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# Engraved ochre from a Middle Stone Age context at Klein Kliphuis in the Western Cape of South Africa

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**Abstract**

This paper reports on a piece of engraved ochre recovered from a Middle Stone Age context at the rock shelter site of Klein Kliphuis (Western Cape, South Africa). The ochre was associated with a mixed assemblage of Howiesons Poort and post-Howiesons Poort MSA artefacts, suggesting that it is substantially younger than similar finds at Blombos Cave. The implications of the find for arguments concerning the nature of Late Pleistocene behavioural evolution are discussed.


*Keywords:* Middle Stone Age; Modernity; Engraved ochre; South Africa

## 1. Introduction

A great deal of discussion has recently been focussed on the nature of human behavioural evolution in the late Pleistocene (see Chase, 1991, 1994; Chase and Dibble, 1987, 1990; D'Errico and Henshilwood, 2007; D'Errico et al., 2001, 2003; Deacon, 2001; Henshilwood and Marean, 2003; James and Petraglia, 2005; Klein, 1989, 1995, 1999, 2000, 2001, 2003; Marean and Assefa, 2005; McBrearty and Brooks, 2000; Mellars, 1989; Noble and Davidson, 1991; O'Connell and Allen, 2007; Shennan, 2001; Wadley, 2001). Though the issue itself is not new, a slew of recent finds from Middle Stone Age (MSA)/Middle Palaeolithic (MP) contexts in Africa and the Levant has helped to (re)ignite debate, centred on whether behavioural evolution in this period was gradual, episodic, or abrupt (revolutionary). To an extent, this debate has become increasingly concerned with the appearance and significance of symbols and decorative items, at the expense of changes in technology and subsistence (e.g., Bouzouggar et al., 2007; Brumm and Moore, 2005; Cain, 2006; Chase, 1991, 1994; Chase and Dibble, 1987; D'Errico et al., 2001, 2005; Henshilwood et al., 2002; Lindly and Clark, 1990; Parkington et al., 2005; Vanhaeren et al., 2006).

This paper reports on a piece of ochre from an MSA context at the site of Klein Kliphuis in southern Africa. The ochre is ground and fractured, but more importantly, scored in a cross-hatched manner which we consider to imply an element of design. To that extent, it is argued that the ochre might reasonably be described as engraved. Finds of engraved ochre from the site of Blombos Cave, some 400 km south east of Klein Kliphuis, have been used to argue for the formulation and deployment of symbols among MSA people, and, further, to imply the existence of complex communicative systems at this time (Henshilwood et al., 2002). The ochre from Klein Kliphuis is considered in light of these arguments. We contend that the implications of such finds for the Late Pleistocene human behavioural evolution debate are not straightforward, and that this lack of clarity is in large part a consequence of deeper ambiguities in the debate itself.

## 2. Late Pleistocene human behavioural evolution: origins and development of the debate

The potential significance of the find to be discussed derives largely from its relevance to the debate about how,

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when and in which ways human behaviours changed over the course of the Late Pleistocene. It is beneficial therefore, to give brief consideration to the origins and development of that debate, with particular attention given to the roles of symbolism and of the southern African archaeological record.

That the transition from Middle to Upper Palaeolithic was underwritten by a change of fossil form has been established for well over a century. In southern Africa, the transition from Middle to Later Stone Age was initially ascribed to the same causes—the replacement of ''Mousterian'' by ''neo-anthropic elements'' (Goodwin and van Riet Lowe, 1929). At that time southern Africa lacked Europe's skeletal evidence, and the comparison was largely based on purported technological similarities between the Middle Stone Age and Middle Palaeolithic, and the presumption that human behavioural evolution proceeded along a sequence of universal stages.

Excavations of the deep MSA sequences at Border Cave (Beaumont et al., 1978; Butzer et al., 1978; Rightmire, 1979) and Klasies River (Singer and Wymer, 1982) were, in many ways, pivotal to much of the debate that has ensued. In providing firm evidence of anatomical continuity across the MSA/LSA transition, the Border Cave and Klasies sequences created something of a conundrum—that changes in technological and faunal assemblages potentially similar to those witnessed across the Middle to Upper Palaeolithic transition, had occurred without a similar change of fossil form. The Klasies faunal data in particular were taken to indicate substantial differences in the ways in which MSA and LSA peoples hunted (Binford, 1984; Klein, 1974, 1975, 1989; Singer and Wymer, 1982). Though from distinct points of view, both Klein and Binford inferred that differences in the suites of fauna between MSA and LSA sites were products of different hunting abilities. In the absence of an anatomical basis for this change in behavioural capacity, the remaining avenue of explanation was taken to be behavioural.

In Europe, the Middle to Upper Palaeolithic transition heralded a very conspicuous rise in (potentially the appearance of) art and purportedly symbolic behaviours, including ornaments and music. In southern Africa, though there was no comparably dramatic efflorescence, such items were more readily apparent in the LSA than they had been previously. If art, ornamentation and music could be taken to be behaviours definitive of humans as we know them, then the logical inference was that humans not exhibiting these behaviours were in some important way less like us. With regard to the anatomical continuity apparent in the southern African record, this inference necessitated distinguishing human groups on the basis of behaviours—thus the origins of the concept of 'behaviourally modern humans'.

Klein's (1989, 1995, 1999) resolution of these issues was both elegant and problematic. If the increased prevalence of purportedly symbolic behaviours could be taken to reflect a (dramatic) improvement in the capacity of humans to communicate, then attendant changes in the record (for example, the rapid, global spread of *H. sapiens*, sustained occupation of new ecological zones, and changes in faunal and lithic assemblage composition) might also be explicable in similar terms. An increased capacity for communication would have allowed a more complex integration of individuals in social and economic endeavours, with consequences for hunting efficiency, technological innovation and, ultimately, survival.

