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**Four Memes in the Two Million Year  
Evolution of Symbol, Metaphor and Myth**

**Abstract**

A major paradigm shift is emerging in our understanding of human cultural evolution. The new paradigm suggests that art, symbol and myth have been evolving over at least the last two million years. The old paradigm that they arose some 50,000 years ago in some sort of ‘creative explosion’ is no longer tenable. A review of global archaeological evidence suggests that the earliest human symbolic behavior began with the Makapansgat ‘found art’ sculpture at three million years ago and the earliest intentional symbolic behavior occurred at least by the Oldowan two million years ago.

I propose that there are four major ‘memes’ (energy-transformation-patterns) of cultural evolution that inform symbolic, metaphoric and mythic imagination and which manifest in such behaviors as collection of exotic objects, use of colorants, self-adornment, marking traditions, representational sculptures and mortuary practices. The four memes correlate to each of the four major dispersals and globalizations of human cultural evolution: Oldowan, Acheulian *sensu lato*, Middle Paleolithic and Upper Paleolithic. This Four-Meme model is compatible with and supports Michael Witzel’s hypothesis for three steps of mythology from Gaia to Gondwana to Laurasian (Witzel 2010). The Four-Meme model requires substantial revision of previous theories, such as those of Merlin Donald (1991) and Steven Mithen (1996).

Introduction. With respect to views on human cultural evolution, the last twenty-five years has been pretty much dominated by the view that a package of behaviors, so-called ‘behavioral modernity’, including art, religion, language and symbol arose about 45,000 years ago and was carried out of Africa by *Homo sapiens sapiens* colonizing the globe and replacing all prior species, including in Europe replacing the relatively dumb *Homo neanderthalis*. With the accumulation of new archaeological and other palaeoanthropological discoveries, it has become clear that the short-chronology of the ‘recent out-of-Africa model’ (ROM) is no longer tenable.

On the contrary, to take account of recent discoveries we need a major paradigm shift in how we think about the evolution of human symbolic behavior. International research on rock art and palaeo-symbolism is providing an ever-expanding database for reconceptualizing the semiotic and symbolic competence of our Middle and Lower Paleolithic ancestors.

In brief, there is now enough evidence to infer (1) that symbol, metaphor and myth as well as art, religion and language have been evolving for at least the last 2 million years—if not 3 million years; (2) that there have been four major waves of globalization or dispersal of symbolic behavior during this long chronology, three waves that appear to have arisen out-of-Africa and the fourth wave of Upper Paleolithic/Later Stone Age technology and culture possibly out-of-Central-Asia; and (3) that, as I propose, for each of these four waves we may distill from the palaeoanthropological database, and especially the archaeology, one or more fundamental ‘memes’ that appear to inform each stage of cultural evolution, including its basic symbols, metaphors and mythological themes. In other words, the first ‘creative explosion’ or ‘big bang’ of symbol and myth occurred at least two million years ago and has been evolving ever since.

Problems, Issues and Objections. There are oft-mentioned problems in identifying symbolic behavior in the Middle and Lower Paleolithic archaeological record. These include disagreements over (1) how to distinguish natural non-humanly modified objects (‘geofacts’, ‘nature-facts’) from artifacts; (2) how secure the artifact provenience and dating is and if taphonomic concerns have been addressed; (3) how to distinguish symbolic and non-symbolic artifacts, sometimes termed ‘nonutilitarian’ versus ‘utilitarian’ artifacts; (4) whether symbol evidence is ‘sparse’ or even ‘nonexistent’ for early time periods or ‘sufficient’ to infer patterns and generalizations; (5) whether one’s hypotheses are falsifiable or non-falsifiable (‘hard’ sciences versus ‘soft’ sciences or, worse, the humanities), ‘subjective’ or ‘objective’; (6), assuming there is sufficient data for identifying symbols and symbol-patterns, what method or methods to use to identify, describe and interpret them (semiotic, cognitive, linguistic, psychological, sociological, religious studies, art-historical and so on); and (7) how to define ‘art’, ‘religion’, ‘spirituality’, ‘mind’, etc. Each of these questions needs to be addressed in the study of paleo-symbolism (‘palaeoart’, ‘proto-art’) and all are currently being addressed in one form or another.

Having a background in the study of religion, with a focus on comparative mythology and the prehistory of religions as well as being a practicing ‘depth’ psychotherapist, and having training in palaeoanthropology, energy bodywork and neoshamanism, I have been focusing on identifying and aggregating a comprehensive database for symbolic behavior and attempting to infer from it major patterns in the evolution of human symbolic behavior.

Method. To extract symbolic, metaphoric and mythic themes from the palaeoanthropological record of human evolution and the ‘memes’ that inform them, requires careful thought. We need to bracket aspects of traditional terminologies and frames of reference that we might think of using, including terms such as ‘art’, ‘religion’, ‘spirituality’, ‘mind’, ‘psyche’ and so on. Such distinctions and labels seem to obscure more than they reveal. People back then didn’t make such distinctions and even contemporary hunter-gatherer peoples don’t seem to make such distinctions. All these terms are loaded with baggage and provoke irrational responses across disciplines. To attempt to grasp what people were talking about in the Middle and Lower Paleolithic we need to come up with new terms and new definitions. In this regard, neuroscience finding can be very helpful, but that is another discussion.

Note: Current terminology, such as ‘art’, ‘religion’ and ‘spirituality’ appear to be inadequate and too contentiously defined to identify and understand possible manifestations of symbolic behavior during Paleolithic time periods. Tentatively, we might think of ‘art’ as connoting (a) I.E. \**ar-* to fit together, join > art, rite, rhyme, arithmetic; (b) I.E. \**au-* see, perceive > aesthetic, \**au + dhē*, set, put = to place perception > audit, audience, obey: and (c) Borean HVLV, listen, hear > think, know, understand, mind, wisdom).

First, I suggest we use as the term for what we are looking ‘symbolic behavior’ and define it in terms of a set of such behaviors. In a recent *Mother Tongue* article (Harrod 2006a), I reviewed archaeological evidence for technological and symbolic behavior dispersals out-of-Africa over the last two million years, with special focus on the so-called ‘Southern Route’. I categorized symbolic behaviors building on and adding to McBrearty and Brooks (2000) and Bednarik (2003, 1995, 1993), and my current list is as follows:

- Regional tool styles
- Collection/manuporting of exotic objects (crystals, fossils, shells, non-local stone with ‘aesthetic qualities’)
- Use of pigment
- Self-adornment (perforated objects, beads, pendants, ornaments)
- Pecked, abraded, incised, serrated or notched objects (bone, stone, ochre, eggshell, wood)
- Geometric artifacts (circular and discoid objects, spheroids, rhomboids, triangles, etc.)
- ‘Marking traditions’, including ‘cupules’, geometric ‘signs’, evidence of ‘geometric’ protolanguage.

- Spoken language (circumstantial evidence)
- Image and representation (engravings, petroglyphs, painted or sculpted anthropomorphic, zoomorphic or abstract figurations and other ‘rock art’)
- Stone/bone arrangements/depositions (heaps of stones or bones, cairns, geoglyphs, deposition of stone/bone in special places)
- Exotic tools (made using exotic or ‘aesthetic’ materials, ‘aesthetic’ shapes, special degree of workmanship, etc., possibly exchange or status goods)
- Mortuary practices (bone modification, cannibalism, deposition, burials with or without grave goods, ochre, ritual objects)
- Symbolic places/landscape art (unusual or numinous landscape features, which might have had mythic or ceremonial significance, such as a vista, large boulder or rock formation, rock shelter, rockhole, gully, knoll, ridge, alluvial flat, and less visible features such as tree or bush, natural depression, rock face, hillside, path, interconnected pathways, or cleared areas—and for which evidence circumstantial)
- Gesture, mime and dance forms (although these are only identifiable by circumstantial evidence: ‘dance floors’, footprints, etc.).

This does not preclude the intentional transformation of everyday ‘utilitarian’ behaviors, such as underground mining, seafaring, tool-making and tools into symbolic behaviors, which have a high likelihood of taphonomic loss and ‘invisibility’ in the archaeological record (along this line see Hampton 1999).

I conducted this meta-review of the global archaeological record in search of reports of symbolic behavior with the aim of being as comprehensiveness as possible. I first reviewed and incorporated into master database tables items mentioned in several key inventories by Bednarik (2003, 1993) and McBrearty and Brooks (2000). Then I reviewed over 500 Paleolithic archaeological sites from Africa to SE Asia/Australia and China (Harrod 2006a). Subsequently, I added a review of 70 sites in Central Asia/Siberia (Harrod 2010). With this report I add over 180 more sites for Europe/West Asia, bringing the number of sites reviewed to a total of over 750 over all regions of the globe (excepting North and South America). The complete set of databases is online at [OriginsNet.org](http://OriginsNet.org). From this review of site literature as well as reviewing artifacts collected and interpreted by associates of the [OriginsNet.org](http://OriginsNet.org) website and my own expeditions, I culled an inventory of reports of hominid symbolic behaviors (palaeoart) over the last three million years of evolution (see Appendix for this global inventory).

In this review, I do not discuss the paleontology or genetics of out-of-Africa dispersals, except to simply identify hominid species postulated for each time period. It is important to note that genetics (Templeton 2010, 2002) appears to support my proposed model for three dispersal waves out-of-Africa

Nomenclature Note: Rather than the term ‘Early or Lower Paleolithic’, I prefer to make a clear distinction between the Oldowan and subsequent tool technologies. There is currently no accepted label for the time period between the Oldowan and Middle Paleolithic/MSA industries. With all its drawbacks, I have chosen to label this period ‘Acheulian’ *sensu lato*. In other words, when I refer to the ‘Acheulian period’, I mean sites that occur across regions in roughly the same time period as African Acheulian *sensu stricto* sites, whether or not they evidence Acheulian stone reduction techniques. Alternatively, one might label the time periods as Mode I, II, III and IV but this usage would have the same drawbacks.

Generally, I have employed different methods to elicit from palaeoanthropological artifacts the thematics of symbolic behaviors in the archaeological record. I like to consider evidence that has been checked against the problematic questions noted earlier and there has ‘reasonable’ assurance with respect to the following criteria, which I categorize in three stages:

1. ‘Archaeological’ steps
  - a. Archaeological provenance and dating secure enough for the interpretive task at hand. If available a taphonomic analysis of the site and assemblages may be critical.
  - b. Identify artifactuality, i.e., that the object is a human-made artifact or curated ‘nature-fact’. This may require microscopic examination. An object is not excluded from examination simply because it ‘does not look like a tool.’ Usewear and tool residue analysis may be relevant or may not be if we are dealing with a strictly ‘non-utilitarian’ artifact.
  - c. Accurate geologic and archeological determination and description of material features of the artifact and its context, which sometimes requires microscopic examination.
  - d. Rule out any pseudo-operators or background noise, such as random cutmarks, carnivore marks, vascular grooves, parasitic holes or marks, natural fractures, use-wear or post-depositional damage, etc.
  - e. The more ‘similar’ instances of the artifact the better, so that there are ‘sufficient’ examples and variants to infer patterns and generalizations.
2. ‘Semiotic’ steps, which involve distinguishing symbolic from non-symbolic artifacts.
  - a. The artifact appears to belong to one or the other categories of symbolic behaviors in our (albeit tentative) prototypical list.
  - b. There is an examination of the ‘internal context’ to determine if an exotic object, marking, possible representational image or other symbolic expression is constrained or follows some sort of rule with respect to number, repetition, pairing, set in or manifests a binary opposition, internal or external correspondences, symmetry and asymmetry or otherwise has some sort of iconic potential.

