and should go to the cyberpunk novel *Snow crash*, which defines memes no less crisply than Dawkins and even more sensationally than Dennett, tying them to that primary event of mythopoeic time, the Fall: 'Eve ... is responsible for getting Adam to eat the forbidden fruit, from the tree of *knowledge* of good and evil. Which is to say, it's not just fruit — it's data' (Stephenson 1993: 216).

Dr Livio Dobrez
College of Arts and Social Sciences
Australian National University
Canberra, ACT 0200
Australia
E-mail: *Livio.Dobrez@anu.edu.au*

RAR 26-900

Track Rock Gap in its archaeological and ethno-historical setting

By JOHANNES H. N. LOUBSER

In her article on the Track Rock Gap rock art site in far northern Georgia, Denise Smith appears to take an art history approach to the petroglyphs. I generally agree with her that a large proportion of Western art probably has a spiritual component and that non-Western art has an aesthetic component. In my chapter entitled 'Management planning for conservation' (Loubser 2001: 83), I recommended using the term rock 'imagery' instead of rock 'art'. This was mainly due to the reservations that a fair number of indigenous Australian Aborigines and Native American Indians have personally expressed to me about the term art. To accommodate their wishes when writing cultural resource management (CRM) reports about sites engraved, pecked, incised, painted, or drawn by their ancestors, I have decided not to use the word art (many Indians prefer terms such as petroglyphs and pictograms instead). So my choice of terminology in the 'Management planning' chapter should be viewed as a cautionary note to students of rock art who wish to work with indigenous stakeholders instead of as an outright rejection of the term art. Ironically, it should be noted, that some of the same autochthons who do not like the term art also claim that the images are pleasing to look at, therefore ascribing an aesthetic

value (one apparent reason for the reluctance to use the word art is their disagreement with the notion of art-for-art's sake).

As I am not qualified to comment on Smith's paper from an art history perspective I instead give some pointers on how an archaeological investigation of the Track Rock Gap site might proceed. Through the years I have become aware that any study of petroglyph and pictogram sites could benefit by considering the following three scales of reference, from macrocosm to microcosm (it helps to place these observations within a regional comparative frame):

1. *Landscape* setting and approach to and through area with petroglyphs and pictograms (e.g. associated natural and cultural features, including trails, rivers, rockshelters, camps, villages).
2. *Site* setting and approach to the site (e.g. rock morphology of site and resources nearby or within site, such as significant plants and animals).
3. Petroglyph or pictogram *motifs* setting (e.g. integration between motifs and rock surface, overlap of motifs, re-use of sites and motif differences, natural skins and potential for physical dating).

Being located on the south-western side of a prominent mountain gap, the petroglyph boulder complex could be viewed as a gatepost between prominent Woodland and Mississippian villages (c. 300 – 1838 C.E.) on the broad fertile Brasstown Creek floodplain to the north (e.g. Cable and Gard 2000) and smaller upland sites in the comparatively narrow Arkaquah and Nottely valleys to the south. An 1832 land lottery survey map of Indian land in the then Cherokee County, Section 1, District 17 (Torrence 1832) shows the Choestoe Indian trail running through the narrow gap, immediately east of the petroglyph boulders. Today the asphalted Track Rock Gap Road runs more-or-less along the same alignment as the ancient Indian trail. In the nearby mountains of North Carolina, a prominent petroglyph boulder, known as Judaculla Rock, is similarly located next to an ancient Indian trail (e.g. Parris 1950), at a juncture between a concentration of Woodland and Mississippian villages on the Cullowhee River floodplain to the north and the sparsely populated Caney Creek valley to the south (Loubser and Frink 2008). Farther afield in the south-eastern United States archaeologists have found that rock art sites are located next to trails, often at terrain changes, such as river crossings (e.g. Wagner 1996).

The Track Rock Gap petroglyphs were first documented by Stevenson in 1834 (Mooney 1900). Mooney claims that by the late 1800s the Cherokee trail passed between the soapstone petroglyph rocks (today rocks still occur on both sides of the road, although only the boulders to the west contain petroglyphs). To access a natural vent on the mountainside north-east from the gap and the petroglyphs, Cherokees had to pass the petroglyph site. Mooney (1900: 332) states that warm vapour emanated from a small hole in this mountain where 'Sometimes in cold weather hunters would stop there to warm themselves, but they were afraid to stay long'. Cherokees believed this hole to be a chimney of an underground townhouse inhabited by spirit beings. A branch in the trail that passed Judaculla Rock in North Carolina similarly ended up at an underground townhouse, in this instance it was the mountainside abode of the giant spirit being known as Judaculla.

The petroglyph site and the entrance to the underground townhouse are two of the three documented features that mark this transitional landscape between the populated Brasstown Creek floodplain and the Arkaquah/Nottely valley hinterland. A third group of historically documented features within the mountain gap is the stone piles and stone walls on the steep mountain slopes a few 100 metres to the south-east. In 1834 a Dr Stevenson noted 'huge heaps of loose rock' on his journey through the gap and in 1849 Reverend George White wrote that, 'On the side of this mountain is a rock fort' (White 1854: 658).