Though McBrearty and Brooks (2000) subsequently argued that most if not all of the markers of behaviourally modern humans were present in Africa prior to the LSA/UP, it has been with the symbolic underpinnings of Klein's argument that much of the debate in this region has become focussed. A number of recent finds have been proffered as evidence for the presence of symbols and symbolic behaviours in the African MSA/MP (e.g., Bouzouggar et al., 2007; Cain, 2006; D'Errico et al., 2005; Henshilwood et al., 2002; Parkington et al., 2005; Vanhaeren et al., 2006). One consequence of these finds has been to weaken arguments for a 'symbolic revolution', at least in Africa. Another, and potentially more important consequence, has been to highlight the theoretical under-development of the archaeological concept of 'symbolism', and, more crucially, our capacity to link material objects to language and communication. The question, ''What, in archaeological terms, constitutes a symbol?'', remains anything but clear (''What isn't a symbol?'' even less so). Moreover, as Botha (in press) has recently discussed, even where it can be agreed that an object is imbued with symbolic significance there are few if any clear-cut implications for the presence (or absence) of complex communicative systems such as language.

In part, the symbolic aspect of the debate has been able to function without a theoretical exegesis of these components thanks to a circularity in the formulation of the debate itself (though see Chase, 1991, 1994). The observation that certain kinds of material remains are common late in the archaeological record but much less common earlier seems sound enough. However, the notion that populations lacking such items must have been in some way non-modern is both a presumption and a conclusion. Neither on ethnographic nor archaeological grounds does there appear to be a necessary basis for associating a ''modern'' mode of behaviour with a set of archaeological correlates. To that extent, phrasing the debate as a search for 'modernity' has been misleading (cf., Chase, 2003; Chase and Dibble, 1990). As Kusimba (2005) has pointed out, the diversity of hunter-gatherer lifeways even in the limited ethnographic present renders reliable criteria for defining modern humans difficult to ascertain. This is also true archaeologically, a point evident in contexts such as Australia, where the first ~40 ka (using O'Connell and Allen's (2004) conservative figure) of the occupational history of the continent bears more limited testimony to any of modernity's markers than does the African MSA (Brumm and Moore, 2005). If a poverty of these markers over a large geographic and temporal span is not sufficient to preclude the characterisation of a population as modern, then the absence of such markers generally cannot be taken to be meaningful in these terms (O'Connell and Allen, 2007). If the absence of such markers is not necessarily meaningful, and their presence is not linked by any logically necessary chain of inference to a mode (or modes) of behaviour, then we need to ponder what we are in fact pursuing (Chase and Dibble, 1990).

More recently, discussion has returned to the empirical roots of the debate—exploring patterns in the occurrences of various

classes of archaeological data (e.g., Henshilwood and Marean, 2003; McBrearty and Brooks, 2000; O'Connell and Allen, 2007). Particularly where liberated from the presumption that a 'modern signature' (per se) exists, such models can focus on the highly variable nature of late Pleistocene archaeological records. Models attributing variability in the diversity of archaeological data to demographic changes (e.g., Shennan, 2001) are relatively parsimonious, and, additionally, are better suited to the clearly non-linear nature of global archaeological developments in the late Pleistocene. Importantly, though symbolism and communication are afforded roles in such models, their lack of primacy diminishes the significance of their ambiguity as archaeological concepts. In this context, new finds of unusual classes of data, and information on their distribution in time and space, remain of substantial importance.

## 3. Klein Kliphuis: site and setting and excavation

Klein Kliphuis (KKH) is a rock shelter site located in the Western Cape of South Africa (Fig. 1). The shelter is located in the foothills of the Cederberg Mountains, approximately 7 km north of the town of Clanwilliam, and 200 km north of Cape Town. The present day coastline is 60 km to the west. The shelter is formed in quartzitic sandstones, and is 18 m wide at its widest point, and 9 m deep from the drip line (Fig. 2). Vegetation around the site is mountain fynbos. The shelter overlooks the Kliphuis River about 4 km from its confluence with the Olifants River, the major drainage system in the western part of the Cederberg Mountains (Fig. 3).

KKH is one of five excavated MSA contexts within the immediate region (Fig. 1). The site of Klipfonteinrand (KFR) lies some 40 km to the east and contains MSA stone artefacts belonging to the Howiesons Poort MSA variant, as well as others of older MSA affinity (Parkington, 1976; Parkington and Poggenpoel, 1971; Volman, 1981). Sixteen kilometres east-north-east of Klein Kliphuis is Hollow Rock Shelter (HRS), all layers of which are associated with the Still Bay MSA (Evans, 1993; Minichillo, 2005). Nearer the coast is Diepkloof Rock Shelter (DRS), an MSA sequence comprising levels of post-Howiesons Poort, Howiesons Poort, Still Bay and pre-Still Bay affinity (Parkington et al., 2005; Rigaud et al., 2006). The final MSA site in the region is Elands Bay Cave (EBC), located in cliffs at the present day coastline. Artefacts from EBC appear to relate to relatively early MSA occupation (Volman, 1981, 1984).

Excavation of KKH first occurred in July 1984. The excavation was undertaken by a team from the South African Museum (now part of Iziko Museums of Cape Town) as part of a broader regional study focussing on the content and distribution of Later Stone Age (LSA) hunter gatherer and herder occurrences around the towns of Clanwilliam and Graafwater. The LSA[1] component of the site was restricted to the upper 200 mm of the sequence, four 1 m by 1 m squares of which were excavated (Van Rijssen, 1992). A $^{14}$C date of 1990 ± 50 Uncal BP (Pta-4671) was returned from the lowest LSA level. In one square (denoted I1) the underlying Middle Stone Age (MSA) layers were also removed.

The MSA deposit in square I1 was removed in four layers, denoted as D, D1, D2, and D3 (Fig. 4). Charcoal from the basal layer returned a $^{14}$C date of 32 300 ± 1400 BP (Pta-4685). Bedrock was reached at a depth of 800–900 mm below surface, 600–700 mm below the final LSA layer. Variation in the colour and composition of the matrix appears to have been used as the basis for layer breaks, clear stratigraphy being otherwise absent. The excavation units were relatively thick, ranging from 105 mm (D3) to 250 mm (D2). Approximately 28 000 pieces of flaked stone were recovered from the MSA at Klein Kliphuis, along with 919 pieces of ochre. These artefacts were sorted but not subject to analysis until 2005/2006. That analysis (Mackay, 2006) identified a relatively clear technological sequence at the site, summarised below.

