Università degli Studi di Ferrara

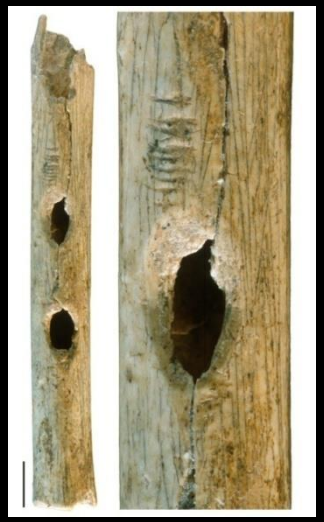
Marco Peresani

Cronologie e culture del Paleolitico

Lezione 14 – African middle stone age and modern behavior

20 years ago
The path to attain modern creativity was short, abrupt and exclusively associated with Anatomically Modern Humans





abrupt origin in Europe?

Archeological signatures of behavioral modernity according to McBrearty & Brooks, 2001

- **Abstract thinking**, the ability to act with reference to abstract concepts not limited in time or space.

- **Planning depth,** the ability to formulate strategies based on past experience and to act upon them in a group context.

- **Behavioral, economic and technological innovativeness.**

- **Symbolic behavior,**the ability to represent objects, people, and abstract concepts with arbitrary symbols, vocal or visual, and to reify such symbols in cultural practice.

Traits defining behavioral modernity according to McBrearty & Brooks

Ecology

- Range extension of previously unoccupied regions
- Increased diet breadth

Technology

- New lithic technologies: blades, microblades, backing
- Standardization within formal tool categories
- Hafting and composite tools
- Tools in novel materials, e.g., bone, antler
- Special-purpose tools, e.g., projectiles, geometrics
- Increased numbers of tool categories
- Geographic variation in formal categories
- Temporal variation in formal categories
- Greater control of fire

Traits defining behavioral modernity according to McBrearty & Brooks

Economy and social organization

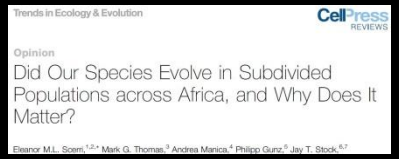
- Long-distance procurement and exchange of raw materials
- Curation of exotic raw materials
- Specialized hunting of large, dangerous animals
- Scheduling and seasonality in resource exploitation
- Site reoccupation
- Intensification of resource extraction (aquatic and vegetable)
- Long-distance exchange networks
- Group and individual self-identification through artefact style
- Structured use of domestic space

Symbolic behavior

- Regional artefact styles
- Self-adornment, e.g., beads and ornaments
- Use of pigment
- Notched and incised objects (bone, egg shell, ocher, stone)
- Image and representation
- Burials with grave goods, ochre, ritual objects

We challenge the view that our species, *Homo sapiens*, evolved within a single population and/or region of Africa. The chronology and physical diversity of Pleistocene human fossils suggest that morphologically varied populations pertaining to the *H. sapiens* clade lived throughout Africa. Similarly, the African archaeological record demonstrates the polycentric origin and persistence of regionally distinct Pleistocene material culture in a variety of paleoecological settings.

Genetic studies also indicate that present-day population structure within Africa extends to deep times, paralleling a paleoenvironmental record of shifting and fractured habitable zones. We argue that these fields support an emerging view of a highly structured African prehistory that should be considered in human evolutionary inferences, prompting new interpretations, questions, and interdisciplinary research directions.