- c. Findings with respect to 'external context' that suggest symbolic function of the artifact, such as 'non-utilitarian' aspect, 'aesthetics' or 'superfluity of form' in comparison to other artifacts, paradoxical or puzzling location in site, etc.
  - d. If the subject appears semiotic, identify possible 'sign' mode or 'signifying competence' if any, whether code, icon, signal, or word, whether it has a role in a Johnson-Lakoff 'image schema' or analogical metaphor.
  - e. If subject appears semiotic, identify possible 'symbolic' mode or 'symbolic competence' if any, whether diaphoric metaphor based on juxtaposition and energy-tension, having qualities of complementarity or a *coincidentia oppositorum*.
  - f. If possible, reconstruct the overall 'semiotic competence', including its differential features and medium and any 'structuralist' features.
3. 'Hermeneutical' steps. God forbid! Decipher the 'meaning or message'.
- a. If there appears to be some sort of determinable symbolic competence, decipher the symbols 'meaning' or 'message' based on its differential features to generate and amplify a mythopoetic 'meaning', acknowledging limits of interpretation within a hermeneutic method or exegetic procedure which elicits a meaning somewhere between a meaning 'for them' and 'for us' (e.g., Hans-Georg Gadamer, Wolfgang Iser, reader response theory).
  - b. Explore amplification of archetypal symbols as a 'thea/opoetics' (Hopper & Miller 1967) that is as a poetic performative presencing of 'beings of animacy' (*JBH*) or personifications of the *elan vital* (*Bergson*). Attempt to systematically reconstruct, within the limits of residual artifacts and contextual factors, tentative prehistoric beliefs and thea/ologies, rituals or myths or their underlying structural themes, based on the decoding of the semiotic competence and decipherment of actual products of this competence. 'Systematicity' may include coherence, consistency and comprehensiveness of accounting for the semiotic evidence. It may include a rigorous critical method, such as mythic group-theoretic structure (canonical formula) (Levi-Strauss) or set-theoretic inclusion/exclusion dialectics (deconstruction and critical theories of privilege and marginalization).
  - c. Check adequacy of the decoding to the processual archeological context--a check on validity of the decoding.
  - d. Check the reconstruction against the evolutionary, stage-specific, model of mind ('meme') inferred from the archeological and 'cognitive archaeological' context.
  - e. Scan for precursors or survivals of the decoding--a further check on validity.
  - f. Amplify and check via ethnographic and mythological analogies, restricting analogies by factors such as geographic, cultural, genetic and 'mytho-stratigraphic' propinquity.

Sometimes I have used a second method for reconstructing symbolizations which infers and extrapolates from archaeologically determined ‘modes’ of technology or subsistence strategies (e.g. Harrod 1981). For this I suggest the following steps:

1. Identify the ‘mode’ of technology, which might include detailed aspects of its *chaîne opératoire* and/or paradigmatic manner of use, or subsistence strategy.
2. Deduce a hypothetical ‘mental template’ and/or ‘meme’ generative of that modality.
3. Identify later mythological or ritual forms—especially those having geographic, cultural, genetic or mytho-stratigraphic propinquity—that refer to the invention of, or otherwise reflect, that technological or subsistence mode.
4. Determine if these mythic forms may be or may reflect survivals of the earlier mode.
5. If so—with caution and due deference—extrapolate backwards to possibly reconstruct the mythopoetic ambiance of that technology or subsistence strategy, including its symbolic, metaphor and mythic possibilities and associated diaphoric intuitions, feeling-toned values, and expression of states-of-being (‘ousia-logical’ evocations).
6. Test hypotheses of ‘memic’ and ‘mythopoetic’ meaningfulness for coherence, contextual consistency, appropriateness, adequacy, etc. with respect to its ‘internal context’ and ‘external’ archeological and palaeoanthropological evidence.
7. Determine any predictions that might result from the hypothetical meme, model or hermeneutical implications and test the predictions against archeological and palaeoanthropological findings.

Results. Based on a comprehensive review of over 750 Paleolithic archaeological sites across the globe, I suggest that for the Middle and Lower Paleolithic the archeological record is no longer ‘sparse’. I have posted many images of symbolic artifacts from these early time periods on Originsnet.org, which has become the premier website on the English language version of Google if you search ‘origins of art’. I have put together a comprehensive, though of course not exhaustive, global review of symbolic behaviors during these periods (see the Appendix to this paper and also regional databases online at Originsnet.org). Of the 750 sites reviewed, I found at least 11 reports of symbolic behavior from the Oldowan; 13 from the Early and Middle Acheulian Periods and 54 from the Later and Final Acheulian Periods; over 150 for the Early and Mid-Middle Paleolithic and over 90 more from Late-Middle Paleolithic traditions—a veritable ‘creative explosion’ if there ever was one. This review of 750 sites has yielded a grand total of over 318 reports of evidence of symbolic behavior for the Middle and Lower Paleolithic (*Table 1*). All this is well prior to the Upper Paleolithic/Later Stone Age for which we already have a vast number of art and religious sites around the world and a voluminous literature.

<b>Table 1. Count of Reports of Symbolic Behaviors from Middle and Lower Paleolithic Sites in Comprehensive Database</b>											
	TOTAL	Exotics	Pigment	Adornment	Incised Objects	Geometrics	Markings	Representation	Arrangement	Exotic Tools	Mortuary Ritual
Pre-Oldowan	1	1									
Early, Classic & Developed Oldowan	10	1	1?		1		3?	2			2
Early & Middle Acheulian	>13	0 4	1? 2				1? 1?	0 1		1+ >1 <sup>1</sup> >1 <sup>2</sup>	
Later & Final Acheulian	54	3 1	5 2	3	2	4	4 2	9 + 8 <sup>3</sup> 1 <sup>3</sup>	1 1	4	3 1
Early & Mid-MP/MSA	>150	0 6	4 27+ >70	1 7	1 9		0 3	1 4	0 6		0 11
Late-MP/MSA <sup>4</sup>	90	3	12	22	5	2	11	11	9		15
<b>TOTAL</b>	<b>&gt;318</b>	19	>124	33	18	6	25	37	17	>7	32

Note. Several objects manifesting several symbolic behaviors may be counted up to several times.  
 1 If one accepts my interpretation of aesthetic playfulness of Early Acheulian bifaces at Peninj.  
 2 If one accepts my view of the Middle Acheulian symbolic pairing of cleaver and handaxe (which continues in the Later Acheulian but I did not tally more than 1 example of this into the database.  
 3 If one accepts 'decorated bifaces' which as such also include representative imagery.  
 4 Late MP/MSA technology is associated with both *Homo neanderthalis* and *Homo sapiens sapiens*.

It may also be of interest to differentiate the 90 reports of Late-MP/MSA symbolic evidence to compare to what extent *Homo sapiens sapiens* made art versus *Homo neanderthalensis*, since it is generally presumed the former made significantly more than the latter (*Table 1b*).

<b>Table 1b. Late-MP/MSA Neanderthal versus Sapiens as Symbol-Makers</b>											
<i>Neanderthalensis</i>	63	3	5	16	3	1	7	7	9		12
<i>Homo sapiens sapiens</i>	27	0	7	6	2	1	4	4	0		3
<i>Total</i>	90	3	12	22	5	2	11	11	9		15

Even if we add to the *sapiens* count reports of symbolic behavior at sites having an Early Upper Paleolithic tool industry (comparable time period to the Late-MP/MSA)—which I have inventoried in my *Mother Tongue* Southern Route study, which given its limits, counted 18 sites with adornments; 10, colorants; 2 with markings; 2, geometrics; 2, incised objects; and 1 site each for representational imagery and for mortuary practices; or 36 sites total. Even if all these sites are thrown in—I think not a fair comparison—the evidence for symbol-making is not significantly different across the two species.



Discussion. Based on my review of findings from over 750 archaeological sites, my own field explorations in East Africa, Israel, India and Australia, and other training, I suggest that there appear to be four major ‘memes’ that crystallized during the course of human evolution and informed symbolic, metaphoric and mythic imagination and its manifestations in such behaviors as the collection of exotic objects, use of colorants, self-adornment, marking traditions, representational sculptures and mortuary practices.

These four memes correlate to each of the four major dispersals and globalizations of human cultural evolution, namely the Oldowan, Acheulian *sensu lato*, Middle Paleolithic and Upper Paleolithic (*Table 2*).

Note. By ‘meme’ I mean the term ‘meme’ generally defined as ‘a unit of cultural information, practice or idea transmitted verbally or by repeated actions’. I give it a primary positive connotation as a transformation pattern for ‘cultural’ energy, while not excluding its negative connotation as ‘viral replicator’ (R. Dawkins). Compare (a) Borean *MVNV*, to think with > connotations, ‘mind, know, understand, test; see, hear; desire, wish; believe’ > I.E. *\*men-*, *\*mnā-*; and (b) Borean *MVTW* > to see > I.E. *\*weid-*, to see, know, search; idea, wisdom, knowledge. Philosophically speaking, I define and use the term ‘meme’ as ‘archetypal idea that encodes feeling-toned values of wisdom’.

As an integral function in evolution, specifically cultural evolution, I tend to formally define ‘meme’ as in the verbal form ‘to meme’ = to virtually (‘in mind’, ‘subjectively’) and in praxis (‘in practice’, ‘in material reality’, ‘objectively’) inhabit novel or ideal mutations of cultural practices/ideas and, reflexively, to change material (‘objective’), specifically cultural evolution, I tend to formally define ‘meme’ as in the verbal form ‘to meme’ = to virtually (‘in mind’, ‘subjectively’) and in praxis (‘in practice’, ‘in material reality’, ‘objectively’) inhabit novel or ideal mutations of cultural practices/ideas and, reflexively, to change material (‘objective’) relations that inform generation and acquisition of (units of) cultural information, practice or idea (‘knowledge’) transmitted verbally or by repeated actions in order to bring about accordance with such novel or ideal mutations; and within the interactive feedback loops between subjective and objective relations. A meme is an energy transformation, a ‘law’ for transformations of cultural energy in the energy field of cultural action, a transform of one or more ‘niches’ of human behavior practices/ideas and their material relations.

This can be contrasted with its variation, ‘social-mental habitus’ (habitus, Bourdieu; superego, Freud; ‘collective consciousness’, Jung), a structure of the mind characterized by a set of acquired schemata, sensibilities, dispositions and taste, which is the result of objectifications of social structure at the level of individual ‘subjectivity’ (*Wikipedia*), involving a ‘subjective’ or ‘mental’ interactive exchange with ‘objective’ social structures.

Further, note that ‘memes’ might be viewed as structuralist inverses of the four basic functions in models of evolutionary theory, mutation, adaptation, speciation and selection.