An Early Mississippian period OCR date of soils associated with the base of a piled rock wall at the site suggests that it might indeed be part of the 'rock fort' reported by White in 1849 (Loubser and Greiner 2002). Similarly, the conclusive identification of burial goods and Late Woodland-Early Mississippian period artefacts from underneath a carefully excavated rock pile suggests that least one of the 'huge heaps of loose rock' mentioned by Stevenson in 1834 has survived.

The concentric rings and cross-in-circle motifs on the Track Rock Gap boulders are also present on certain Late Woodland Swift Creek ceramics and on Middle Mississippian Wilbanks wares. Moreover, a pecked cupule, similar to those pecked into the designs at Track Rock Gap, was covered by a midden containing Swift Creek and Wilbanks ceramics on the banks of the Yellow River east of Stone Mountain (Loubser 2005). A radiocarbon date of charcoal from the midden fill calibrates to the Wilbanks period. The cupules covering the Track Rock Gap petroglyphs are probably not later than this time range. Together, the motifs and the radiometric date suggest that the Track Rock petroglyphs probably date to between the Late Woodland and Middle Mississippian. At other soapstone boulder sites in the region, such as Judacaulla Rock and Sprayberry Rock, the Woodland and Mississippian period motifs are done within the soapstone bowl extraction scars that date back 3500 years to the Late Archaic (Sassaman 1997). This consistent sequence shows that the concentric ring designs are later than the soapstone quarry activities.

Bearing in mind that no systematic archaeological recording of the Track Rock Gap petroglyph boulder complex, panels or individual motifs have yet been conducted, it is difficult to comment on these smaller-scale features of the site. What still needs to be done at the site is to carefully map the boulders and terrain and then plot the exact position and superimpositions

of individual motifs on each boulder.

Acknowledgment

Thanks is due to Carey Waldrip for drawing my attention to archival sources that mention the old Indian trail, the vent, and the rock piles in the vicinity of Track Rock Gap.

Dr Johannes (Jannie) H. N. Loubser
Stratum Unlimited, LLC
10011 Carrington Lane
Alpharetta, GA 30022
U.S.A.
E-mail: *jloubser@stratumunlimited.com*

RAR 26-901

REPLY

Exploring some new ideas

By DENISE SMITH

I have wanted to engage in a serious debate about these issues for years, but got little response from this paper when I presented it in India in 2004, or from any of the others I have offered over the last fifteen years in my efforts to critique the visual literacy of rock art scholarship. Since most of the discussants pose similar questions about memetics, I will begin there.

Faulstich is correct in that there is a raging debate about how to identify or define a meme, a problem pointed out by several of the other contributors here. Every scholar in memetics wrestles with the same question. In addition to those in my original bibliography, other contributors include Susan Blackmore (1999) and Robert Aunger (2000). It is not my wish to pose as a leading proponent of this new science, but rather to see if these ideas would be useful in solving some of the issues in our field. The summary offered by Chippindale, David and Taçon is correct in its essentials, including the idea of understanding a meme as a cultural virus, an old trope (or, dare I say, meme?) in memetics literature. While I was not aware of Ben Cullen's contribution (2000), it sounds as if his work is in line with that of Richard Brodie, who wrote *Virus of the mind: the new science of the meme* for a popular audience in 1996. Stone, in her turn, asks where exactly does the meme exist?[1] All the literature I have read defines the meme as the act. This begs the question, however, of how a meme spreads if a person does not witness said act. Dawkins and others suggest that memes sometimes — not always — leave relics or artefacts of their action, such as the petroglyph. The meme resides in the mind, but minds can perceive the relic or artefact and figure out how to copy it; therefore, the meme recrudesces. In his critique of memetics, Dobrez' analysis is spot on, echoing the questions posed by most of the other authors.

Stone, Chippindale, David and Taçon point out that I do not truly apply memetics to the rock art of Track Rock Gap, which is correct. I subtitled the paper 'Exploring some new ideas' expressly to convey that I knew this was a tentative application. When I wrote 'Therefore, how about terms invented by scientists, specifically the science of memetics?', I thought it was obvious I had my tongue firmly in my cheek. I found Dobrez' comments on the *Geisteswissenschaften* and the conflict with reductionism in archaeology to be brilliant; I sense a kindred spirit here.[2] Faulstich's suggestion to link memetics to semiotics is a most constructive and intriguing idea that I need to think about in more depth.

Loubser, unlike the other authors, does not engage in the discussion of memetics, but I would like to thank him for making a different and equally valuable contribution, in reality writing the other half of the paper. I was working within a word limitation and had to sacrifice the archaeological background of the Track Rock Gap site. I do appreciate his clarifications on the preference for 'imagery' rather than 'art' as a reaction to discussions with native consultants. Respect for cultural sensitivity should be a cornerstone for any scholar of rock art — or rock imagery.

To all of the discussants, I would like to clarify my motivation for writing this paper, or for exploring memetics. I perceive a verbal poverty in rock art scholarship where authors struggle to find a precise yet nuanced language to address visual imagery. I would argue that such precise and nuanced language exists in the discipline of art history. Those fortunate enough to be part of formal academic programs in rock art scholarship might consider including a requirement for their students to take an art history course, if only to expose them to a richer, more highly textured language of visual literacy.