Trends in Ecology & Evolution

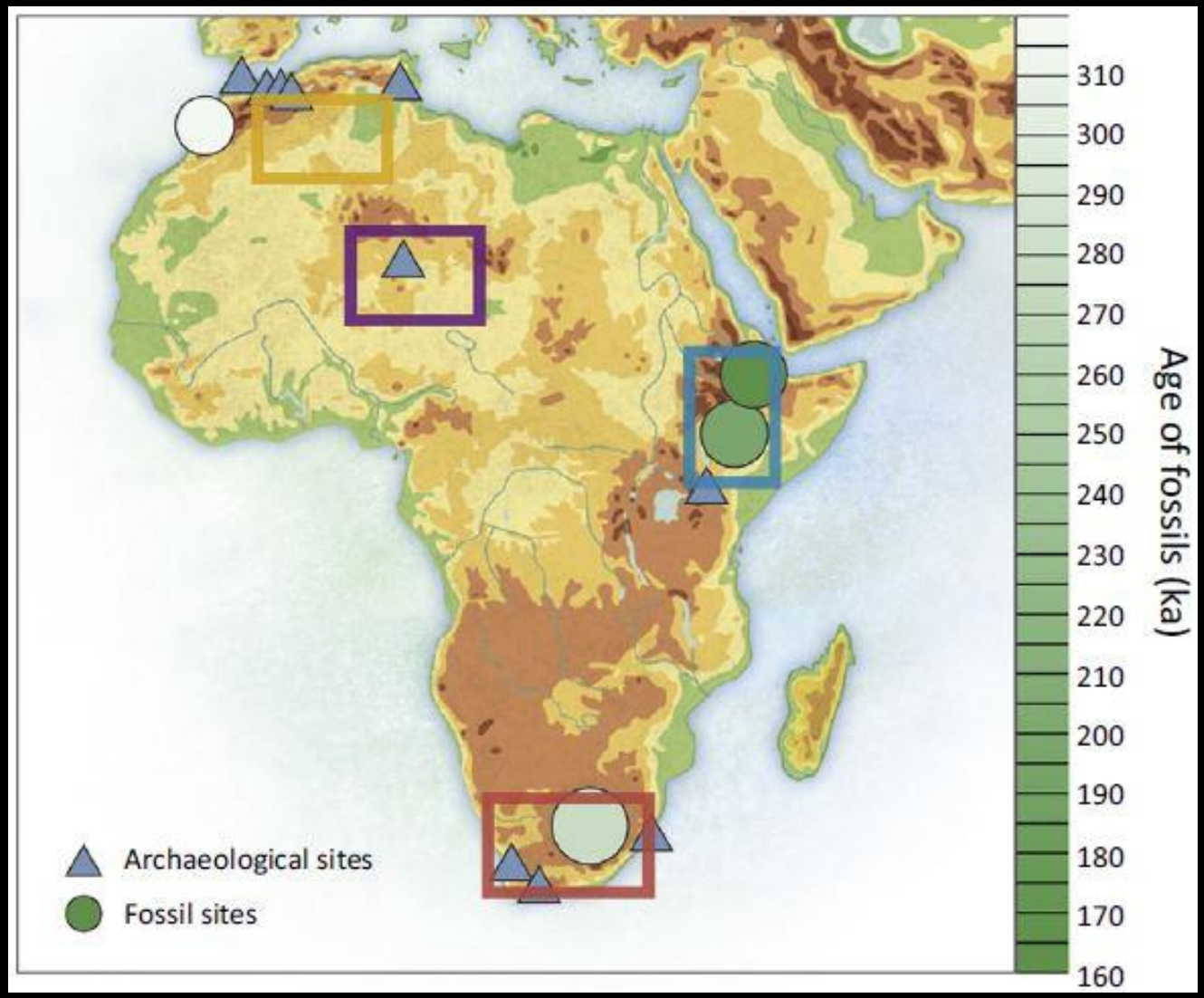
CellPress REVIEWS

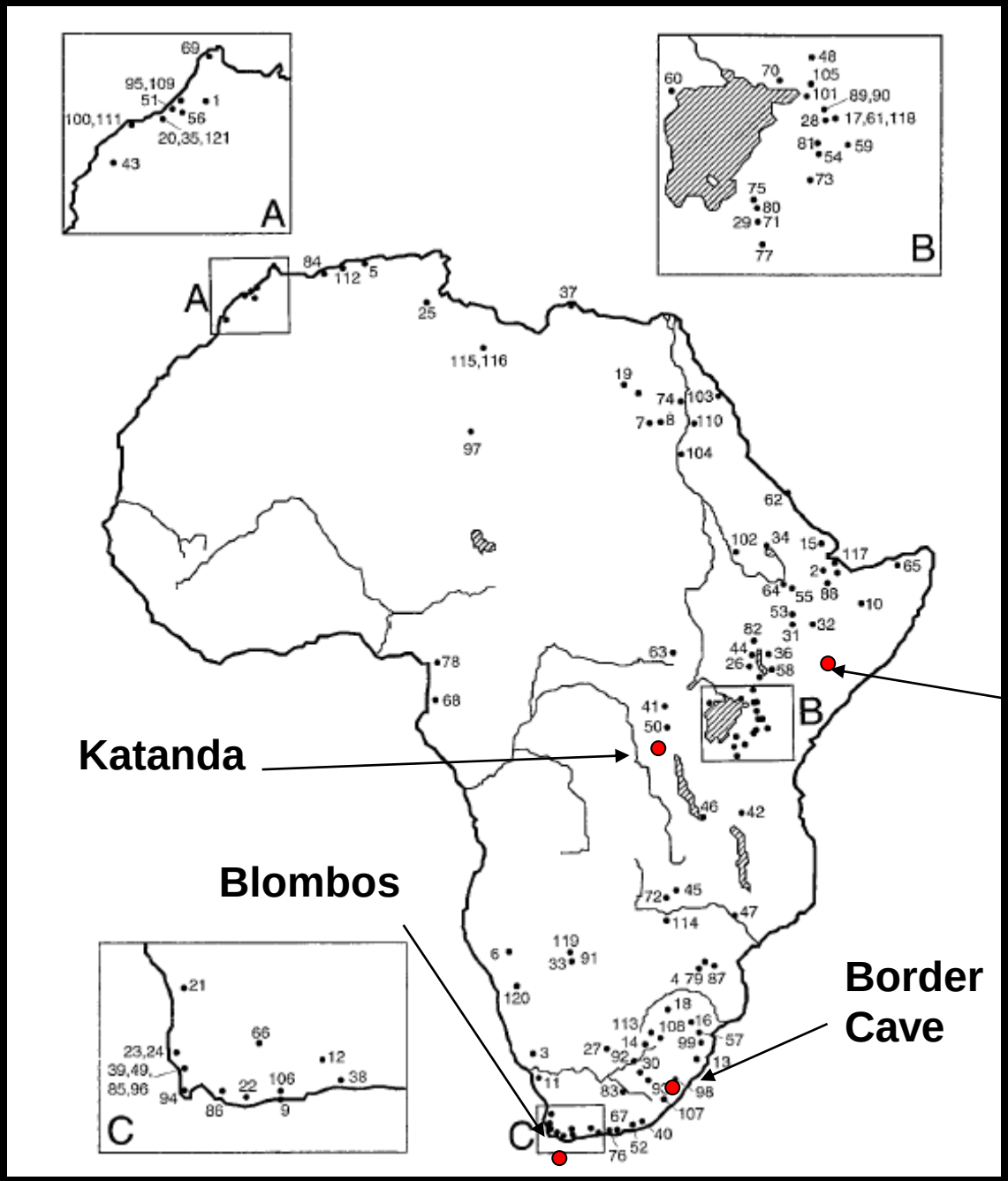