The lowest layer of the site, D3, was assigned to the Howiesons Poort (HP) MSA variant. This assignment was based on the presence of backed artefacts, radial and levallois cores, and a high frequency of silcrete with which the HP is often associated. The overlying layer, D2, contained elements of both the HP and subsequent post-HP MSA. Like layer D3, D2 included backed artefacts and a high frequency of silcrete, however, unifacial points were also present. At Diepkloof, unifacial points are associated with post-HP assemblages, from which backed artefacts are absent (Parkington et al., 2005). It thus seems probable that in Layer D2 the HP and post-HP are mixed, perhaps unsurprising given the ~25 cm thickness of the layer.

Based on the presence of unifacial points, the absence of backed artefacts and scrapers, and an increase in quartz at the expense of silcrete, layer D1 was also ascribed the late MSA post-HP. The final layer, D, contained elements consistent with Wadley's (2006) final MSA, including small numbers of scrapers and backed artefacts and no points (unifacial or bifacial). In contrast to Van Rijssen (1992), no bifacial points were recorded, and it thus seems probable that there was no Still Bay occupation of the site.

## 4. Engraved ochre from Klein Kliphuis

During analysis of the stone artefact assemblage, a small (<20 mm) fragment of ochre was located in a bag of silcrete flakes derived from Layer D2. This fragment had been scored with cross-hatched lines, two horizontal and five vertical. This discovery led to an examination of the remaining ochre pieces in the assemblage. This additional piece included a third horizontal line and extended the vertical markings (Fig. 5). Though recovered as two separate pieces, the artefact is discussed here as though it were a single piece—its state during engraving and probable state at discard. The artefact has three faces which we will discuss, one of which is striated, another of which is scored, and the third of which exhibits

[1] Though the timing of the transition from Middle Stone Age (MSA) to LSA in southern Africa is a contentious one (Clark, 1997; Deacon, 1984; Larsson, 1996; Mitchell, 1995; Opperman and Heydenrych, 1990), the LSA at Klein Kliphuis can be thought of as Holocene.

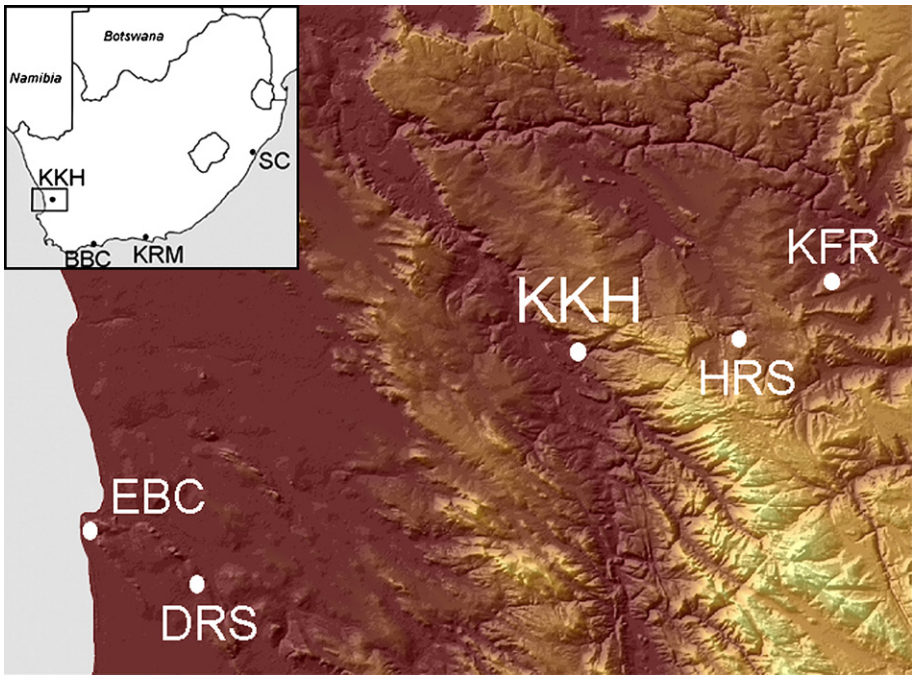


Fig. 1. Location of Klein Kliphuis (KKH) and other sites mentioned in the text.

characteristics of hertzian fracture (see Cotterell and Kamminga, 1987 for a definition).

The striated face is a flat rhomboidal facet, with the predominant direction of striation being at 45° to the long edges (Fig. 6). This face is 29 mm across through the centre of the long axis, with a height varying from 17.5 mm to 13.2 mm at the highest and lowest points respectively. Pieces of ochre with striated facets are not uncommon in the 1984 Klein Kliphuis assemblage, accounting for 9.6% of the ochre total by number and 39.4% by weight. While the significance of ground pieces remains a source of debate (Hovers et al., 2003; Lombard, 2007; Wadley, 2005a,b; Wadley et al., 2004; Watts, 2002), it seems clear that striated facets develop as a consequence of grinding ochre for powder, regardless of the uses to which that powder is then put. As it does not appear reasonable to infer the specific use of any one striated piece we conclude only that the striated face is utilitarian in the broadest sense.

The scored face of the artefact (Fig. 5) has a number of interesting features. Unlike artefact SAM-AA 8938 from Blombos Cave (Henshilwood et al., 2002) it does not appear that the face was prepared, rather it appears to have been naturally flat. There is, however, a significant topographical feature to this face, visible in the top left corner of Fig. 5 (also Fig. 7a). This protruding shoulder sits out some 2–3 mm from the face and has implications which are discussed later.

Like SAM-AA 8938, the KKH ochre has three dominant horizontal lines. The top and bottom lines diverge from left

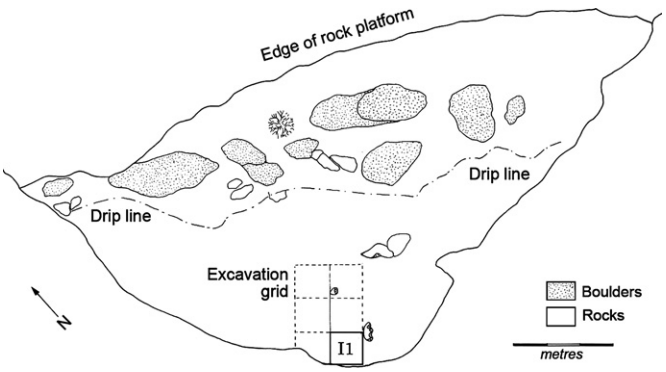


Fig. 2. Klein Kliphuis site plan (adapted from van Rijssen 1992: 34).