<b>Table 2. Four Meme Model for the Evolution of Art, Symbol &amp; Myth</b>	
<b>Era and Techné</b>	<b>The Four Great Memes</b>
<p>'Pre-Oldowan' &gt; 2.5 Ma</p> <p>Oldowan EO ~2.6 to 2.0 Ma 'Classic' ~2.0 to 1.4 Ma Developed ~1.7 to 1.2 Ma</p>	<p>'Rudimentary Symbolic' = 2.0-3.5 yrs // human = great ape cognition (A. Russon 2004) = <i>Australopithecus</i> (similar cognitive level by triangulation to common great ape ancestor)</p> <ul style="list-style-type: none"> <li>• First 'art object': 'animacy in stone'; 'animated spirit that inhabits the body'</li> </ul> <p><b>Conceptual-Symbolic Modeling</b> = <i>Homo habilis/rudolfensis</i> (out-of-Africa)</p> <ul style="list-style-type: none"> <li>• First Metaphor = 'core-seed-sustenance-essence in interpersonal interaction'; 'rhomboids of the mind'</li> <li>• First Ethos = carnivore axis</li> <li>• First Joke:' hit the baboon head' anvil (drill cupules)</li> </ul>
<p>Acheulian (<i>sensu lato</i>) EA ~1.7 to 1.0 Ma MA ~1.0 Ma to 500 ka LA ~650 to 200 ka FA ~300 to 150 ka</p>	<p><b>Complex Idea Modeling</b> = <i>Homo erectus/ergaster</i> (out-of-Africa)</p> <ul style="list-style-type: none"> <li>• Biface pairing of complementary shapes (<i>contraria sunt complementa</i>, Niels Bohr; <i>coincidentia oppositorum</i>, C. G. Jung; 'co-poiesis', Bracha Ettinger)</li> <li>• Sheath, the Womb Source of Animacy (Life-Giver) &amp;</li> <li>• Vehicle, Cutting Spirit, Energy of Initiative (Death-Giver)</li> </ul>
<p>Middle Paleolithic / Middle Stone Age EMP ~300 to 40 ka MMP ~150 to 60 ka LMP ~60 to 30/35 ka</p>	<p><b>Mythic I &amp; II</b> EMP = <i>archaic Homo sapiens</i> / MMP = <i>Homo sapiens sapiens</i> (out-of-Africa)</p> <p>I. 'Gaia' (Witzel 2010) = Khoisan II. 'Gondwana' (Witzel 2010) = 'Southern Route' Africa to SE Asia &amp; Australia</p>
<p>Upper Paleolithic / Later Stone Age EUP ~60 to 150 ka MUP ~40 to 20 ka LUP ~25 to 10 ka</p>	<p><b>Mythic III</b> = <i>Homo sapiens sapiens</i> (out-of-Asia) 'Laurasian' (Witzel 2010)</p> <ul style="list-style-type: none"> <li>• 3/6 'Shamanic' Worlds</li> <li>• Soul Journey, Soul Retrieval</li> <li>• Mother-of-Animals, Master-of-Animals</li> <li>• UP(E) array of 12 female and 12 male spiritual transformations (Harrod 1987, 1997)</li> </ul>

First it's important to note that there is stage of hominin tool-making prior to the arrival of *Homo habilis* or *Homo rudolfensis* on the scene with their Oldowan tool technology. There is evidence that *Australopithecines* were the first to employ the technique of lithic reduction to remove flakes useful for cutting (e.g., Bouri, ~2.5 Ma, where flakes are associated with *A. garhi* and Dikika, ~3.4 Ma, *A. afarensis*).

We can hypothesize the cognitive, communicative, symbolic and ritual capacity of these early hominins by triangulation between *Homo* and chimpanzees to the common great ape ancestor.

(Note. I have an article in peer review, *Journal for the Study of Religion, Nature and Culture* which in part one, develops a trans-species definition of religion, and in part two applies the structuralist method to identify and 'prove' that chimpanzees have ritualized religious behaviors, and the basic database for it is online at Originsnet.org.)

The first archaeological symbolic artifact to note is the red jasperite cobble from Makapansgat, South Africa, ~2.0 Ma, associated with *A. africanus*, a natural and manuported (curated) 'figurine of many (3) faces, possibly representative of three life-stages, infant, adult, old age' (*DR1974; BR2003*). Given our current state of knowledge, this is the earliest instance of art, an object of 'found art'. I suggest it implies themes that include: 'gaze', 'face'; 'poignancy of the life-stages and mortality', and especially the sense of 'animacy', 'this stone is alive', suggesting the 'animated spirit that inhabits this body' and, in a sense, the *élan vital* (Bergson).

(Note: from the perspective of neuroscience this object activates the neural substrates for 'animacy', 'eye-gaze', 'face perception' and 'biomotion', especially, 'interactive human animacy-in-relationships'. The existence of such a substrate and its manner of activation calls into question—I might even say refutes—sceptical reductive theories of religion as some sort of pareidolia or 'looking at clouds' or simply the result of mistaken reasoning when confronted by perceptual ambiguity, while not denying that mistaken reasoning not infrequently occurs in various religious or spiritual traditions.)

I would like to suggest that rather than terms such as 'religion' or 'spirituality', 'mind' or 'psyche', when it comes to attempting to grasp the communicative behavior and communicative message of the early stages of symbolic evolution we might keep in mind this Australopithecine or 'pre-Oldowan' thematics of 'animacy', which we can ground in specific neural substrates.

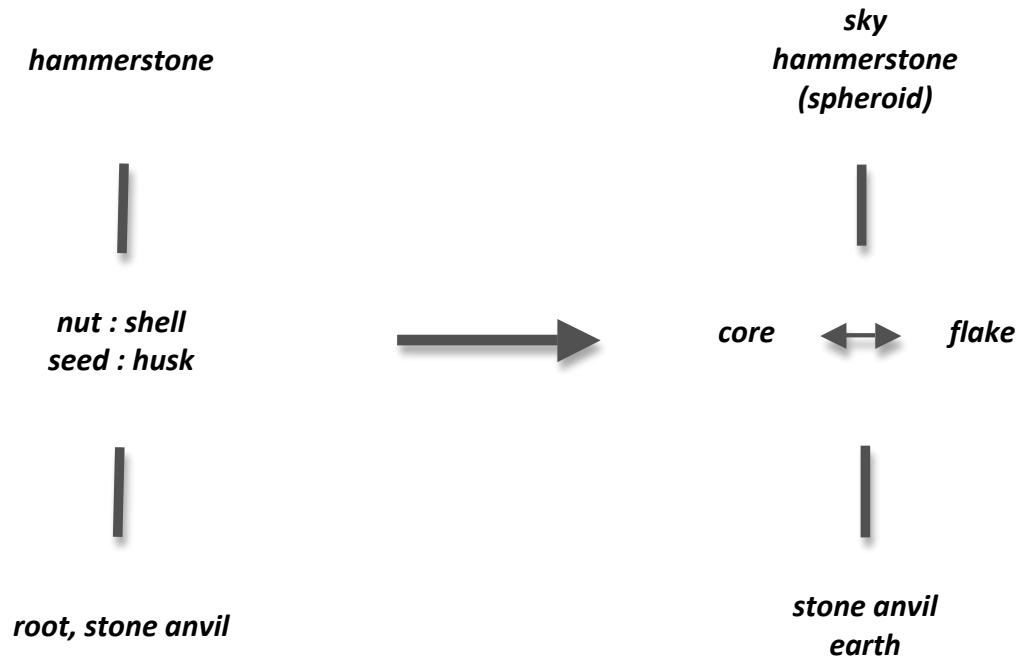
**The 1st Meme: Oldowan: Conceptual-Symbolic Modeling.** For want of a better label, I tentatively call the first meme, Conceptual-Symbolic Modeling. It is associated with *Homo habilis/rudolfensis*, the ‘Classic’ Oldowan tool industry and the first major global dispersal of *Homo* out-of-Africa. Admittedly the evidence is limited currently to about a dozen examples—although these can be illuminated further by what appear to be later survivals of the same themes. I suggest we can differentiate the first meme into three sub-memes, so-to-speak, to capture its various thematics. I label these the First Metaphor (or, more precisely, the First Diaphor), the First Value Axis, and the First Joke (or Cartoon). I don’t think I go to far to suggest that this is the beginning of some of the earliest and most ‘fundamental’ themes in the evolution of mythology.

Meditating upon a manuported/curated Oldowan pebble core from Koobi Fora, Kenya, ~1.9 Ma, that contains a ‘found/by-product of flaking’ rhomboid or diamond shape in its ‘core’, I have proposed (Harrod 1992) that it is a manifestation of the First Metaphor or Diaphor, which I now term the First Meme (*Table 3*). This First Diaphor (a) has as its referent a sensitivity to an ‘animacy’ that has a microcosmic or macrocosmic and/or simultaneously ‘interpersonal’, ‘dyadic’ and ‘co-poetic’ (the latter in the sense defined by the philosopher Bracha Ettinger) (perhaps undifferentiated) ‘habitation’ or ‘inhabitation’ ‘within and without’, ‘within the body, or, especially, within the embodiment of mutual intimacy’ and (b) characterizes this sense of animacy ‘as’ (hermeneutical ‘as-structure’) ‘the root-core-seed-sustenance-essence’, which is accessed by intentional work (labor). In that study I also amplified it as the ‘rhomboid of the mind’.

(Note. In terms of psychotherapeutic concepts we might think of this as the first diaphor of ‘the self’ or philosophically as the first diaphor of *ousia* (existence, being, becoming). Its neural substrate would thus be the medial prefrontal cortex, which is the substrate for concepts of the self, self-image, self-relatedness, and so on. Research is needed on early hominin brain development to ascertain the evolution of this brain region and accordingly the validity of this hypothesis.)

The illustration of the basic elements of this and subsequent memes in the table format is intended to emphasize several features of what I am designating a ‘meme’. First, a meme is a transformation, indicated by the large arrow. The elements on either side of the arrow indicate that each ‘meme’ represents a transformation between the new creation (innovation) mapped onto a chronologically earlier structure, which is retained in the background, so to speak, and is a component of the overall meme. Second, the memic transformation involves a transformation from one intrinsic vertical axis to the new one as well as horizontal dynamic complementarities, indicated by smaller two-headed arrows. Each element may be thought of as a ‘symbol’ in the overall ‘symbolism’ or symbolic gestalt of the ‘meme’. The relations between parts and whole may involve one or more analogical metaphors and intuitional diaphors. In the case of Meme #1A, core and flake are analogical to seed and shell but also diaphoric to a feeling-toned value-stance, and this stance *ab initio* is an embodied stance and passage between sky and earth.

**Table 3. Meme #1A Oldowan: The First Metaphor or Diaphor**  
**'core-root-seed-sustenance-essence + animacy-in-mutual-intimacy'**



Drawing on palaeoanthropology (Blumenschine 1987, 1995; Carvallo & Blumenschine 1989; Arribas 1999; Arribas & Palmquist 1999; Echassoux 2009; Domínguez-Rodrigo 2001; Boehm 1999), I have also been working on a hypothesis for how the Oldowan carnivore niche implies a hierarchical axis or ‘pecking order’ of carnivores and that this may have provided another sub-meme, which we might call something like the First Ethos which would have hierarchical nodes of competition & beneficence, a ethos of human-carnivore/scavenger interaction, and an evolved concept and praxis of distributive justice and empathic sharing (*Table 4*). It seems to me that this memic system is generative of an array of mythologems and I have identified some possible ‘survivals’ in later mythological traditions (as well as later evolved species).