Opinion

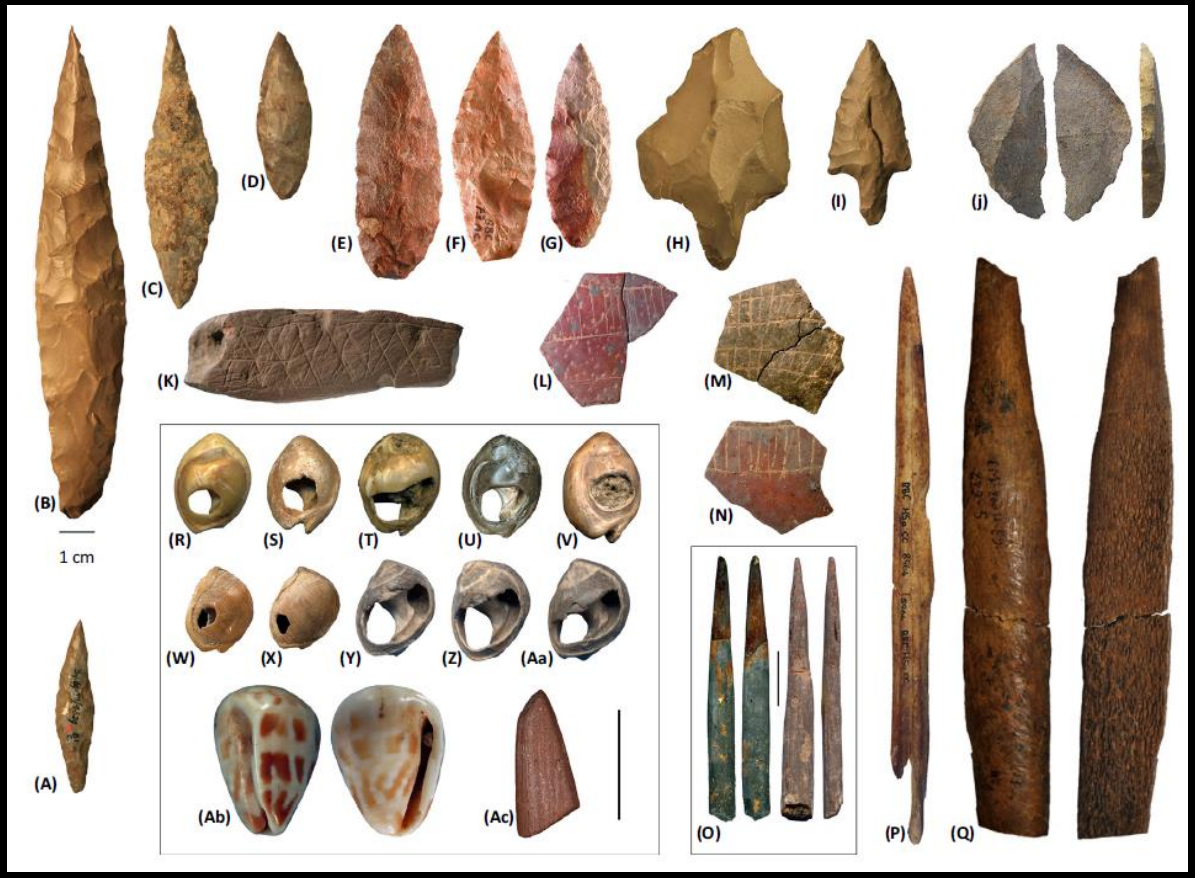
Did Our Species Evolve in Subdivided Populations across Africa, and Why Does It Matter?