Fig. 3. Klein Kliphuis shelter, view looking north west. The shelter is located in the gorge wall in the centre of the image, as indicated by the black circle.

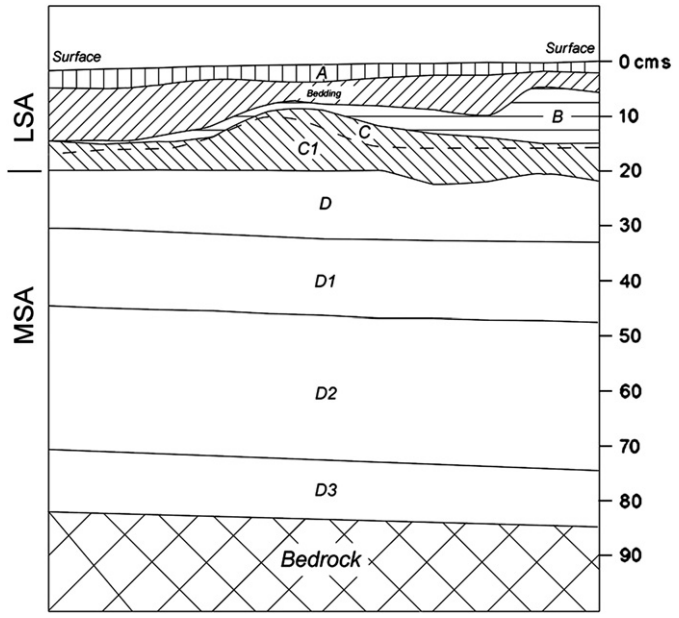


Fig. 4. Schematic representation of Klein Kliphuis 1984 excavation section, northeast wall, square I1 (adapted from van Rijssen's unpublished notes).

to right, while the central horizontal line runs broadly parallel to the bottom line. All three horizontal lines are composites, the results of multiple scoring events (Fig. 7b, c, e and f). This is most clear on the bottom line which is formed by three clearly distinguishable scoring events. The artefact has four major lines perpendicular to the horizontal. Two of these are vertical and the other two inclined. A fifth, fainter line crosses the left-most inclined line, forming a cross centred between the central and topmost horizontal line. There are a number of other faint lines scored diagonally, vertically and horizontally. Among these is a notable tendency for faint lines to run parallel to the dominant verticals for short distances towards their upper limits. Also notable are two quite pronounced parallel diagonal lines, visible at the centre right of the scored face. These appear more recent than the others

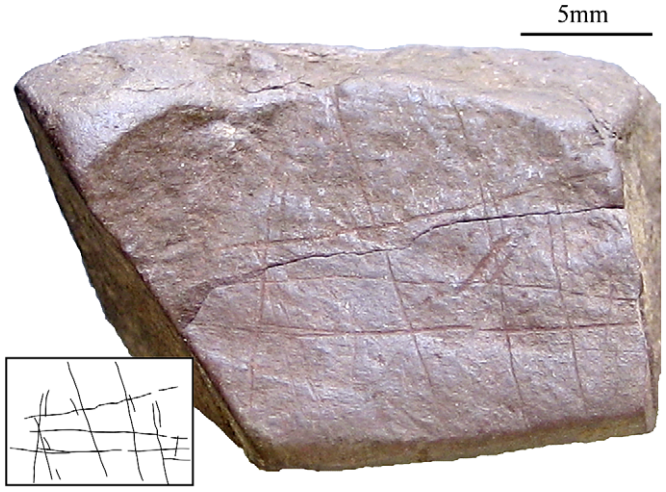


Fig. 5. The scored face of the ochre.


Fig. 6. The striated face of the ochre.

and may have been formed considerably later, possibly even during storage.

In general, the lines all appear to be of similar depth, though thickness notably varies (Fig. 7d). To explore this variation further, magnified images were made of the scored face, rectified to scale (Fig. 8). The widths of the scored lines were measured at various points, and the results are displayed in Table 1 and Fig. 9. Though the lines exhibit some internal variability in width, this is not obviously patterned. For example, lines do not become constantly thicker or thinner as they move across the artefact. More likely, variation is a result of inconsistencies in the amount of pressure applied during scoring. Far more marked patterning is obvious in the differences between lines. The data presented in Fig. 9 suggest that the lines can be distinguished into groups on the basis of width. Interestingly the central horizontal line groups with the vertical lines and is significantly distinct from the upper and lower horizontals. Also included in the graph are two central point values from the apparently fresh short diagonals located in the centre of the scored face. While this cannot be taken as evidence that these lines were not related to the other scoring events, it does lend support to the notion that these lines are distinct from the rest. Fig. 8 also makes it possible to note that the internal surfaces of the lines are far coarser and fresher than the smooth, weathered exterior surface of the artefact.

Overall, the differences in line widths between the upper and lower horizontals on the one hand, and the verticals and central horizontal on the other, would appear to indicate that scoring did not occur as a single event, and that the different groups of lines were made either with a different implement, or at different times, or both. Where it is possible to ascertain the sequence of superimpositioning at the junctures of the horizontals and the verticals (Fig. 8b and c), the vertical lines generally appear to have been laid down first, followed by the central horizontal, and finally the upper and lower lines.

While scored lines could also be identified on other ochre pieces, in almost all cases these lines occurred on a surface with grinding striations. In these instances it was not possible to categorically distinguish these scored lines from those which might have arisen incidental to the grinding process, for example, as a result of deeper scoring caused by protruding grains in the surface over which the piece was being ground.

