









NOTES ON EARLY ACHEULIAN STONE TOOLS: CONSTITUTIVE OPERATIONS AND ANALOGIES OF THE SOUL

Early Acheulian bifaces appear to be characterized by seven basic operations. After a brief description of each operation, I propose how the pattern of that operation had the capacity to serve as an analogue for a concept of the soul that could be expressed both in self-concept (selfobject) and interpersonal relations (object relations).

1. A 'core' is flaked and the flake is trimmed, in turn, to become a 'core' which, in turn, may be used as a source of flakes. There is a return or restoration of the 'core'. The flake is treated like a core. In a sense this is a reduplication of the Oldowan pebble at the meta-level or next higher level of abstraction as a flake transformed into a core.
 - Concept of '*renewal, re-presencing, restoration, and reparation of the core*'. Building upon the Classic Oldowan spiritual concept of '*sustaining core-essence*', the Early Acheulians develop the thematic '*restoration of the sustaining core-essence*.'
2. Feature derived from Developed Oldowan A: 'orientation of flake', by verticality, top and bottom, and secondarily horizontality, left and right.
 - #2 combined with #1 yields concept of '*restoration or reparation of the core with orientation, uprightness (verticality) and balance (horizontality)*.'
3. Concept of interval, or constant quantity of space, used with an internal reference (Wynn 1989:58-61), as with respect to internal central point (e.g., very circular discoids, very spherical spheroids) or internal midline (e.g., bifaces).
 - Concept of '*internal central point, internal reference, inward dimension*'.
4. Apply, elemental themes from the 2X4 matrix of oppositions, which is my paraphrase summary of Wynn. Wynn observes: "[a basic notion] was that of two dimensional shape. By this I mean simple curves, projections, concavities, and so on" (1989:58-61). Given apparent straight edges on cleavers, that are actually—as Wynn notes—natural and due to breaking away of flake on natural cleavage lines, I have added the opposition between a natural edge and an intentionally trimmed edge.

EDGE		NATURAL snap, break, 'unnatural'	TRIMMED	
EDGE		RECTILINEAR Angular	CURVILINEAR	
SIDE		POINTED	ROUNDED	
SIDE		CONCAVE	CONVEX	

I think this 2X4 matrix more adequately accounts for the features of Early Acheulian tools as well as contemporary Developed Oldowan B tools. There appears to be a repertoire of elemental shapes (or shaping gestures) that are in paired opposition and that may be mirrored in paired similarity.

- Concept of '*symmetry pairs of elemental(opposite or differential) shapes (or shape gestures)*'. This evokes a first apprehension of the distinction '*artificial versus natural.*'
 - In a cleaver, the natural, untrimmed edge, the result of artifice, especially if appearing rectilinear (an 'unnatural break or snap'), evokes the concept of a '*residue or residual of the flake*' within that which is turned into a core. It can serve as a reminder, an intentional flaw that is a reminder of '*the residue, the flaw, ultimate imperfection and incompleteness*'. This is like the practice of weavers in much later times who leave a dot of the asymmetrical or incompleteness in a design as a sign of humility before the divinity of the larger whole.
5. Finally, apply operation of 'reversal' and 'mirror symmetry', "the mirroring of one shape across a midline," which is not 'bilateral symmetry', the latter not emerging until later in the Early Paleolithic (Wynn 1989:58-61). Notions of reversal symmetry and mirror symmetry imply both similarity of shape and opposition of shape.
- Concept of '*symmetry, both mirror symmetry and mirror opposites*'.
6. Notions of constant interval and symmetry, including similarity of shape and opposition of shape, "contributed to the idea of the artifact as a whole" (Wynn 1989:61).
- Concept of '*wholeness*'. Combining with preceding concepts yields the overall formulation: '*renewal, re-presencing, restoration, and reparation of the sustaining core-essence, of its wholeness and balance as an orientatio of the core, upright and balanced, with an internal, inward reference point, arrived at through circumambulating the core and establishing symmetry, both mirror and opposites*'.
 - This wholeness also has implicit within it the '*residue, that which is unrestorable or unreparable.*' To the classic Oldowan concept of the nurturing core essence is now added the Early Acheulian concept of the reparative restoration of that core essence into an upright and balanced wholeness, but one tempered by an implicit residue.