Evolutionary Changes of Braincase Shape from an Elongated to a Globular Shape. The latter evolves within the H. sapiens lineage via an expansion of the cerebellum and bulging of the parietal. (Left) Micro-computerized tomography scan of Jebel Irhoud 1 (300 ka, North Africa). (Right) Qafzeh 9 (95 ka, the Levant).

African Middle Stone Age sites (ca. 280-25/18 ky BP)

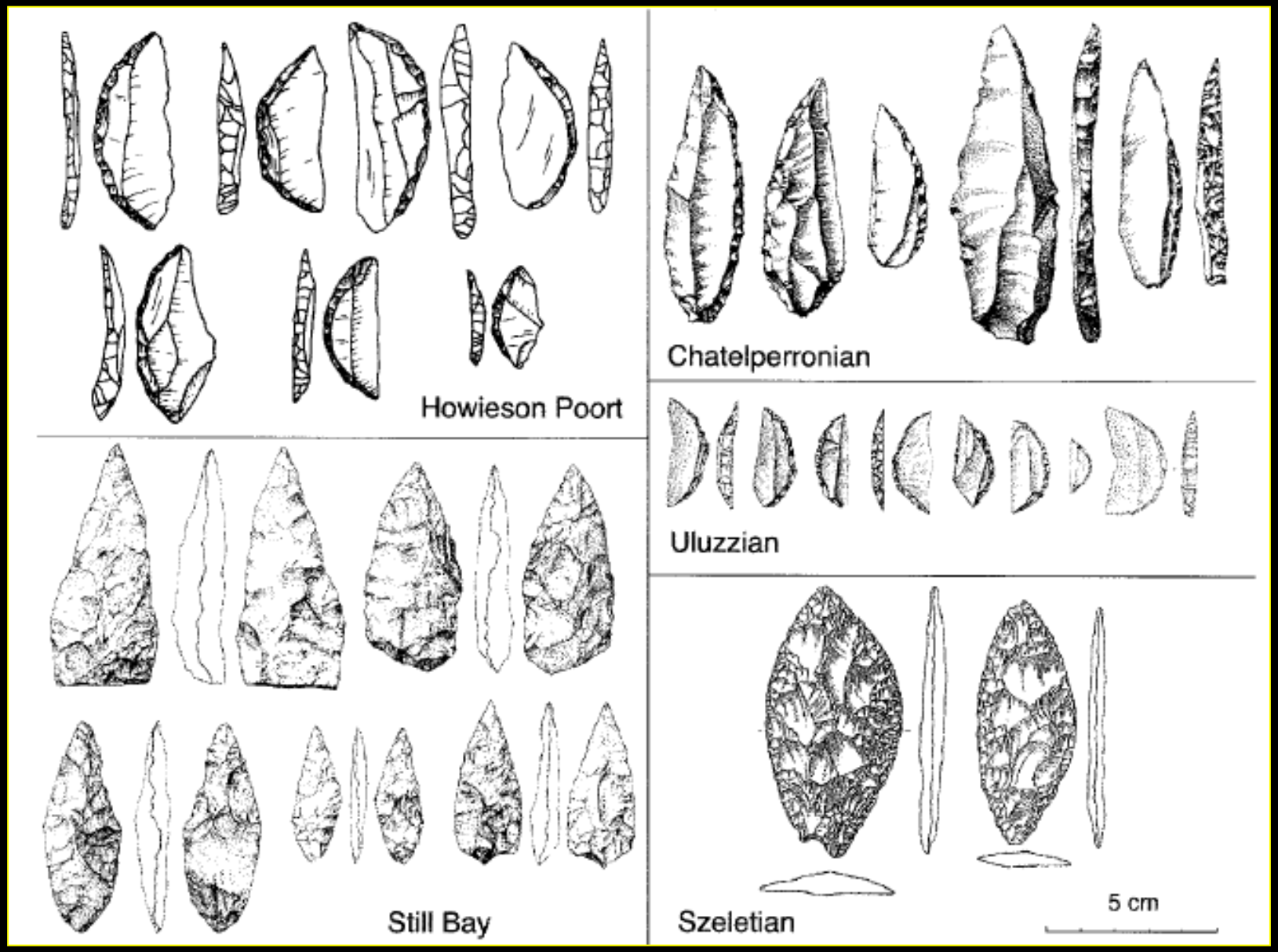



Herto
Katanda
Blombos
Border Cave
A
B
C



Middle Stone Age Cultural Artefacts. (A–D) Bifacial foliates from northern Africa; (E–G) Bifacial foliates from southern Africa (Blombos); (H,I) Tanged tools from northern Africa; (J) Segmented piece bearing mastic residue from southern Africa (Sibudu); (K) Engraved ochre fragment (Blombos); (L–N) Engraved ostrich eggshell fragments (Diepkloof); (O,P) Bone points from SA and (Q) from NA. (R–V) Perforated *Trivia gibbosula* shells from NA; (W–Aa) Perforated *Nassarius kraussianus* shells from Blombos; (Ab) *Conus ebraeus* shell bead (Border Cave); (Ac) Ochre fragment shaped by grinding (Blombos). All scales are 1 cm.