<b>Table 4. Meme #1B Oldowan: The First Ethos</b>		
	<b>The Carnivore Niche Hypothesis: Pecking Order</b>	<b>Mythic Survivals of Oldowan Carnivore and Scavenger Characters</b>
<b>‘the human’</b>	<b><i>Homotherium</i></b> scimitar-tooth cat, long-legged pursuit predator, presumably left large amounts of carrion → lion	Ruleress and Ruler Providence and Justice Solar
	<b><i>Megantereon</i></b> dirk-tooth cat, short powerful forelimbs; ambush, drag & tree cache predator, presumably left large amounts of carrion → leopard	Passage thru Night Initiatory Healing Bringer of Rain and Fertility
	<b><i>Vulture</i></b> scavenging bird	Seer Co-Creation of Humanity Self-Sacrificial Nurturer
	<b><i>Canis etruscus</i></b> small, hunter-scavenger → jackal, coyote, wolf	Trickster Lord of the Dance
	<b><i>Xenocyon falconeri</i></b> large hunter-scavenger, large packs → African wild dog	Psychopomp Hungry Ghost/War Realm
	<b><i>Pachycrocuta</i></b> giant bone-crushing scavenger, leaves nothing → hyena	Deflesher & Devourer of Bones Demon Realm Androgyne (Gender Fluidity)

(Note. Its neural substrate would thus be the anterior insular cortex, which is the substrate for concepts of distributive justice, *vipassana* meditation, and so on. Research is needed on early hominin brain development to ascertain the evolution of this brain region and accordingly the validity of this hypothesis.)

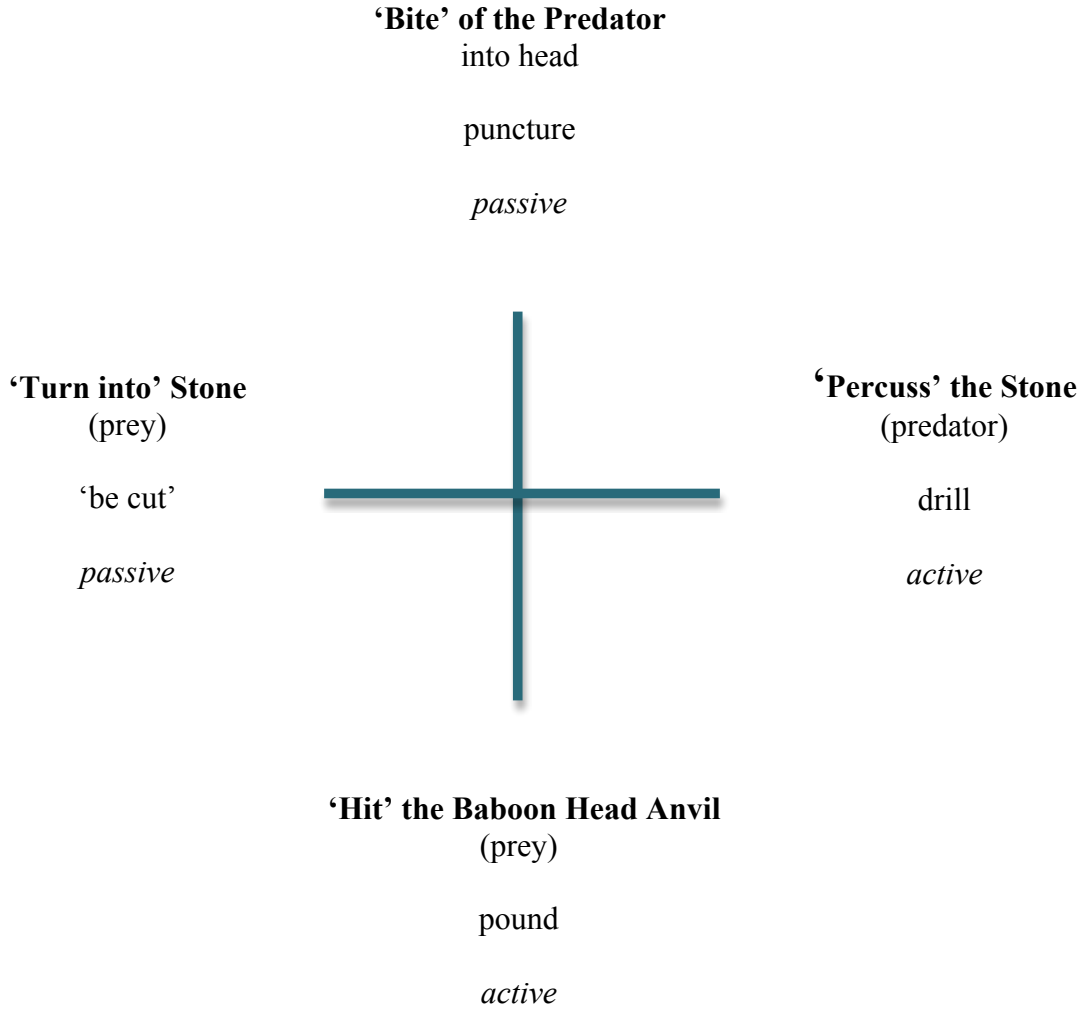
At first I developed this schema simply as a hypothesis, one with predictive value and one which seemed to accord with later African mythology. Only this year has witnessed publication of the first evidence from a site (Colne Valley Assemblage, UK ~900 ka, Developed Oldowan industry, discoverer Richard Wilson) with probable figurative stone sculptures ('figure stones'), one of which appears to be an intentional representation of a *Homotherium* and mammoth at opposite sides of the object (*WR2010*), a complementarity of predator and prey, and, as I suggest, also a representation of the hominin scavenging niche and the ironic or paradoxical providence of one of the most dangerous of Oldowan felines.

The first—and very tentative—suggestion for interpreting representative imagery in the Oldowan was that of Mary Leakey who commented on a grooved and pecked phonolite cobble anvil stone, with 4 + 2 pecked indentations (small 'cupules'), suggesting it had the vague appearance of a baboon head, Olduvai Gorge, FLK North, Level 1, Upper Bed I, 1.75-1.76 Ma, Classic Oldowan (*LM1971*).

The metaphorical joke (cartoon) interpretation, 'hit the baboon-head + anvil of creative innovation', I credit to a colleague Jan Evert Musch. To this I suggest adding a mythic level of interpretation, 'how to cope with baboons', an enduring problem for those engaged in cultural creativity. I have attempted to work out the symbolism of which this motif is one component. The result is a third sub-meme, which I tentatively label the First Joke (Entertainment). To fill out the complementarities of the transform, I suggest that the opposite of 'hit the baboon head' is the motif of a sharp-toothed predator biting into one's head—recall the widely publicized image of the puncture holes in the skull of a Swartkrans hominin (Brain 1981). The pecked indentations on the Olduvai 'baboon head' anvil provide a third motif, and a fourth opposite motif follows from the overall poetic logic. Thus, this transform seems to have four complementary nodes and at its 'center' it feels to me like this whole transform is evocative of 'how to evolve with humanness in the pathos of this life (or Gaia)' (*Table 5 and Table 6*).

(Note. As involving the danger of predatory devourment, this meme would correlate to the neural substrate of the amygdaloid area, which is the substrate for psychodynamic drives in the context of survival fears. Research is needed on early hominin brain development to ascertain the evolution of this brain region and accordingly the validity of this hypothesis. Aside: the three distinct brain areas, which appear to correlate to the three Oldowan sub-memes, are the same three neural substrates that appear to me to correlate to the three types of anxiety (retaliatory anxiety, existential death anxiety and predation anxiety) delineated in the psychotherapeutic model of Robert Langs; these also correlate to three of the six primary neural substrates of dreaming.)

**Table 5. Oldowan Meme #1C: First Joke (Entertainment)  
'Hit the Baboon Head Anvil' or 'How to Cope with Baboons'  
and 'the Evolving Human & the Pathos of Gaia':  
Derivation of Fourfold Complementarity Transformation**





<b>Table 6. Oldowan Meme #1C: First Joke (Entertainment)</b> <b>‘Hit the Baboon Head Anvil’ or ‘How to Cope with Baboons’<sup>1</sup></b> <b>and ‘the Evolving Human &amp; the Pathos of Gaia’</b>		
<b>Motif</b>	<b>Technique<sup>2</sup></b>	<b>Thematics</b>
<b>‘Bite of the Predator’</b> into head <sup>3</sup>	Be pierced, punctured <i>passive</i>	Devourment of self, death as devourment (survival of the fittest; amygdala fear) – and conversely: Self-Offering
<b>‘Hit the Baboon Head Anvil’<sup>4</sup></b> (prey)	Pound beat <i>active</i>	First joke, humor, retaliatory displacement (Freud, ego defense) – and conversely: Laugh to cope with propensity to scapegoat, injure, harm; and in response to the ‘primal horde’ (Freud) <sup>5</sup> , ‘collective’ pack against creativity, difference and transformation (Canetti) <sup>6</sup> and evolution <sup>7</sup>
<b>‘Turn into Stone’</b> (prey)	Be cut, sliced <i>passive</i>	Become dead, inert (inertia); numb, not-feeling, cold, cold-hearted, isolated, solipsistic, cruel, like stone; even turn against self (A. Freud, identification with the transgressor) – and conversely: Compassion
<b>‘Percuss the Stone’</b> (predator)	Peck dig, drill <i>active</i>	Retaliatory revenge, ‘get a dig’ into another – and conversely: Contact reality <sup>8</sup> , opacity of stone <sup>9</sup> , hardness of this suffering life <sup>10</sup>
<b>(center)</b>		Listen to the ultimate ‘command’ or ‘commandment’: Evolve beyond ‘the sting of command’ <sup>11</sup> ; toward social justice (festal share, powder dust as ‘the salvific residue’); expressed possibly by a ritualized dance combining staccato (rhythmic beat) and sway, percussive and lyric characteristics, perhaps in some form of ‘spin, rotate, spiral’ <sup>12</sup>
Notes 1-12. See detailed notes attached.		

<sup>1</sup>Compare hypothetical mythic survival: Bushmen myths of Mantis and the Baboons.

<sup>2</sup>Compare concepts of embodied gesture-technique and ‘tool significance’ drawing on Marcel Mauss ‘body technique’ and Leroi-Gourhan ‘elementary actions on matter’ (Joulian, F. 2005. Significant tools and signifying monkeys. In: Francesco d’Errico and Lucinda Backwell (eds) *From Tools to Symbols: From Early Hominids to Modern Humans*. Johannesburg, Witwatersrand University Press.

<sup>3</sup>Swartkrans cave hominids, 1.0-1.8 Ma, leopards kill hominids by biting skull, two puncture holes in skull and dragging away to cache/den (Brain, C. K. 2005. Essential attributes of any technologically competent animal. In: *ibid*: 41-42 and citing Brain, C. K. 1981 and Newman 1993).

<sup>4</sup>Grooved and pecked phonolite cobble, with 4 + 2 indentations, ‘perhaps anvil, vaguely like a baboon head’; Olduvai Gorge, FLK North, Level 1, Upper Bed I, 1.75-1.76 Ma, Classic Oldowan (Leakey, M. D. 1971. *Olduvai Gorge, Volume 3: Excavations in Beds I and II, 1960-1963*: pl 18. Cambridge, At the University Press. Compare mass slaughter of 90 *Theropithecus oswaldi* baboons at Olorgesailie, ~800ka, killed by blow to skull, which they infer to be some sort of prey specialization or ritualized killing (Shipman, P., Bosler, W., and Davis, K. 1981. Butchering of Giant Geladas at an Acheulian Site. *Current Anthropology* 22,3: 257-268.

<sup>5</sup>Compare S. Freud, ‘superego’ and ‘primal horde’.