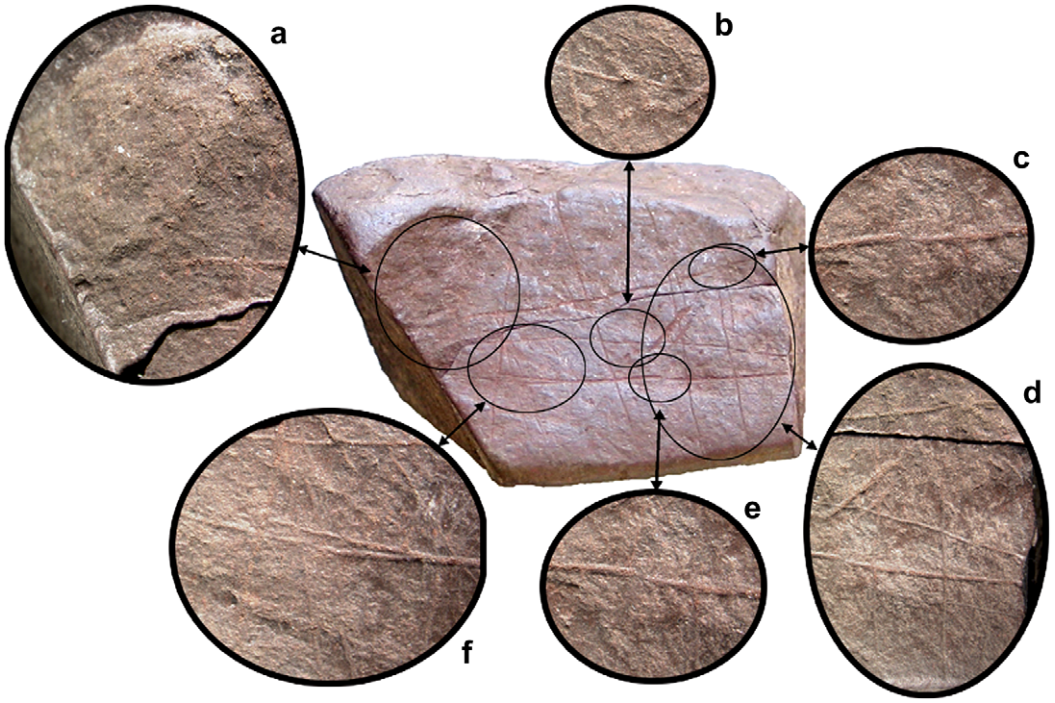


Fig. 7. Specific features of the scored face: (a) junction of line and raised shoulder; (b) discontinuity in middle horizontal line; (c) discontinuity in upper horizontal line; (d) width of middle horizontal vs upper and lower horizontals; (e) discontinuity in lower horizontal line; (f) discontinuity in lower horizontal line.

Microscopic analysis, such as that undertaken by D'Errico et al. (2001), may have helped in differentiate grinding from scoring effects, however such work was beyond the scope of this project. The engraved ochre was one of only two pieces were scored lines occurred on an otherwise unaltered surface. The other piece is mentioned later in the paper.

A final point of interest relates to the break at the right hand edge of the engraved face which truncates the lower horizontals. The break exhibits features of hertzian fracture initiating from the scored face, indicating that piece was broken by a hard hammer blow subsequent to scoring (Fig. 10). It is possible that the break was accidental and resulted from dropping of the artefact, however, and without undertaking extensive experiments, we consider this unlikely. The amount of force necessary to detach such a large flake would require that it was dropped from a substantial height. Moreover, it would need to have landed on the protruding point of a stable, non-yielding surface. Even then, the blow would need to have been incident within a narrow range of angles. Overall, the explanation that the ochre was deliberately broken seems the more parsimonious. Notably, this break does not obviously truncate the ground surface, raising the possibility that the ochre was scored, broken and then ground. The break might thus simply have been a means of modifying the size of the piece prior to use.

That the artefact was scored as a consequence of a specific set of actions, rather than incidentally scored either to test its pigmentatious qualities, or during some other use, appears to be well established by three observations. The first is that the raised shoulder of the ochre adjacent to the scored lines largely precludes those lines from having been formed during the movement of the ochre over another rock face. The presence of this shoulder would have raised the adjacent area off whatever surface the ochre was being moved across. The line which terminates at the junction of the shoulder (Fig. 7a) and the flat face is highly unlikely to have formed under such circumstances. This leaves open a second set of possibilities – that the lines derive from the application of pigment to a sharp edge, or scoring with a sharp edge for the purpose of extracting pigment as suggested by Singer and Wymer (1982: 117) in explanation of finds at Klasies River. We preclude these possibilities with the observations that: (1) the lines were formed as a succession of events, probably involving different implements, and (2) that the long horizontal lines are composites of multiple lines, each commencing approximately where the previous line ceases. That this is not simply the result of discontinuous pressure can be seen clearly from Fig. 7. Instead, this suggests that the formation of lines was the objective, rather than the by-product, of a series of actions. Fig. 11, the only other ochre fragment to exhibit scoring marks on a non-ground surface, provides a far more probable example of grinding to release pigment. Note the deep v-shaped grooves, suggesting repeated abrasion with an edge, which contrast markedly with the shallow, more squarely-profiled scoring lines on the previous piece (Figs. 7 and 8).

The formation of the lines can also be used to argue against the possibility that the surface was scored solely as a means of increasing friction to facilitate grinding (which in this specific case never eventuated). If the scoring was exclusively functional in this sense, why then would attention have been given