The newly restored is not restored into immaculate perfection, but hosts an incompleteness, a flaw in one facet of its wholeness. This is the Residue. This is comparable to the Hindu notion of *sesha* (= residue, remainder, left after the earth was created, the ancestral king of all snakes that crawl the earth, the *nagas*, the keepers of life-energy and guardians of treasure).

The reparation and renewal of the sustaining core essence in its wholeness, balance and uprightness and with its internal reference point along with its reminder of the residue, the irreparable, imperfect, and incompleteness that belongs to psychological and spiritual wholeness, is a shaping of stone. It is an operation upon the '*prima materia, stone as such*'. This suggests the opacity of stone and this, in turn, evokes the mystery and ultimate incomprehensibility of suffering, of deprivation, abuse, trauma, and creative and spiritual suffering. This is the resistance of the real, the reality principle, *Necessitas*. It is in the face of this opacity that, nevertheless, one seeks reparation of the sustaining core essence as well as recognition of that which is irreparable.

Thus the overall Early Paleolithic technological process is capable of providing a remarkable analogy for the soul (self, spirit) at the emergence of the Acheulian some 1.5 million years ago.

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The flow chart below attempts to diagram how typical Early Acheulian (and Developed Oldowan B) tools exemplify the application of the 2X4 matrix of basic shape elements and how one tool type flows into or metamorphosizes into another in an overall pattern of shape-giving. In these examples the knappers appear to visualize tiers of shapes, from one two three tiers and, respectively, with 4, 6, and 8 facets, each with one or two combined elemental shape. [Note. The chart represents a reanalysis of all of Wynn's illustrations of Early Acheulian and Developed Oldowan B tools in Wynn (1989). Figures noted are the Wynn (1989) figures.]

Interestingly, the simplest symmetry shapes in the series—the discoid or spheroid and the awl—recapitulate earlier steps in the evolution of stone tool technology. The circular shapes correspond to the classic Oldowan pebble cores, discoids, subspheroids and spheroids. The awl shape—with its associated self-concept of orientation, the orientation of verticality—first appears in the Developed Oldowan A, which precedes the Early Acheulian.

The next in the series—the pointed Peninj biface (Wynn 1989:fig. 16)—may be seen as an awl-shape with elongated sides. The series of rectilinear-curvilinear bifaces, all from Peninj, feels like a problematic development, not so aesthetically satisfying. The two-tiered Peninj examples extend by a kind of doubling process the one-tier repertoire, the first perhaps a failed attempt at the doubling, while the second is more balanced. Finally, the three-tiered examples are a kind of piling on of mirrored shapes, the extremity of artistic prowess. The last biface in the series—from Olduvai Gorge site EF-HR—is perhaps the most aesthetically pleasing in complexity and overall shape. It has a full eight facet symmetry.

The EF-HR biface has some additional remarkable features, too. It has a rectilinear and apparently natural break at top and bottom. In the light of later Acheulian cleaver bifaces, this biface might be viewed as a double cleaver with a bit at both ends, a sort of double axe. If so, this piece may not have been meant for some utilitarian purpose. If not, then it may have been intended as art-for-art's sake. Indeed, the whole series suggests that these Early Acheulian knappers had a wonderfully playful sense, adding symmetries upon symmetries in a kind of *joi de vivre*. In addition, the EF-HR

‘double cleaver’ might have served—as I tend to believe—a symbolic purpose, social, psychological, or religious, or all three. The same might be the case for any or all the preceding artifacts in the series. Further, if reversal symmetry was just something Early Acheulian knappers did as a matter of course, this would appear on their scrapers—a clearly utilitarian tool—but the Early Acheulian scrapers do not evidence this. (Only the *outil écaillés*, which first appear in the contemporaneous Developed Oldowan B, evidence retouch on opposite somewhat rectangular edges and suggest a kind of mirror symmetry.) Thus the application of mirror symmetry is intended for the bifaces as such as it part and parcel of their function.