<sup>6</sup>Elias Canetti, *Crowds and Power*.

<sup>7</sup>Compare chimpanzee group’s slaughter of a separatist group (Goodall, J. 1986. *The chimpanzees of Gombe: Patterns of behavior*. Cambridge, Harvard University Press), which I suggest interpreting, in addition to some sort of competitive aggression, as ‘anti-speciation’ (spin-off of a daughter species) or ‘anti-evolution’ behavior.

<sup>8</sup>Compare F. Nietzsche: ‘spirit is that which cuts into life’.

<sup>9</sup>‘Opaqueness and hardness of stone’ as a hierophany, Eliade, M. 1958. *Patterns in comparative religion*: 216. New York, World; 1959. *The sacred and the profane: The nature of religion*: 12-13. New York, Harper and Row.

<sup>10</sup>‘Opacity of suffering of the marginalized and oppressed; the hardness of life, the world appearing as stone, the experience of the oppressed’s own identity as opaque’ versus the consciousness that confronts this, the will in opposition, similar to Hegel’s notion of the lithic imagination’, Long, C. H. 1986. *Significations: Signs, symbols, and images in the interpretation of religion*: 178-197. Philadelphia, Fortress.

<sup>11</sup>Compare themes of the ‘collective’ and ‘the sting of command’ in Canetti, E. 1962. *Crowds and Power*. New York, Viking.

<sup>12</sup>These two themes occur as two variable features of chimpanzee ritual display, namely ‘foot stamping’ and ‘swaying’. Compare the ‘staccato’ and ‘lyric’ dance movement Roth, G. 1989. *Maps to ecstasy: Teachings of an urban shaman*. Novato, CA: Nataraj. Roth emphasizes five basic ‘sacred dance’ rhythms--actually six, counting the initial act of centering. Dance moves from centered stillness and meditative breathing to ‘flowing’ like a sea of waves; ‘staccato’ with repetitive jerking, jabbing, pounding movements; ‘chaos’, a vibrantly alive, trance-like, gyrating and hands flying; ‘lyrical’, light, feathery, graceful looping, swirling, waltzing; and finally a return to ‘stillness’, the fullness of being alive, radiant, transformed, ecstatic. These moments of dance are remarkably similar to the themes of UP(E), with stillness corresponding to “Center!”; staccato to “Contact irrupting sacred energies”; lyrical to “Branch and unfold!”; and flowing to “Flow!” (Harrod 2004/1998/1987 online originsnet.org/publications). Perhaps, we might add a 3<sup>rd</sup> theme: ‘leaping, leap, fall, jump up’ actions, which might be viewed as falling under Roth’s ‘chaos’ dance movement. Compare ‘*élan vital*’, Bergson; astronomical asterism Three Leaps of the Gazelle (‘paws of Bear’, ‘Big Dipper’), which rotates around the celestial north pole.

Given the sophisticated incipient depth and complexity of the Oldowan meme(s), the remainder of human symbolic evolution seems on the one hand a mere afterthought but on the other it provides the root meme(s) for subsequent memic transforms.

**The 2<sup>nd</sup> Meme: Acheulian: Complex Idea Modeling.** For want of a better label, I tentatively call the second meme, Complex Idea Modeling. It is associated with *Homo erectus/ergaster*, the Acheulian or contemporary tool industries and the second major global dispersal of *Homo* out-of-Africa. During this period there is a quantum leap in examples of symbolic behavior with 13 from the Early and Middle Acheulian Periods and over 50 from the Later and Final Acheulian Periods.

<b>Table 7. 2<sup>nd</sup> Meme of the Evolution of Art, Symbol &amp; Myth</b>	
<b>Era and Techné</b>	<b>2<sup>nd</sup> Meme: Complex Idea Modeling = <i>Homo erectus/ergaster</i></b>
<p>Acheulian (<i>sensu lato</i>) EA ~1.7 to 1.0 Ma MA ~1.0 Ma to 500 ka LA ~650 to 200 ka FA ~300 to 150 ka</p>	<p><u>Early Acheulian Period</u></p> <ul style="list-style-type: none"> <li>• Play of complementary opposed shapes; art as geometric play</li> <li>• First 'idea' as complementarity of abstract (geometric) : concrete (biomorphic) :: similarity : difference</li> <li>• 'The medium is (part of) the message'—'cutting into stone and bone'</li> </ul> <p><u>Middle Acheulian Period</u></p> <p>Mode I ('Developed Oldowan') bipolar reduction (worldwide) Mode II Middle Acheulian biface shape pairs (e.g., E Africa: 'handaxe' &amp; cleaver; SW Asia: 'handaxe' &amp; trihedral pick)</p> <ul style="list-style-type: none"> <li>• Stereotypical pairing of complementary shapes (<i>contraria sunt complementa</i>, Niels Bohr; <i>coincidentia oppositorum</i>, C. G. Jung; 'co-poiesis', Bracha Ettinger)</li> </ul> <p>= Sheath, the Womb Source of Animacy (Life-Giver) &amp; Vehicle, Cutting Spirit, Energy of Initiative (Death-Giver) (Harrod 2003, 2002 online)</p> <ul style="list-style-type: none"> <li>• Figurative sculpture art flaked zoomorphic, anthropomorphic, geometric and polymorphic sculptures, esp. in Mode I traditions</li> </ul> <p><u>Later Acheulian Period</u></p> <ul style="list-style-type: none"> <li>• Complex ideographic marking or glyph traditions, e.g., cupule, undulating line, strokes, chevron, radiating ('fan motif') and convergent lines, embedded rectangles or 'lattice of space' (Harrod 2007a 'Bhimbetka Glyphs' compared to Kandinsky; Harrod 2007b, 2004 online) use of golden ratio (Feliks 2008, Feliks 2007), (e.g., Bilzingsleben, Germany; Bhimbetka and Daraki-Chattan, India)</li> <li>• Regional traditions (Mode I and Mode II) of figurative sculpture art: decorated handaxes; flaked zoomorphic, anthropomorphic, geometric and polymorphic sculptures (worldwide)</li> </ul>

*Table 7* highlights key themes for each of the three major sub-periods—each about 500,000 years—of the one-and-a-half million year Acheulian time period. As I view it, Early Acheulian bifaces appear to be produced in an aesthetically playful way. The artisan seems to be applying a play of complementary opposed shapes, such as concave/convex, straight/curved, and so on. My view contrasts with the oft-asserted judgment that Early Acheulian bifaces are crude and often asymmetrical compared to those of later eras; I suggest that we might call these bifacial cores ‘art as geometric play’. I get the sense that these flint knappers feel a delight in their capacity to produced symmetries and asymmetries of opposing geometric shapes as they work the stone.

I am also suggesting that in exercising this capacity with its awareness of pure geometric shape oppositions that can be applied to a stone core, the Early Acheulian knappers would appear to have conceptualized the first ‘idea’, by which I mean a conscious apperception informed by the complementarity ratio (analogy) between abstract (geometric) form versus concrete (biomorphic) form which simultaneously includes the fundamental philosophical concept opposition of similarity versus difference.

I further suggest that this implies that already these knappers and their audience have a notion that ‘the medium is (part of) the message’, the ‘concrete/biomorphic’ material itself takes on significance, and one may sense a feeling-value, which might go by the rubric ‘cutting into stone’ or ‘cutting to the bone’. Is there any evidence yet to support this? In one sense, the Early Acheulian bifaces evidence this, that something as recalcitrant as ‘stone’ can be given delightful permutations of playful geometric shapes. If the dating is confirmed and the interpretation, I offer the incised markings on bones at Kozarnika Cave, Bulgaria, ~1.4 to 1.6 Ma, as not only intentional markings of sets of stroke marks, each with a different count, apparently 2, 3 and 4 strokes per set (*GA2004; SN2010*), but also by implication an awareness of the medium itself qua bone, and, so to speak, ‘cutting to the bone’. Again, along these lines, it is interesting that we seem to have evidence of the first mortuary practices, Sterkfontein, ~1.4-1.7 Ma, *Homo habilis* remains with stone tool cutmarks, indicating ‘post-mortem manipulation of hominid carcasses’ (*PT2000*) and Gran Dolina, Atapuerca, 780-858 ka, Developed Oldowan, where human bones are butchered and consumed similarly to animals, suggesting cannibalism, though the archaeologists assert a blanket denial (based apparently on nothing but whimsical speculation) that this cannot be associated with any kind of ritual behavior (*FY1999*).

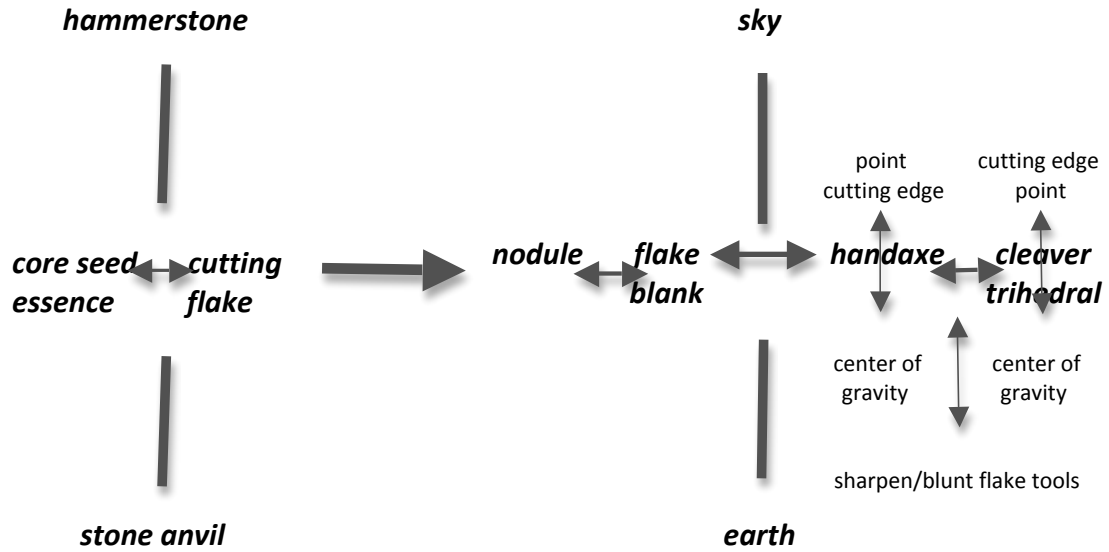
The 2<sup>nd</sup> major wave out-of-Africa occurred in the Middle Acheulian period, around 1 million to 500,000 years ago, when *Homo erectus/ergaster* dispersed across SW Asia through South Asia to East Asia and into Europe and even northern Asia carrying an Acheulian package with its distinctive stone tool industry and symbolic behaviors.

While the Oldowan tool technology was primarily one of flaking a pebble core to produce flakes for cutting, the Acheulian tool technology innovates a two step process in which flakes, sometimes large, are broken off of boulders yielding a blank that is then worked to remove flakes to be used as tools. The Middle Acheulian is characterized by standardization of blank shape and reduction techniques—which have regional styles—and more regularized handaxe shapes (cordiform, amygdaloid, lanceolate, oval), cleavers with bits made using a single flat surface scar, trihedral picks, and retouched flake tools, mostly denticulates, notches, scrapers. Usewear and residue analysis shows that the straight edges of bifacial cores were also used as multipurpose tools for defleshing and carving meat, cutting grasses and other vegetation, including some species that we know are still used in medicinal ways and for plaiting nets and bags, and working wood. Sharp flakes were used for similar purposes. In the macho terminology of some archaeologists the tool functions are described as ‘butchery and woodworking’, but it is clear from findings of usewear and residue analysis and higher frequency of bifaces at habitation sites than short-term kill or butchery sites that bifacial core usage may have been gendered more female than male. During the Middle Acheulian time period Developed Oldowan type assemblages continue and this appears to reflect in some cases different cultural groups and in others expediency.