Backed pieces and foliates associated with the late Southern African Middle Stone Age and transitional technocomplexes in Europe



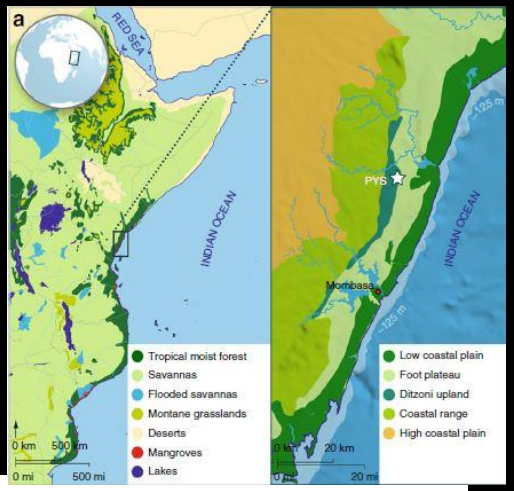
Panga ya Saidi

ARTICLE

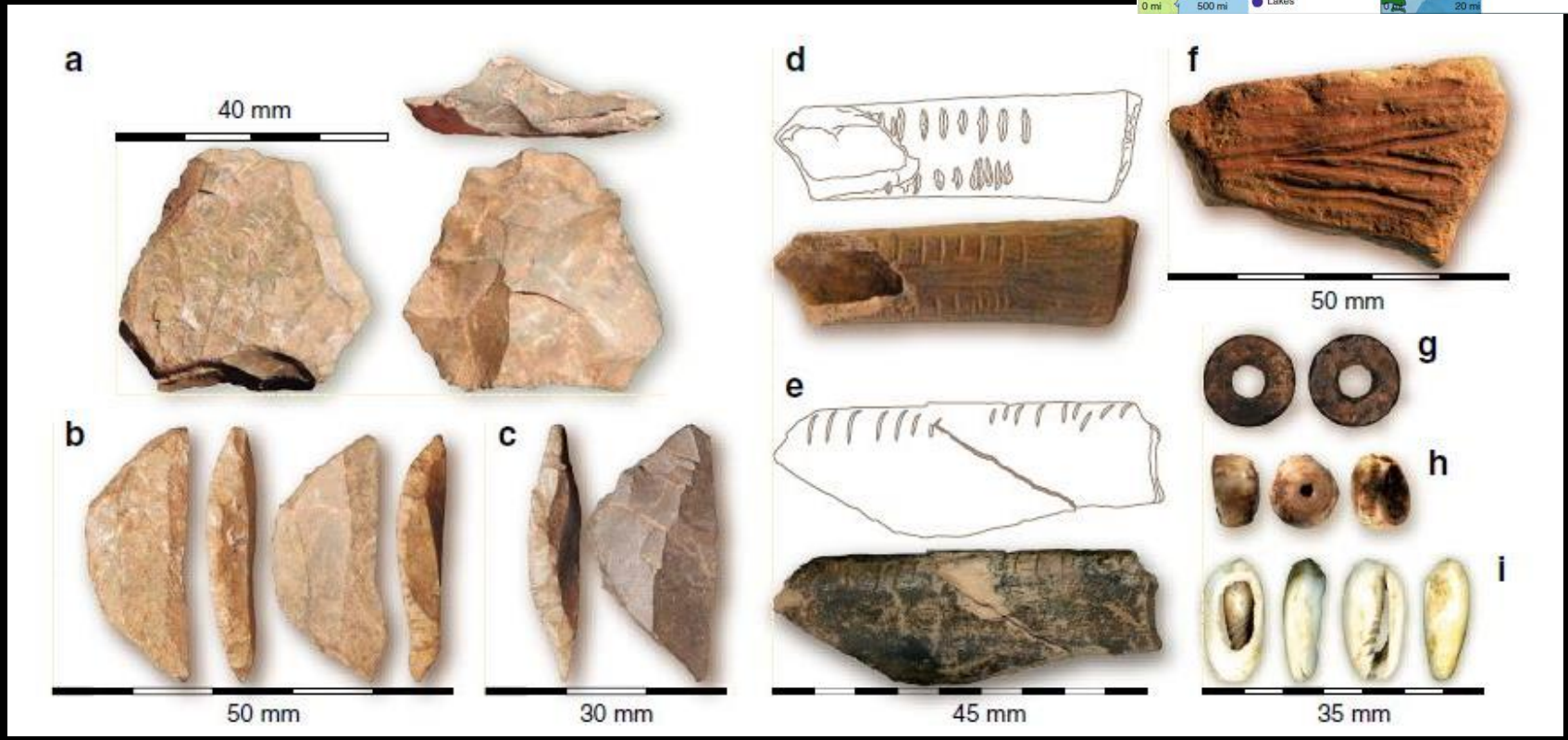
DOI: 10.1038/s41467-018-04057-3 OPEN

