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

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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!

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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 memecomplexes...'. 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