The EF-HR biface also—like its Peninj counterpart—in having two pairs of mirrored concavities would recapitulate the classic Oldowan bifacial chopper core with four flakes removed, two on each side. I have described a remarkable example of such an Oldowan core in which a rhomboid shape appeared between the flakes as a byproduct of the flaking, and I have shown the deep symbolic potential of this core. The EF-HR biface takes the classic Oldowan core to a meta-level, transforming it into an abstract and intentionally applied ideal. (Note: one of the rectilinear-curvilinear bifaces, Wynn (1989) fig. 19, has within its curvilinear shapes on its obverse a—intentional or accidental?—parallelogram.)

I have suggested that these Early Acheulian artifacts could have been used to express the idea of *‘renewal, re-presencing, restoration, and reparation of the core sustenance, of its wholeness as an orientatio of the core, upright and balanced, with an internal, inward reference point, arrived at through establishing symmetry, a mirror symmetry of similar or mirror opposite shapes and acknowledging and working with the residue of the irreparable.’* The form of the EF-HR biface—I think—could well have expressed such an idea, as could any of the other bifaces in the series.

The Early Acheulian biface technology looks forward to the Middle and Later Acheulian bifaces. As Wynn observes, this evolution involves a movement from a 2-dimensional sense of space to a 3-dimensional one. In making this innovation, the knappers would have had no easy task if they were to translate the Early Acheulian two and especially the three-tiered gestalts. In fact, it appears that the later Acheulian stone knappers based their bifaces upon the simpler, one-fold pointed biface, and took this into the third dimension. In doing so they continued the even earlier tradition of the Oldowan awl-shape, and perhaps—if they were intentional as Leakey suggests, though Wynn disputes this—the so-called ‘protobifaces’, which a kind of awls with a globular bottom. In carrying forward the Early Acheulian biface tradition, the later Acheulians would have carried forward their associated abstract symbolic meaning.

Version 2 Afternote

After writing the foregoing argument, de la Torre *et al* (2003) reported their finding that “the Peninj Oldowan assemblages show complex technological skills for Lower Pleistocene hominids, which are more complex than has been previously inferred for the Oldowan stone tool industry... Planning and template structuring of flaked products are integral parts of the Oldowan at Peninj” (abstract). Their assessment, I believe, confirms my interpretative amplification of Peninj symbolic template.

References

de la Torre, I., Mora, R., Domínguez-Rodrigo, M., de Luque, L., and Alcalá, L. (2003). The Oldowan industry of Peninj and its bearing on the reconstruction of the technological skills of Lower Pleistocene hominids. *Journal of Human Evolution* 44,2:203-224.

Wynn, T. (1989). *The evolution of spatial competence*. Chicago: University of Illinois.