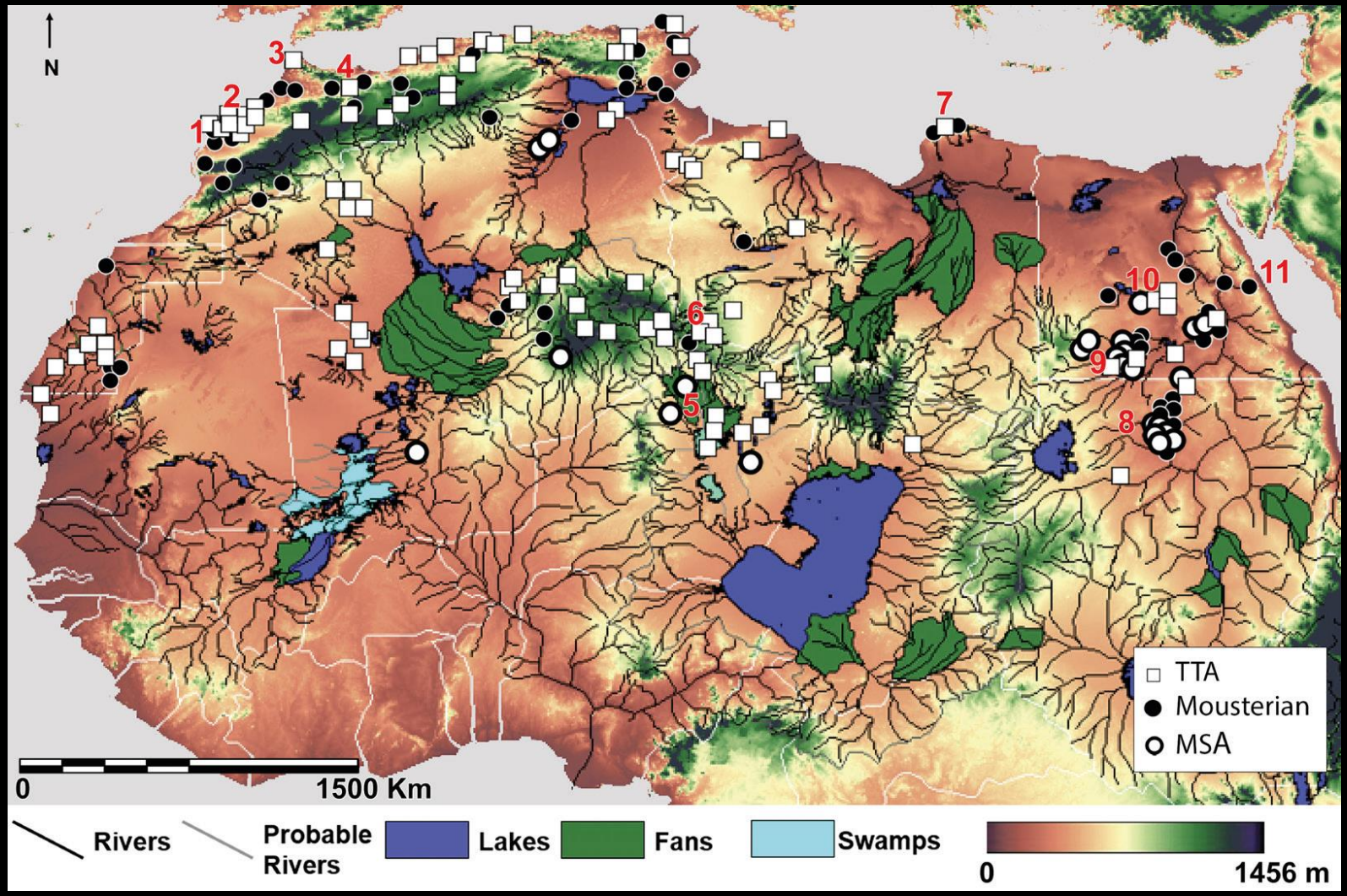
78,000-year-old record of Middle and Later stone age innovation in an East African tropical forest

Ceri Shipton[1,2,3], Patrick Roberts[4], Will Archer[5,6], Simon J. Armitage[7,8], Caesar Bita[9], James Blinkhorn[4,10],