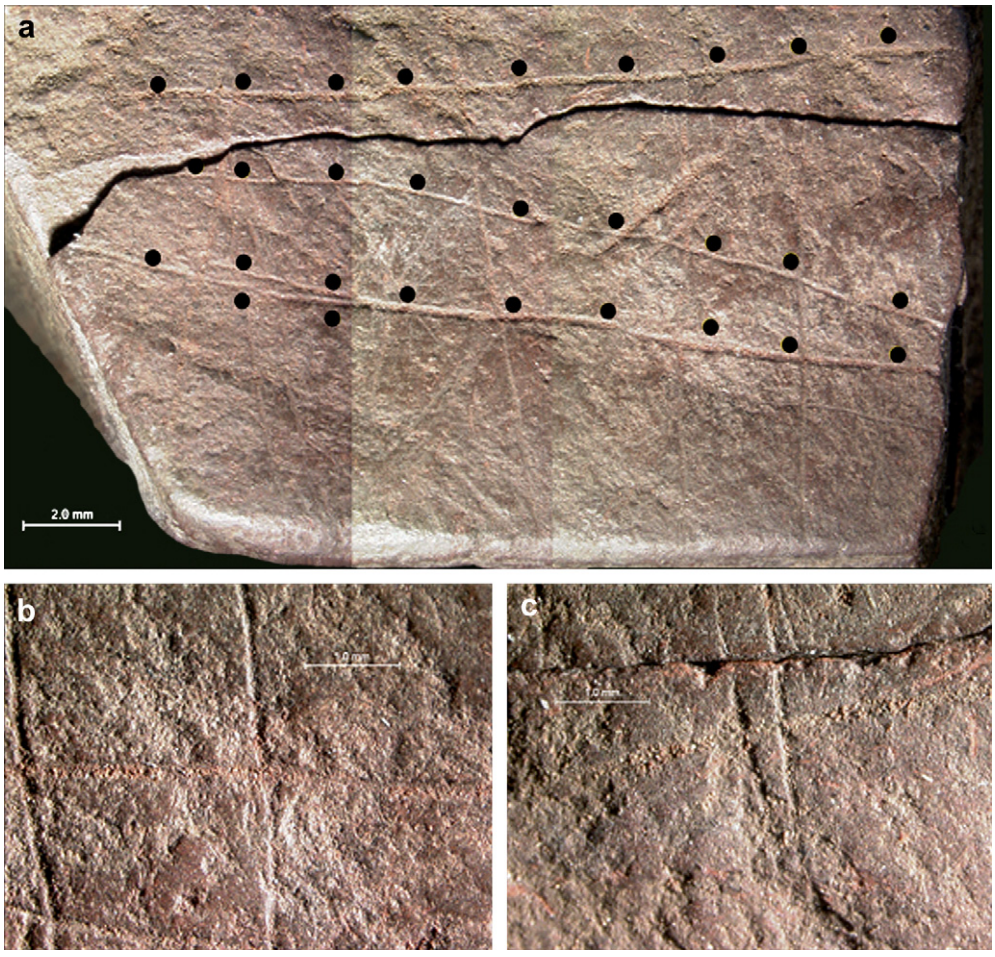


Fig. 8. High resolution images of the scored face. (a) Composite image of scored face. Oblique lighting is used to highlight the horizontal lines. Black dots indicate points at which horizontal line widths were measured. (b) Junction of lines. (c) Junction of lines.

to the formation of single lines through multiple events? Furthermore, evidence of grinding in more than one direction is rare on ground pieces from KKH. What advantage, then, might have been gained from scoring in a cross-hatched pattern? While we do not preclude the possibility of a relationship between the decision to score the ochre and an intent to grind the piece subsequently, we argue that this provides no explanation for the nature or configuration of the scored lines.

## 5. Context and age

Layer D2, in which the ochre was located, was assigned by Mackay (2006) to the Howiesons Poort and the early stages of the post-Howiesons Poort. Howiesons Poort assemblages commonly date to between 50 and 80 kya (Parkington, 1999; Parkington et al., 2005; Grün and Beaumont, 2001; Vogel, 2001; Lombard, 2005; Tribolo et al., 2005; Valladas

Table 1
Width of scored lines at different points across the ochre surface (values are given in mm)

| Line | Point | | | | | | | | | Mean | SD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | |
| Lower | 0.18 | 0.194 | 0.166 | 0.195 | 0.195 | 0.195 | 0.15/0.14 | 0.11/0.14 | 0.203 | 0.169 | 0.031 |
| Middle | 0.104 | 0.106 | 0.103 | 0.155 | 0.116 | 0.099 | 0.108 | 0.083 | 0.093 | 0.103 | 0.01 |
| Upper | 0.198 | 0.138 | 0.134 | 0.158 | 0.176 | 0.176 | 0.198 | 0.194 | 0.165 | 0.171 | 0.024 |
| 1 | 0.113 | 0.115 | 0.124 | 0.122 | 0.121 | 0.121 | – | – | – | 0.119 | 0.004 |
| 2 | 0.086 | 0.076 | 0.122 | 0.121 | 0.13 | – | – | – | – | 0.107 | 0.024 |
| 3 | 0.101 | 0.129 | 0.14 | 0.123 | 0.123 | 0.09 | 0.104 | – | – | 0.116 | 0.026 |
| 4 | 0.098 | 0.111 | 0.133 | 0.094 | 0.11 | 0.138 | 0.285 | – | – | 0.116 | 0.018 |
| 5 | 0.086 | 0.108 | 0.126 | 0.093 | 0.14 | 0.156 | – | – | – | 0.114 | 0.018 |

Note that Lower, Middle and Upper correspond to the horizontal lines, while numbers were allocated to the vertical lines from left to right as shown in Fig. 5. Not all lines were recorded at an equal number of points, due largely to variance in line length. The double values given for the Lower horizontal at 7 and 8 relate to the bifurcation of the line at these points.

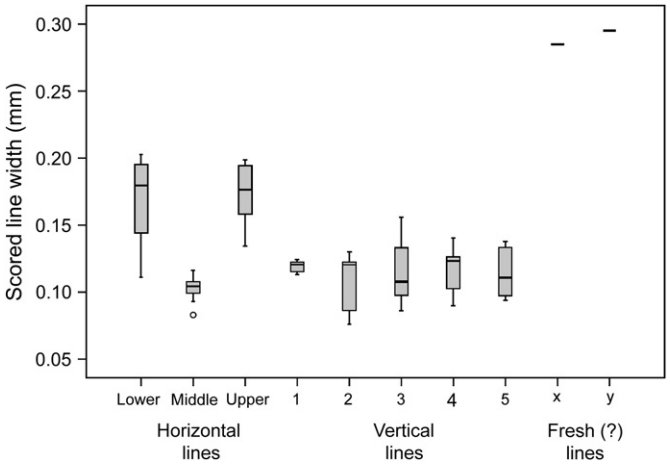


Fig. 9. Box and whisker plots of line widths.

et al., 2005; Wadley and Jacobs, 2006), while post-Howiesons Poort layers at the nearby site of Diepkloof have been dated to >55 000 (Parkington et al., 2005: 480). At Sibudu, post-Howieons Poort layers dating to >50 000 years are typologically similar to KKH layers D2 and D1, while the 33–42 kya layers at Sibudu contain artefacts typologically similar to those in layer D (cf., Mackay, 2006; Villa et al., 2005; Wadley, 2006).