I found this exchange to be most stimulating and would like to invite my esteemed colleagues to continue it with me in Robert G. Bednarik and Giriraj Kumar's session, 'Recent Trends in World Rock Art Research', at the IFRAO conference in Brazil, June 2009. I would like to thank the editor of *RAR* for the opportunity to have this discussion, as well as the contributors for their thoughtful comments.

---

1 As to Stone's clarifications about the discovery and translation of the *Popol Vuh*, I will bow to her superior knowledge, as pre-Columbian culture is not my field of study.

2 Unfortunately, Dobrez' comments about art history's disinterest in rock art are devastatingly accurate. I have always wondered why everyone includes rock art in introductory surveys to art history, but then ignores current research in the field. But then, I have the same questions about ignoring African art when discussing ancient Egypt, or Islamic art when studying Gothic Europe.

Dr H. Denise Smith
Savannah College of Art and Design-Atlanta
1600 Peachtree Street NW
Atlanta, GA 30309
U.S.A.
E-mail: *hdsmith@scad.edu*

RAR 26-902

REFERENCES

Aunger, R. (ed.) 2000. *Darwinizing culture: the status of memetics as a science*. Oxford University Press, Oxford. [HDS]

Blackmore, S. 1999. *The meme machine*. Oxford University Press, Oxford. [HDS]

Bourdieu, P. 1996. *The rules of art: genesis and structure of the literary field*. Polity Press, Cambridge. [LD]

Brodie, R. 1996. *Virus of the mind: the new science of the meme*. Integral Press, Seattle. [HDS]

Cable, J. S. and H. S. Gard 2000. Research design and field results of archaeological excavations in Brasstown valley. *Early Georgia* 28(2): 6–21. [JL]

Cullen, B. Sandford (edited by J. Steele, R. Cullen and C. Chippindale) 2000. *Contagious ideas: on evolution, culture, archaeology, and cultural virus theory: collected writings*. Oxbow Books, Oxford. [CDT]

David, B. 2002. *Landscapes, rock-art and the Dreaming: an archaeology of preunderstanding*. New Approaches to Anthropological Archaeology Series, Leicester University Press, London.

Dawkins, R. 1989 (1976). *The selfish gene*. Oxford University Press, second edition, Oxford.

Dawkins, R. 1983 (1982). *The extended phenotype: the gene as the unit of selection*. Oxford University Press, Oxford. [LD]

Dennett, D. C. 1993 (1991). *Consciousness explained*. Penguin, London. [LD]

Dennett, D. C. 1995. *Darwin's dangerous idea: evolution and the meanings of life*. Simon & Schuster, New York.

Francis, J. E. 2001. Style and classification. In D. S. Whitley (ed.), *Handbook of rock art research*, pp. 221–244. AltaMira Press, Walnut Creek, California.

Goff, J. H. 1953. Some major Indian trading paths across the Georgia piedmont. *Georgia Mineral Newsletter* 6(4): 122–131.

Loubser, J. 2001. Management planning for conservation. In D. S. Whitley (ed.), *Handbook of rock art research*, pp. 80–115. AltaMira Press, Walnut Creek, California.

Loubser, J. H. N. 2005. In small cupules forgotten: rock markings, archaeology, and ethnography in the Deep South. In L. Loendorf, C. Chippendale and D. Whitley (eds), *Discovering North American rock art*, pp. 131–160. The University of Arizona Press, Tucson. [JL]

Loubser, J. H. N. 2008. Heritage resource conservation plan for Judaculla Rock, State Archaeological Site 31JK3, North Carolina. Stratum Report submitted to Jackson County, Sylva. [JL]

Loubser, J. H. N. and T. G. Greiner 2002. The archaeological testing of stone features at 9Un367. New South Report submitted to Georgia Forest Watch, Track Rock Gap. [JL]

Mooney, J. 1900. *Myths of the Cherokee. Nineteenth Annual Report of the Bureau of American Ethnology, 1897–98*. Part 1. Government Printing Office, Washington, D.C. [JL]

Mooney, J. 1992. *James Mooney's history, myths and sacred formulas of the Cherokees*. Bright Mountain Books, Historical Images Series, Asheville, North Carolina.

Parris, J. 1950. *The Cherokee story*. The Stephens Press, Asheville. [JL]

Sassaman, K. E. 1997. Refining soapstone vessel chronology in the southeast. *Early Georgia* 25(1): 1–20. [JL]

Stephenson, N. 1993 (1992). *Snow crash*. Penguin, London. [LD]

Torrence, S. 1832. *District plats of survey, survey records, Surveyor General, RG 3-3-24*. Georgia Archives, Atlanta. [JL]

Wagner, M. J. 1996. Written in stone: an overview of the rock art of Illinois. In C. H. Faulkner (ed.), *Rock art of the Eastern Woodlands*, pp. 47–80. American Rock Art Research Association, Occasional Paper No. 2, San Miguel. [JL]

White, G. 1854. *Historical collections of Georgia*. Pudney and Russell, New York. [JL]