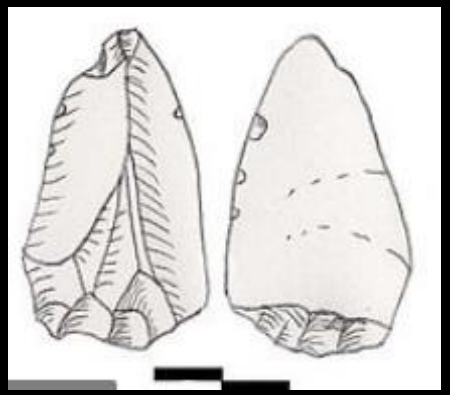


Selected artifacts. a Levallois core from Layer 11. b Two backed lithic artifacts from Layer 11. c Backed lithic artifact from Layer 3. d Notched bone from Layer 8. e Notched bone from Layer 9. f Ocher crayon from Layer 10. g Ostrich eggshell bead from Layer 8. h Conus shell bead from Layer 16. i Gastropod shell bead from Layer 4





North African topography, palaeohydrology and distribution of a range of reported MSA sites north of 18° described as either Aterian (tanged tool assemblages-TTA), Mousterian or MSA, with key sites numbered.



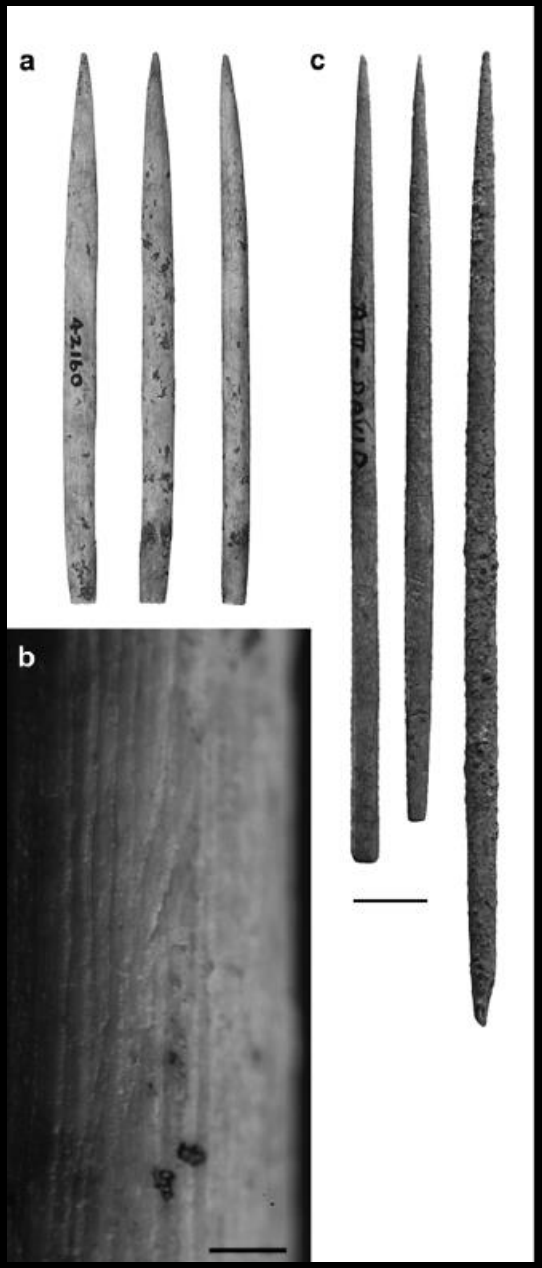
Tab. 1 – Industry names proposed for and associated with the North African MSA, together with descriptions, as well as other 'Upper Palaeolithic' industries mentioned in the text.

INDUSTRY NAME	DESCRIPTION
Aterian	Typically described as a 'Mousterian' with tanged tools, bifacial foliates and Levallois and dated to between ~145-30ka. Distribution roughly corresponds with North Africa from the Nile westwards.
Denticulate Mousterian	'Mousterian' industry with high indices of denticulates described in the Western Desert region. Undated.
Emiran	'Upper Paleolithic' tools made on volumetric blade cores and Levallois cores, ventrally and basally thinned 'Emireh' points found in the Levant from around ~47ka and proposed as possibly present in northeast Africa in the form of Emiran points.
Generalized MSA	Levallois or discoidal technology with generic retouched tools (e.g. scrapers, denticulates) found across North Africa and largely undated.