Given these comparisons, the basal date of 32 300 ± 1400 BP from the 1984 excavation is almost certainly too young. Recently renewed excavations at KKH returned $^{14}$C determinations on charcoal of >35 000 (Wk-20242, Wk-20243) from layers more than 250 mm above the upper limits of

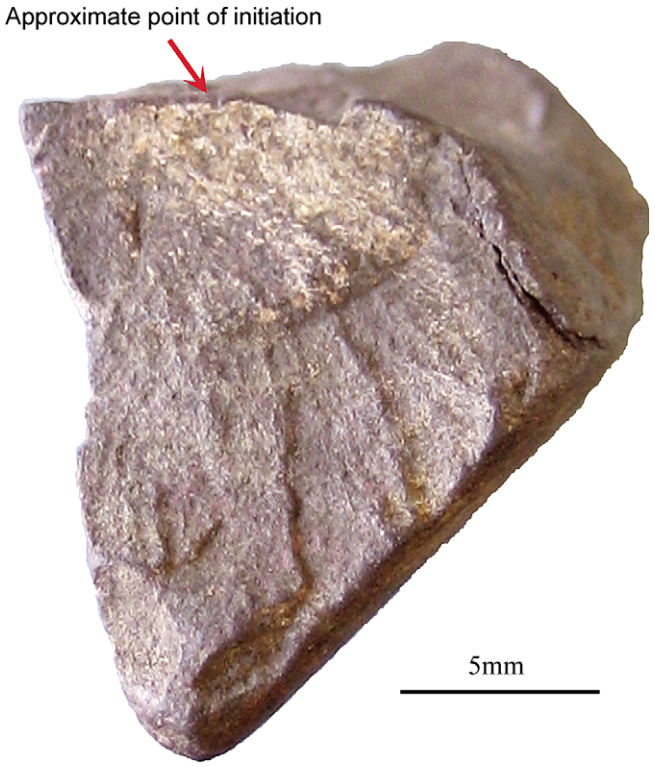


Fig. 10. The hertzian face of the ochre.

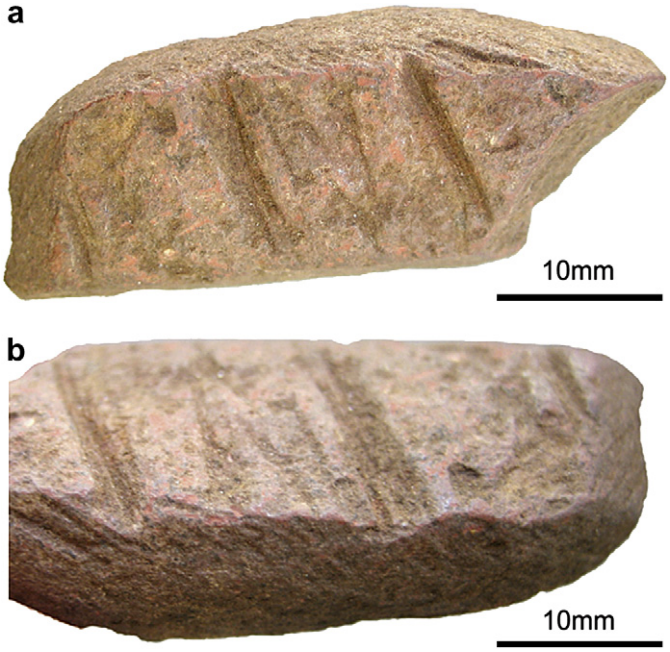


Fig. 11. Deeply incised ochre fragment: (a) plan view; (b) oblique view.

D2. Consequently, it appears probable that the ochre from D2 was deposited with either Howiesons Poort or late MSA post-Howiesons Poort stone artefacts, and that the relevant age of the find is somewhere between 80 000 and 50 000 years. With specific regard to the debate about late Pleistocene human behavioural evolution, the specific *age* of the ochre is largely immaterial. The artefact was recovered from an MSA context and thus necessarily precedes any influx of new items, ideas or population elements which may or may not have accompanied the appearance of the LSA.

## 6. Discussion

Thus far we have referred to the formation of lines across one face of the artefact in terms of 'scoring' rather than engraving, on the basis that the latter term carries an inherent implication of design. The possibility exists, however, that the scoring of the KKH ochre was either incidental or unplanned—an occurrence carrying no element of design and without conceptual significance to its maker. This possibility cannot be entirely precluded. As we have noted, however, the nature of the lines—both the cross-hatching and the fact that some lines were the result of multiple scoring events—seems to render this suggestion improbable. Indeed, the formation of lines through a series of actions strongly implies an element of design, regardless of whether it was expediently formulated or realised over multiple stages. By design we require only that the artisan(s) undertook the act(s) of scoring in order to give physical manifestation to a mental concept. Even if we limited this to one or other of the lines as isolated instances, it nevertheless remains probable that an artisan began with the conception of a line and undertook multiple co-ordinated actions in order to realise that concept. On this basis we suggest that it is

reasonable to describe the artefact presented in this paper as 'engraved'.

Thus describing the ochre as 'engraved' allows us to suggest that it is a different class of find from otherwise scored or striated pieces. As such we feel it is reasonable to classify this find with the published engraved pieces from Blombos Cave. This leads us to two relatively straightforward, but nonetheless important assertions. First, the KKH ochre supports the contention, based on finds from Blombos Cave, that MSA people engraved apparently non-representational designs into soft pigmentatious rock. Second, it expands the spatial and temporal range of ochre engraving during the MSA to a new site and a new technological context. Currently, though scored or otherwise marked finds are known from several MSA sites (Cain, 2006; D'Errico and Henshilwood, 2007), Blombos is the only other site from which engraved ochre has been recovered. Furthermore, Blombos contains a sequence of Still Bay and earlier MSA, though no Howiesons Poort or younger MSA. The rather singular nature of the Blombos finds has limited any argument that engraving of ochre was other than an isolated, atypical occurrence in the MSA. The Klein Kliphuis ochre extends the occurrence of such behaviours both in space, and, given that Howiesons Poort artefacts overlie Still Bay finds in most contexts (e.g., Sibudu Cave, Wadley, 2007; Diepkloof, Rigaud et al., 2006; Peers Cave, Peers, 1927), probably time as well.