The Middle Acheulian continues the collection and manuporting of exotic objects, such as fossils and quartz crystals; has the earliest convincing instance for the use of pigments; and evidences at least one instance of an anthropomorphic figure-stone, Tan-Tan, Morocco, >500 ka, which also has applied colorant (*BR2001*; *BR2003*).

There is an interminable debate among paleoanthropologists over whether or not some bifaces may have been employed in symbolic behavior and if so for what purpose. I have suggested (Harrod 2002 posted on Originsnet.org) and here re-emphasize my hypothesis for how, during the Middle Acheulian, prototypical biface shapes, especially ‘handaxe’ and ‘cleaver’, could have been used to symbolize complex ideas about complementarity aspects of life—and the life-force—including a tension of opposites between the forces of birthgiving (being born) and death-wielding, and so on. In brief, I take the archaeological data to show—for example a statistical analysis by Glynn Isaacs (*IG1977*) on the bifaces of Olorgesailie, Kenya, ~800 ka—that among the variety of shapes produced at various sites, two shapes, ‘handaxe’ and ‘cleaver’ predominate. At some sites in SW Asia it appears to be ‘handaxe’ and ‘trihedral pick’. I have proposed that in addition to their everyday tool uses, handaxe and cleaver jointly could have been viewed as having a semiotic competence and that they could have functioned to symbolize a pairing of complementary ideas or principles (*contraria sunt complementa*, Niels Bohr; *coincidentia oppositorum*, C. G. Jung; ‘co-poiesis’, Bracha Ettinger), which I decipher as ‘Sheath’ and ‘Vehicle’. On the one hand, a handaxe may be used to symbolize ‘sheath-like coverings that protect and nurture like a womb-source for that which is to be born’, the ‘womb-source of animacy’ and a Life-Giver; and, on the other, a cleaver, ‘vehicle-like support for and carrier of movement forward’, ‘cutting spirit, the energy of initiative’ and a Death-Giver. This is highlighted in *Table 8*.

**Table 8. Meme #2B Middle Acheulian: Idea Complex Model**  
**= 'Lattice of Space'**  
**'Sheath, the Womb Source of Animacy (Life-Giver) &**  
**Vehicle, Cutting Spirit, Energy of Initiative (Death-Giver)'**

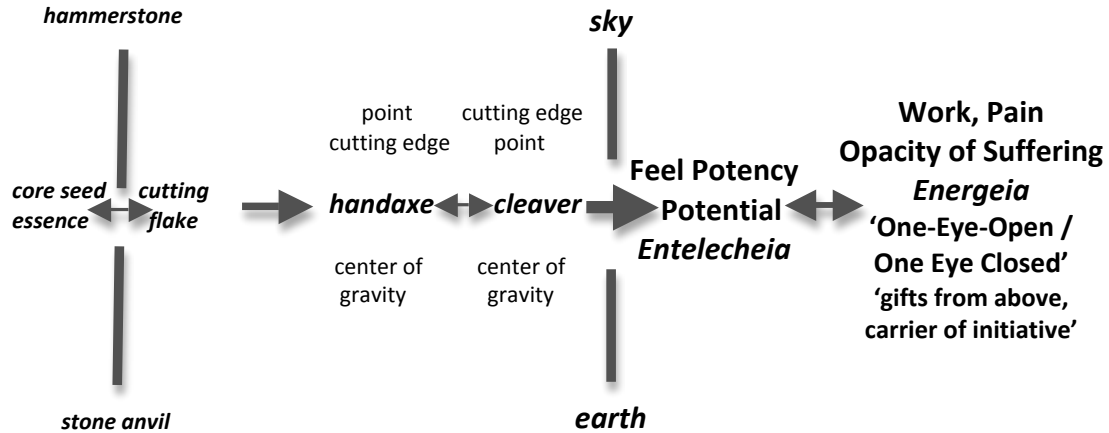


Again I have attempted to indicate by this meme diagram how a new ‘memic’ innovation becomes more decipherable if one takes into account—and into the ‘meme’—the prior technological mode. In this case we see how the Middle Acheulian meme builds upon or evolves out of the Oldowan meme, which continues to inform it as its ‘background’. In symbolic terms, the Oldowan ‘value-idea’ of the ‘core-seed-sustaining-essence’ informs the Middle Acheulian symbolism, which we might now view as a non-linear bifurcation of the ‘essence’ into two complementary ideas (‘binary opposition’) of essence or essential value, each with their own ‘center of gravity’ and ‘point/edge’.

While one might think my hypothesis outrageously far-fetched and speculative, I suggest that what we see in the Later Acheulian archaeological record of symbolic behavior confirms, in my humble opinion, this ‘reading’ of the Middle Acheulian symbolism.

The Later and Final Acheulian shows another quantum leap in instances of symbolic behavior; I have noted in the Appendix table at least 50 sites with examples of artifactual evidence, a veritable ‘creative explosion’. Collection of exotic objects continues, the number of sites with evidence of colorant use increases, and the earliest validated evidence for self-adornment (‘beads’) occurs. Complex marking traditions on bone and stone occur in India at Bhimbetka (cupules and meandering line) (*BR2005, KG1996*)—I have compared this petroglyph to Figure 1 in Kandinsky’s *Point and Line to Plane* (Harrod 2007)—and Daraki-Chattan with its over 500 cupules (*BR2005, KG1996*). At Bilzingsleben, Germany, *Homo erectus* incised multiple bone and stone objects with very sophisticated markings that appear to mimic the shape of the medium (*MD1988; SL1999; BR1995; BR1988*); and involve sets of tally counts, an invisible point-source for radiating fan-like lines and use of a straight-edge, and application of the ‘golden ratio’ to arrange marks and geometric shapes (*FJ2008, FJ2007*). ‘Checkerboard’, ‘crisscross’ or ‘net/lattice’ patterns occur at Pampau, Germany and Blind River Mouth, South Africa. We have at least one generally accepted example of a ‘female’ figurine, Berekhat Ram, Israel, 470±8 ka. To this I would add that we have dozens of other Later Acheulian period sites—not yet accepted by ‘mainstream’ archaeologists—that appear to have so-called ‘figure-stones’, stones intentionally more or less modified to represent anthropomorphs and zoomorphs identifiable by species. Later Acheulian knappers also appear to have ‘decorated’ bifaces, combining aesthetic aspects of geometric shapes and anthropomorphic and zoomorphic figurative representation. The artisans appear to have combined multiple representations in one polymorphic artifact, which suggests innovation of complex mythological and/or totemic symbolism (*Table 9*). The archaeological record also continues to evidence mortuary practices, specifically postmortem defleshing, Bodo, Ethiopia 550-640 ka (*WT1986*); Herto, Ethiopia, 147-162 ka (*WT2003; CJ2003*) and (secondary) deposition or caching of bones, Galeria, Atapuerca, Spain, ~350 ka, where a finely flaked and retouched red-brown quartzite amygdaloid biface was deposited with bones, ‘possible symbolic behavior, mortuary ritual offering’ (*CE2003*) and Pontnewydd Cave, Wales, ~195-251 ka (although provenance might be Mousterian) (*PP2002/1*). (See Appendix table for more examples and details.)

**Table 9. Meme #2C Later Acheulian: Idea Complex Model**  
**'Sheath, the Womb Source of Animacy (Life-Giver)**  
**→ Seed Potency, Potentiality and Entelecheia' &**  
**'Vehicle, Cutting Spirit, Energy of Initiative (Death-Giver)**  
**→ Manifest Work-in-Reciprocity, and Energeia'**



I suggest that from the Middle to Later Acheulian period, the complementarity symbolics of handaxe and cleaver has become even more refined. The Middle Acheulian handaxe, which may be associated with a thematics of 'Sheath, Womb-Source of Animacy (Life-Giver)', appears to take on an added level of meaning, which I interpret as 'Seed Potency, Potentiality, and *Entelecheia*' (taking the latter term from the usages of Aristotle and C. G. Jung). Similarly, the cleaver's 'Vehicle, Cutting Spirit, Energy of Initiative (Death-Giver)' gains an added level of meaning: 'Manifest Work-in-Reciprocity, and *Energeia*' (again taking a term from Aristotle and Jung's notion of psychic energy). I have diagrammed key features of the Later Acheulian meme in *Table 9*.



<b>Table 10. Meme #2C Later Acheulian: Combination Polymorphic Symbolism = Mythologems?</b>	
‘Decorated Bifaces’ (handaxe)	
Biface + Embedded Geometric Shape (‘eye’, lattice)	<ul style="list-style-type: none"> <li>• la Morandière, Gièvres, Loire</li> <li>• Grotte de l’Observatoire, Monaco</li> </ul>
Biface + Embedded Geometric (fossil ‘rays’, ‘womb’ marking + ‘Female Birthgiver’)	<ul style="list-style-type: none"> <li>• Swanscombe Middle Gravels</li> <li>• West Tofts</li> <li>• Cys-la-Commune (<i>JBH</i>)</li> <li>• Galeria, Atapuerca, red biface ‘mortuary ritual?’</li> </ul>
Biface + Face/Mask	<ul style="list-style-type: none"> <li>• Wolvercote;</li> <li>• Boukoul and Beegden (<i>Jan van Es</i>)</li> </ul>
‘Figure-Stones’	
Predator + Human + Geometric + Prey	<ul style="list-style-type: none"> <li>• Swanscombe Middle Gravels</li> </ul>
Human + Animal (lion, etc.)	<ul style="list-style-type: none"> <li>• Hamburg-Wittenbergen</li> <li>• Pampau (<i>Ursel Benekendorff</i>)</li> <li>• Boukoul and Beegden (<i>Jan van Es</i>)</li> </ul>
Mask Face: One Eye Open and One Eye Closed	<ul style="list-style-type: none"> <li>• Hamburg-Wittenbergen</li> <li>• Pampau (<i>Ursel Benekendorff</i>)</li> <li>• Boukoul (<i>Jan van Es</i>)</li> </ul>
Elephant (or mammoth) + female (vulva) + egg (sun) ± bird ± lion	<ul style="list-style-type: none"> <li>• Boukoul and Beegden (<i>Jan van Es</i>)</li> <li>• Clacton (<i>Simon Parkes</i>)</li> </ul>
Male + Female, ‘Kissing couple’ (?)	<ul style="list-style-type: none"> <li>• Hamburg-Wittenbergen</li> <li>• Pampau (<i>Ursel Benekendorff</i>)</li> <li>• Boukoul and Beegden (<i>Jan van Es</i>)</li> </ul>
Male + Female + 2 or more Animals	<ul style="list-style-type: none"> <li>• Warlingham, Surrey, ‘marriage licenses’ (<i>Ron Williams</i>)</li> <li>• Pampau (<i>Ursel Benekendorff</i>)</li> <li>• Boukoul and Beegden (<i>Jan van Es</i>)</li> </ul>
Note. Artifacts without reference are cited publications in Appendix table of global symbolic behaviors; names in <i>italics</i> are collectors/interpreters of artifacts from erosion, quarry or surface sites that have tentative and rough geological dating and these sites are also listed in the Appendix.	