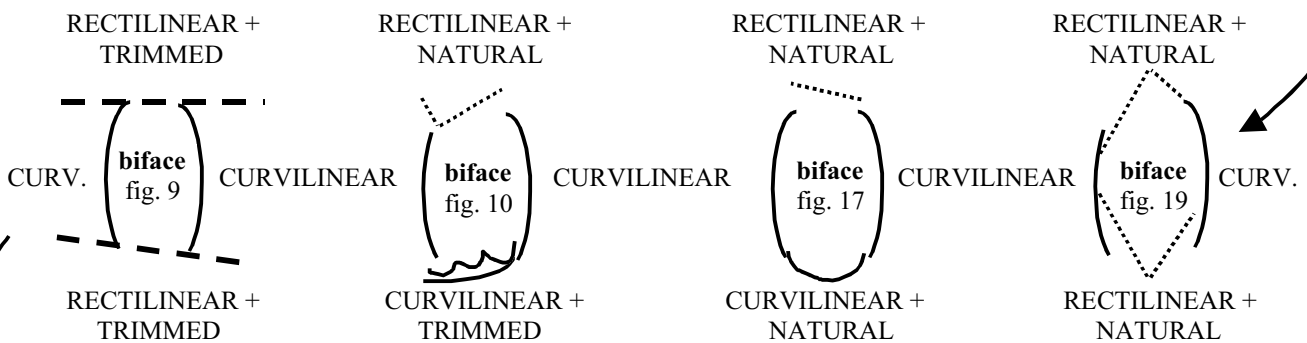
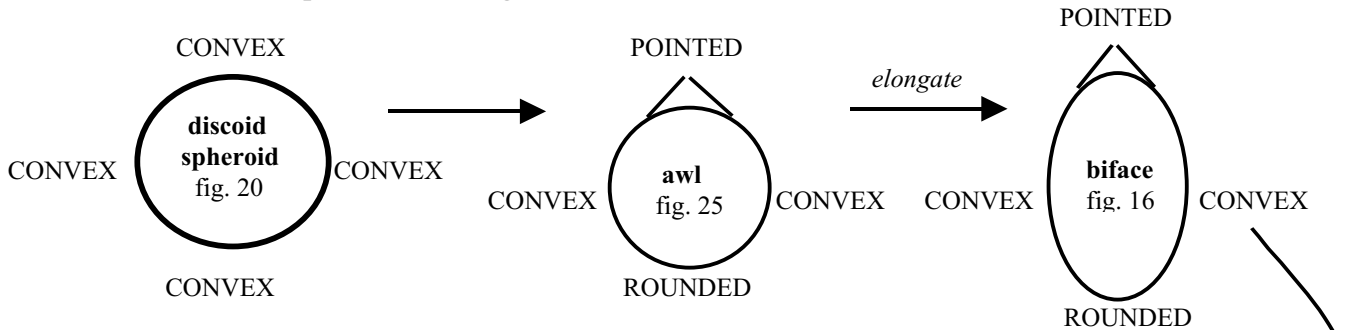
EARLY ACHEULIAN BIFACES – LOGIC MODEL OF SHAPES

Peninj MHS and RHS, West Natron, Tanzania (c. 1.4-1.7 MYA)

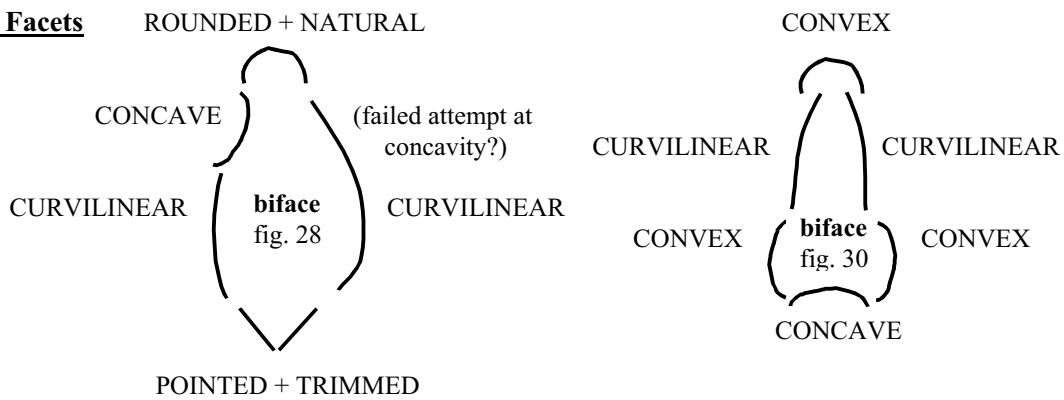
and Olduvai Gorge EF-HR, Tanzania (c. 1.3-1.5 MYA)

(Using illustrations of typical tools from T. Wynn, The Evolution of Spatial Competence)

One Tiered, 4 Facets (top/bottom//left/right)



Two Tiered, 6 Facets



Three Tiered, 8 Facets