Whether or not engraved ochre necessarily carries any symbolic significance is a different matter. In order to be symbolic, it is necessary that the design has a cognitively constructed and conventionally maintained relationship with some other thing, either physical or conceptual (Chase, 1991; Noble and Davidson, 1991). Clearly, no such relationship can be demonstrated on the basis of the available evidence. Of course, the same argument can be made with regard to the engraved ochre from Blombos Cave. Though there is almost a self-evident sense of meaningfulness to the Blombos piece, this is not, in truth, sufficient to make any argument for its symbolic significance in the sense above.

If we cannot infer symbolic significance from any given piece of engraved ochre, we might ask whether there are any inferences we can make from such pieces beyond that they occur in the MSA. One potential line of evidence for which we might search is the existence of enduring or repeated designs—conventions—through time and space. The presence of such conventions with a spatially/temporally structured distribution might allow us to move from 'design' to 'motif', and to imply a degree of comparability between these designs and artistic behaviours common to the LSA/UP.

Any such comparisons, however, would have to be treated with great wariness. For example, the recurrence of cross-hatched engravings in multiple instances might be taken to imply the existence of a convention (e.g., Mellars, 2006), however, cross-hatching is also the simplest of schemes likely to be considered to reflect an element of design. Thus cross-hatched pieces in two different settings may *imply* a convention, whereas their identification may in fact be reflecting minimum archaeological criteria for the acceptance of design. Recently Bouzouggar et al. (2007); (also Zilhão, 2006) have suggested that the use of *Nassarius* shells as beads constitutes a convention, though presently the argument seems tenuous given the 10 000 years and 8000 km which separate their occurrence in Morocco and South Africa. Moreover, *Nassarius* shell beads are known to occur in the southern African LSA. If the use of *Nassarius* shells as beads *was* the result of a convention, we would need to reconsider the cultural implications of the very substantial variation which occurs in stone artefact assemblages in the intervening space and time.

We note also that the definition of 'design' given here, and by extension its relationship to 'motif' could equally be applied to stone artefacts bearing repeated form and a spatially and/or temporally structured distribution (similar notions have been expressed elsewhere, e.g., Foley and Lahr, 2003; Marean and Assefa, 2005; McBrearty and Brooks, 2000). It is tempting to suggest that a distinction be drawn between forms which are constrained by function and those which are not, however, this would require a reliable method for distinguishing functional from non-functional elements of implement design. Moreover, even when some design elements of an artefact can be inferred to be non-functional, they may nevertheless be the product of habitual processes ('passive' in Sackett's (1982, 1986) sense (cf., Chase, 1991)). Perhaps the advantage of such a line of argument as applied to engraved ochre is that design in this case seems necessarily both 'active' and more than is functionally required.

The concept of conventions brings us to a final point: that there is as yet little potential for such conventions in southern Africa, primarily because there is so little engraved ochre. It may be that engraved ochre occurs more frequently than presently thought but has not been identified as such. The circumstances in which the KKH ochre were discovered imply as much. Yet it remains that even in those assemblages from which engraved ochre has been recovered it is rare. Based on data from Henshilwood et al. (2001), Blombos Cave yielded 5.83 kg (8224 pieces) of ochre, of which two pieces were presented as engraved. Similarly, KKH returned an assemblage of hundreds of pieces, only one of which satisfies our criteria for 'engraving'. There seem to be two obvious possibilities for why this might be so.

The first possibility, and currently favoured model, is that engraving of ochre was simply something which occurred very rarely in the MSA. The second possibility is that engraving of ochre was more widespread than it appears to be, but that its prevalence has been obscured by events subsequent to engraving. Given the relatively robust nature of the material, we consider taphonomic explanations unlikely. One possibility, noted above, is that scoring of ochre began as a means either of testing the suitability of the material to provide pigment, or of increasing friction on a surface to be ground. Some scoring patterns may subsequently have become elaborate to the point at which design became an element of the process. These designs might thus have been made in the knowledge that they would then be destroyed. The fact that the KKH ochre was probably struck and broken after engraving but before grinding supports the possibility of destructive post-engraving actions. Otherwise, however, like the notion of

conventions, this suggestion lacks empirical support, and the depiction of ochre-engraving as a very rare activity in the MSA remains the most parsimonious explanation of the observed pattern.

## 7. Conclusions

Clarifying the timing and nature of the behavioural evolution of *H. sapiens* is a central charge of archaeological research, and one linked to a core question of the humanities generally: what is it to be human? The most effective means of pursuing this matter archaeologically remains open to debate, and, in light of this uncertainty, the implications of pieces such as the engraved ochre from KKH are unclear. In this regard, the concept of 'modernity' and its seemingly inextricable linkage to behaviours that need not have any archaeological expression, has probably obscured substantially more than it has clarified.

Our suspicion is that the KKH ochre, the finds from Blombos, and the various other shell beads all had symbolic significance to their makers, and that some MSA people thus had the capacity to create and deploy symbols, and to store information externally. However, we must also accept the possibility that the motivations for engraving and breaking this particular piece were far more mundane—including testing the fragment for pigment colour and/or breaking it up into more useable pieces.

Symbolic or otherwise, the key issue remains the infrequency of such finds in MSA/MP contexts. Sample size, preservational attrition and population density are all potentially important variables in accounting for the pattern, though none of these factors can be invoked *a priori* as a basis for rejecting the null hypothesis that such items were simply not produced regularly or frequently at this time. Given these points, and in light of the current state of the record, Cain's (2006: 679) description of such finds as "enigmatic" seems apposite.

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