Despite supposed ‘official’ rejection of large assemblages of artifacts—and their interpretations—from collectors in Northwest Europe—collections with which I have familiarity—and despite apparently intentional ignorance of the extensive Walter Matthes published finds from Hamburg-Wittenbergen sites, I have combined all these with more well-known and archaeologically accepted artifacts, such as those from Swanscombe, to derive *Table 10*. Consider this table a working hypothesis that yields testable predictions for finds and themes yet to be made at other sites. What’s important for now is to note that it appears that may be extensive evidence for mythological imagination during the Later Acheulian period.

If one accepts the identification of decorated bifaces and figure-stones as I do, it is but a step to begin sorting out repeated, stereotypical representations into categories. Since binary oppositions and differential features bolster semiotic capacity, polymorphic objects will be of special interest. In *Table 10* I itemize some categories of polymorphs along with Later Acheulian sites that exemplify them. Some of the polymorphs are such as to suggest they may have mythological referents.

Bifaces decorated with possible ‘womb’ symbols may represent some sort of Creatrix or Life-Giver. At least to our present sensibilities, depictions of a face/mask having ‘One Eye Open / One Eye Closed’ seem to evoke themes of ‘outer and inner seeing’, ‘inner *angst*’ and ‘the opacity of suffering and pain’. (I actually ‘blind rater’ tested this by quizzing a professional actor about what he ‘saw’ in one such stone.) Such an interpretation gains plausibility in the light of at least one occurrence of a cleaver from SW Asia that appears decorated with an ‘eye open/eye closed’ mask; this fits the motif of mortality, which the Acheulian meme already seems to associate with the cleaver in its biface pairing with the handaxe. A collected fossil coral from Swanscombe—at least in my interpretation—appears to be polymorphic figure stone bearing the ‘predator/prey’ dialectic placing ‘the human’ somewhere ‘betwixt and between’. Figure stones which appear to represent a combination of ‘human + feline’ may be presumed to be early manifestations of later survivals of this theme in art, symbol and mythology. I could go on and on about these figure stones and their possible interpretations and one may turn to the OriginsNet website or those of its associates for many proposed examples. I will only note one more of the themes, which has recently come to light (Jan van Es personal communication) which I find fascinating, namely a proposed polymorph combining images of ‘elephant (or mammoth) + female (vulva) + egg ± sun ± bird ± lion’. While its discoverer was apparently not aware of it, does it not seem to foreshadow the Hindu myth of the creation of Airavata and Garuda from the two halves of the great egg?

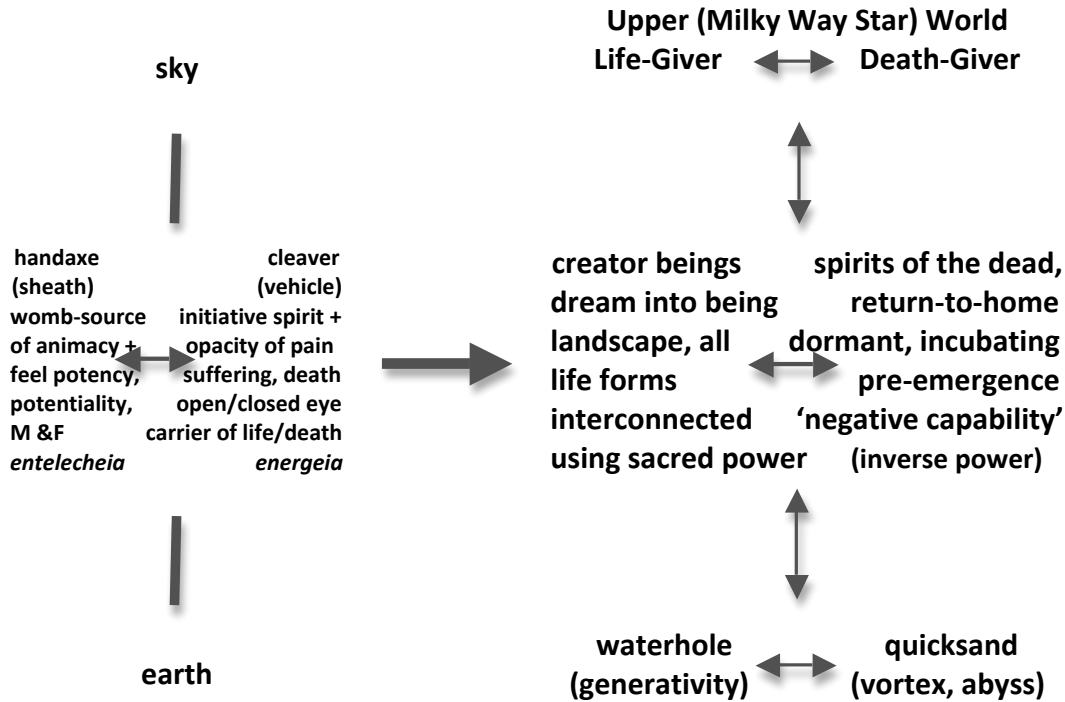
**The 3<sup>rd</sup> Meme: Middle Paleolithic/Middle Stone Age: Mythic I & II.** The evolution of this third meme, which I call Mythic I & II, is associated with the innovation of Middle Paleolithic/Middle Stone Age industries and the third major global dispersal of *Homo* out-of-Africa, that of *Homo sapiens sapiens*, across the ‘Southern Route’ through SW Asia and South Asia to East Asia and Australia. This period witnesses another quantum leap in examples of symbolic behavior with over 150 for the Early and Mid-Middle Paleolithic and over 90 more from Late-Middle Paleolithic traditions—a veritable ‘creative explosion’ if there ever was one. All this is well prior to the Upper Paleolithic/Later Stone Age and while especially associated with *Homo sapiens sapiens*, comparable innovations are associated with *Homo neanderthalensis*.

I have argued (Harrod 2006a) that the Mid-Middle Paleolithic is the key time period for *Homo sapiens sapiens* out-of-Africa-by-the-Southern-Route hypotheses. Mid-MSA assemblages correlate to Oxygen Isotope Stage (OIS) 4 (~59-74 ka) and OIS 5 (~74-130 ka). I have argued that a comprehensive global review of the archaeological evidence appears to show a strong west-to-east gradient of earliest dates. A wave (or waves) of *Homo sapiens sapiens* appears to originate in Africa (Omo Kibish, ~195 or Mumba Shelter ~130) or possibly Southwest Asia (Tabun C, ~120-250 ka; Hayonim Cave, ~150 ka). Mid-MP subsequently occurs in India (Patpara, Son Valley, ~75-85 ka and Challahia, Belan, ~72-85 ka; Samnapur, Narmada, ~74 ka)—clearly taking the Narmada Route across central South Asia; Southeast Asia (Liang Bua, Flores, ~61-74 ka) and China (Huanglong, ~35-100 ka; Xinglongdong, ~120-150, palaeoart, but *H. s. archaic?*) and Sahul (Malakunanja II, Kakadu, ~55 ka; Lake Mungo, ~43-45 ka). It reaches Central Asia/Siberia (Kara-Bom, ~62 ka) but *Homo sapiens sapiens* does not appear in Europe/W. Asia until ~40 ka and then bearing an UP tool-and-symbol-kit. A Mid-Middle Paleolithic tool-kit in Europe comparable to MSA might be considered to be the Mousterian with Levallois (e.g., Pech de l’Azé IV/8, OIS5c ~100 ka).

Considering Michael Witzel’s geostratigraphy of world mythology (Witzel 2010), I suggest that the ‘Gaia’ and especially the ‘Gondwana’ mythic stratum correspond to the *Homo sapiens sapiens* out-of-Africa wave with Mid-Middle Palaeolithic tool-and-symbol-kit. (Very tentatively, I would add that if ‘the Gondwana’ mythologies correspond to the Mid-Middle Paleolithic technology and symbolic behaviors, perhaps we might infer that the ‘Gaia’ mythology, which may be associated with survivals in Khoisan myths, correspond to Early-Middle Paleolithic or even the Later/Final Acheulian time periods. Thus, I have used the labels ‘Mythic I’ and ‘Mythic II’.) I give a brief outline of the archaeological evidence for symbolic behaviors for which I suggest their thematics in *Table 11*.

<b>Table 11. Meme #3 Mid-Middle Paleolithic/Mid-MSA: Mythic II</b> Predominant symbolic behaviors and (•) derived thematics
<b>Mortuary practices: defleshing, secondary 'burial', deposition in cave and shelter</b>
<ul style="list-style-type: none"> <li>• 'Return-to-home', 'womb'; 'going-to-where-I-will-die,' 'negative capability' (to be in state of waiting, dormancy, hibernation, incubation, pre-emergence, prior to sunrise, before-the-beginning, not-knowing yet healing; embodiment as negative capability) (motif, compare alchemical <i>cauda pavonis</i>; Taoist 'uncarved block'; Nagarjuna: state of the 'not-born' and the 'unceasing' of time; Bob Marley: 'cannot stop the time') <ul style="list-style-type: none"> <li>○ Site e.g., Bruniquel bear bone container, other sites with bear skull arrangements; Quina in caves, even tools regress to simple flakes</li> </ul> </li> <li>• 'To be alone with Thou—encompassing—I relationship' (motif, compare Bracha Ettinger: the matrixial, co-poiesis as revision of Martin Buber 'I-Thou') <ul style="list-style-type: none"> <li>○ Site e.g., European MP 'bear skull' depositions; African MSA 'hyena' as crusher and devourer of all bones, being totally consumed into death</li> </ul> </li> </ul>
<b>Use of pigment</b>
<ul style="list-style-type: none"> <li>• Red and black as 'conjunction of opposites', possibly sometimes mapped on gender but not necessarily</li> </ul>
<b>Stone/Bone/Tool arrangements</b>
<ul style="list-style-type: none"> <li>• 'Mandala spaces, 4+ directions, laterality L versus R' <ul style="list-style-type: none"> <li>○ Site e.g., spheroid pile, El Guettar, red, black, white color, geometrics, point; spheroid pile, Windhoek; Rece Cave, 4 bear skulls (4 directions?); Cioarei-Borosteni Cave, 2 bear skulls back-to-back E-W, 1 bear skull framed by triad of nucleus, scraper, and point</li> </ul> </li> </ul>
<b>Marking traditions</b>
<ul style="list-style-type: none"> <li>• Cupules: 'gathering-into-one's home', 'opacity of suffering'; 'sound of silence'; contact and be alone with reality of finitude'; powder as 'residue' (motif: compare Aboriginal increase ceremony: cupule powder on zoomorphic rock yields increase; compare alchemical <i>Sal</i>, rust and salt, the residue, remnant as messianic hope) <ul style="list-style-type: none"> <li>○ Site e.g., La Ferrassie; multiple sites from Africa to India to Australia</li> </ul> </li> <li>• Crisscrossing, grid lattice and digital fluting: 'reciprocity, exchange, interconnectedness', 'the order of relationships and all life-forms', 'the law of prescription/proscription + 'intergenerational transmission, continuance of life' <ul style="list-style-type: none"> <li>○ Site e.g., Blombos X's, crisscross grid; Koonalda digital fluting and grids, Champlost criss-cross, etc.)</li> </ul> </li> <li>• Cross: '<i>coincidentia oppositorum</i>' <ul style="list-style-type: none"> <li>○ Site e.g., Tata, 'cross' incised on nummulite</li> </ul> </li> </ul>
<b>Image and representation</b>
<ul style="list-style-type: none"> <li>• Geometric (triangular, pentagon, hexagon) figurines: 'creator beings, female or male or androgynous, of landscape and all life forms' <ul style="list-style-type: none"> <li>○ Site e.g., Quneitra, Tabun B; Mousterian of Acheulian Tradition, Har Karkom (<i>JBH</i>: three dreams of Har Karkom, biface signifies 'make peace')</li> </ul> </li> </ul>
Note: MP ≠ Shamanic (Laurasian) thematics, such as cave as 'place (container) of emergence/rebirth of animals'; 'master/mistress of animals'; 'bear cult'; 'vision quest', but thematics more like 'purification' and 'reduction to bone' (Eliade)

**Table 12. Meme #3 Middle Paleolithic/MSA: Mythic I & II**  
**Mythic I = Khoisan (Witzel: 'Gaia') and**  
**Mythic II = 'Southern Route' (Witzel: 'Gondwana')**



Note: the differential 'waterhole/quicksand' I take from Mowaljarlai & Malnic (1993).

With a nod to 'Gondwana' culture, especially its survival in Australian Aboriginal traditions, I suggest that the 3<sup>rd</sup> major meme in the evolution of symbol, metaphor and myth, is Middle Paleolithic/Middle Stone Age Meme #3, for which I highlight key motifs in *Table 12*. In this meme I suggest that the MP/MSA 'Gondwana' mythopoetic field is structured by the differential feature 'creator (dreamtime) beings versus spirits (and/or deity) of the dead' and that this complementarity evolves out of and has in its background the Acheulian complementarity symbolized by the handaxe/cleaver biface pairing.

In distilling the MP/MSA meme from archaeological finds as well as ethnographic parallels from 'Gondwana', especially Australian Aboriginal mythics, and searching for its possible key differential features the hypothesis struck me that both the 'world-structure' and sense of the sacred and sacred energy in this meme is clearly distinct from that of the Upper Paleolithic/LSA Meme, which is generative of 'Laurasian'

mythologies and associated culture traditions of shamanism. For example, as I note, it seems that the role of the sacred space of rock shelter or cave in the Middle Paleolithic/MSA symbolizes a thematic of ‘return-to-home, the place of one’s birth, one’s origin’ which connotes motifs of ‘dormancy, incubation, and, thus—I must emphasize against a currently popular rubric—**pre-emergence**’. For one engaged in a spiritual or healing quest a cave will be a place of—to use the phrase from the poet John Keats—‘negative capability’. With all the focus among users of theories of evolution upon adaptation and adaptive benefit, it is important not to overlook the ever so important creative state of negative capability, being lost, not knowing anything, which is also a state prior to any sense of emergence. By and large, I would wager that Middle Paleolithic peoples did not view caves in a ‘shamanic’ manner as ‘containers or wombs for the death and rebirth and emergence of animals’, nor sites for ‘vision quests to obtain animal helpers’; nor did they worship some sort of ‘mistress or master of animals’. I am suggesting that such ethnographic parallels are irrelevant to the Middle Paleolithic record. Quite the opposite, it would appear that for the Middle Paleolithic, the initiatory healing thematic involves something like ‘purification’ and, to draw upon Eliade, ‘reduction to bone’, which is strongly emphasized in Aboriginal shamanic initiation symbolism.

As an aside in support of this point, I think that this is a primary reason that we have witnessed almost a century of back and forth debate over whether sites in Europe that have puzzling arrangements of cave bear remains had or did not have a ‘bear cult’. The notion of a ‘bear cult’ is a projection of circumpolar shamanic beliefs upon Middle Paleolithic sites. Quite the contrary, to my mind, it would be more fitting to interpret the available evidence, which in some cases does suggest intentional arrangements of bear bones, as suggestive of ritualized respect for ‘the bones of the those who hibernate and incubate here in their negative capability.’

**The 4<sup>th</sup> Meme: Upper Paleolithic/Later Stone Age: Mythic III.** The evolution of this fourth meme in the evolution of symbol, metaphor and myth, which I call Mythic III, is associated with the innovation of Upper Paleolithic/Later Stone Age industries. With respect to evidence for symbolic behavior during the UP/LSA this evidence is discussed extensively in the voluminous literature on this period and I will not even attempt to summarize here. (For a partial inventory of UP/LSA sites, at least across the ‘Southern Route’, see databases on OriginsNet.org.) Early, Middle and Late Upper Paleolithic/Early, Middle and Late Later Stone Age tool industries, ~ 60 to ~5 ka, are characterized by retouched blades and bladelets, scrapers on blades, small and microlithic tools; bone tools, soft hammer, and even more art than prior periods.

Considering the weak time gradient West to East, it appears possible that the Early (or Initial) UP/LSA may have diffused from Africa or Southwest Asia to South Asia and then to East Asia, but alternatively each region’s industries could reflect independent, multi-regional, convergent innovations built on shared Mid-MP technologies and symbolic behaviors. Based on the archaeological evidence this latter alternative hypothesis looks most likely to me—and here I follow the view that very early UP assemblages of the Central Asia Altai Mountains challenge the model of African or Near Eastern origin of the UP/LSA and its spread from the Levant into Eurasia (*KY2006a*) and suggest that the Aurignacian originated in Central Asia (*OMJK2003*). Similarly, middle-UP/LSA microlithic industries appear to occur in each region across the ‘Southern Route’ about 10k years later than the respective emergences of EUP industries. Although this could reflect a dispersal at around ~40 ka, given the near simultaneous early occurrences in Africa, SW Asia and South Asia, it seems again to me more likely that they could just as well be convergent innovation across these region and then diffusion. Late UP/LSA microblade/bladelet traditions again appear to occur across the ‘Southern Route’ about 10k years later than the emergence of Mid-UP/LSA industries and similarly although this could reflect a dispersal at around ~30 ka its probably more likely that these traditions are also multiregional convergent innovations. In any event, I am convinced that the various alternative scenarios for the ‘Recent out-of-Africa Model’ (ROM), whether put at 45,000 or fudged up to 65,000 years ago, are falsified by the archaeological evidence (Harrod 2006a).

Further, I suggest that the Upper Paleolithic/LSA archaeological record provides symbolic evidence for typical ‘shamanic’ themes, including:

- 3 (or more) Worlds: Upper, Middle and Lower Worlds with some sort of central *Axis Mundi* (M. Eliade)
- Mother-of-Animals and/or Master-of-Animals who have control over the availability of game animals
- Cave/Waters as emergence place
- Trance Soul Journey and Soul Retrieval; Initiation as Death/Rebirth; Psychopomp who guides souls from this world to the next

To which I add from my own analyses (Harrod 2006b; Harrod 2004 online originsnet.org; Harrod 1997; Harrod 1987):

- Upper Paleolithic-European, UP(E), subset of geometric signs used under application of combinatory matrix to generate array of 6 female and 6 male spiritual transformation processes and their respective symbolization and mythologies, and which include prototypes for ‘shamanic’ and ‘age group’ initiation ceremonies

Once we jettison the out-dated ROM hypothesis, a multiregional hypothesis for the EUP and an ‘out-of-Central-Asia’ hypothesis for the Aurignacian appears to match up well with the advent of the ‘Laurasian’ mythological stratum (Witzel 2010), which can be called ‘shamanic’. As an aside, if one accepts the correlation of Upper Paleolithic and a ‘shamanic’ (‘Laurasian’) mythological stratum, it follows that application of ethnographic parallels from Khoisan (‘Gaia’) and Southern Route (‘Gondwana’) mythologies to Upper Paleolithic symbolic behavior will be necessarily misleading.

I give a schematic of Meme #4 in *Table 13*.



<b>Table 13. Meme #4 Upper Paleolithic/LSA: Mythic III</b> <b>Shamanic mythos ('Laurasian', Witzel 2010)</b>		
<b>Upper (Milky Way Star) World</b> Life-Giver ↔ Death-Giver		<b>Upper Worlds</b> sky world ↔ star world (Great Spirit, tutelary spirit)
		↕
creator beings dream into being landscape, all life forms interconnected using sacred power ↔ spirits of the dead return-to-home dormant, incubating pre-emergence 'negative capability' (inverse power)	→	<b>Middle Worlds</b> this world ↔ ghost world (parallel worlds) ○ × ✚ ∨
		↕
waterhole (generativity) ↔ quicksand (vortex, abyss)		<b>Lower Worlds</b> underground world ↔ water world (spirit animals)
Note. In the table cell for the Middle World, I show four UP(E) geometric signs, which exemplify the four sign-clusters that I have deciphered as a geometric protolanguage (Harrod 1987, 1997, 2006b) and which was used to signify spiritual transformation processes encoded in rock art and anthropomorphic figurines.		

While the 'world-system' of shamanic cultures is frequently and/or conveniently described as a 'three-world' model many shamanic peoples have mythologies positing subdivisions of one or more levels. For one example, the Micmaw of Nova Scotia posit six-worlds, with each of the three subdivided, and I have used their terminology in my schema for Meme #4. I suggest that such a six-world model, with each level doubled, supports my hypothesis that Meme #4 has a Middle Paleolithic (and 'Gondwana') 'background' from Meme #3, since it has already split each of three vertically hierarchical levels of 'the world' into two complementary and dialectically related themes and this engenders the differentiation of the shamanic three-worlds into six.

Conclusions. A review of global archaeological evidence suggests that the earliest human symbolic behavior began with the Makapansgat ‘found art’ sculpture at three million years ago and the earliest intentional symbolic behavior occurred at least by the Oldowan two million years ago. The review finds at least 11 reports of symbolic behavior from the Classic and Developed Oldowan Periods; 13 from the Early and Middle Acheulian Periods and over 50 from the Later and Final Acheulian Periods. It identifies over 150 for the Early and Mid-Middle Paleolithic and over 90 more from Late-Middle Paleolithic traditions—a veritable ‘creative explosion’ if there ever was one. All this is well prior to the Upper Paleolithic/Later Stone Age for which we already have a vast number of art and religious sites around the world and a voluminous literature.

Reviewing this two million years of incremental and punctuated quantum leaps in the evidence for human symbolic behavior, I propose that there are four major ‘memes’ (energy-transformation-patterns) of human cultural evolution that are generative of symbolic, metaphoric and mythic imagination and which manifest in such behaviors as collection of exotic objects, use of colorants, self-adornment, marking traditions, representational sculptures and mortuary practices. The four memes correlate to each of the four major dispersals and globalizations of human cultural evolution: Oldowan, Acheulian *sensu lato*, Middle Paleolithic and Upper Paleolithic.

Implications.

This Four-Meme model is compatible with and supports Michael Witzel’s hypothesis for three strata of mythology from Gaia to Gondwana to Laurasian (Witzel 2010). The Four-Meme model requires substantial revision of previous theories, such as those of Merlin Donald (1991, 1993) and Steven Mithen (1996), which, in my opinion, have inadequate and out-dated grounding in the palaeoanthropological database, lack application of methods for identifying and describing phenomena that might be categorized as ‘mythic’ or ‘religious’, overlook distinctiveness of the Oldowan and Acheulian culture forms, conflate the three unique strata of mythology, and fail to rigorously grasp the characteristics of the ‘memes’ for the stages of human symbolic evolution.

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