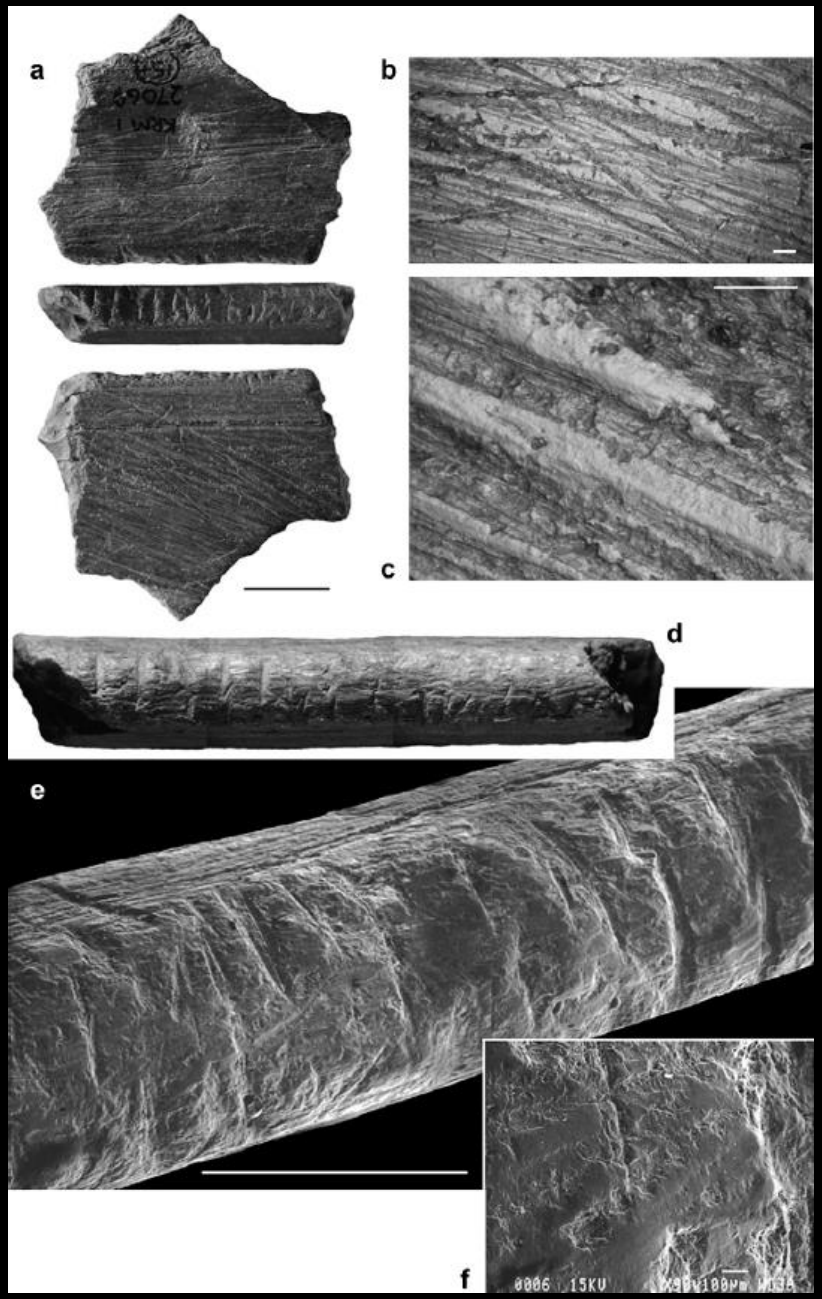
Bone awls from Blombos cave, Middle Stone Age (MSA) levels: South- Africa, 75.000 years BP

Additional evidence for bone technology in the southern African Middle Stone Age

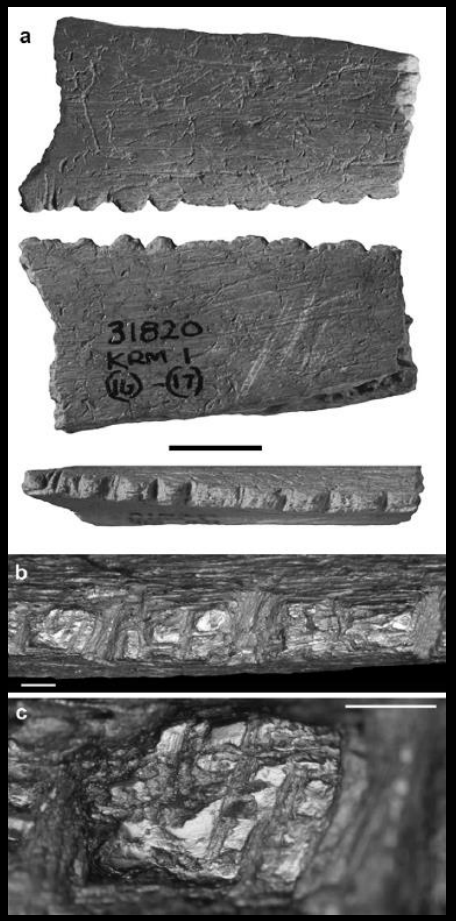
Francesco d'Errico [a,b,*], Christopher S. Henshilwood [c,d]



(a) SAM-AA 42160: Bone point from Klasies River, Howiesons Poort, layer 10c (e?) cave 1a; (b) detail of the surface with longitudinal striations produced by scraping; (c) probable arrow points from the LSA layers at Nelson Bay Cave; (d) San arrow heads composed of a thin arrow point and a thicker linkshaft connected with vegetal thread.



(a) Notched rib from Klasies River : MSA II, Layer 16-17, cave 1a].
(b) close-up view illustrating the deep notches produced by the to-and-from movement of a retouched cutting edge; (c) salient area between two notches showing a polish that was partially removed by a groove produced by a single passage of the cutting edge.



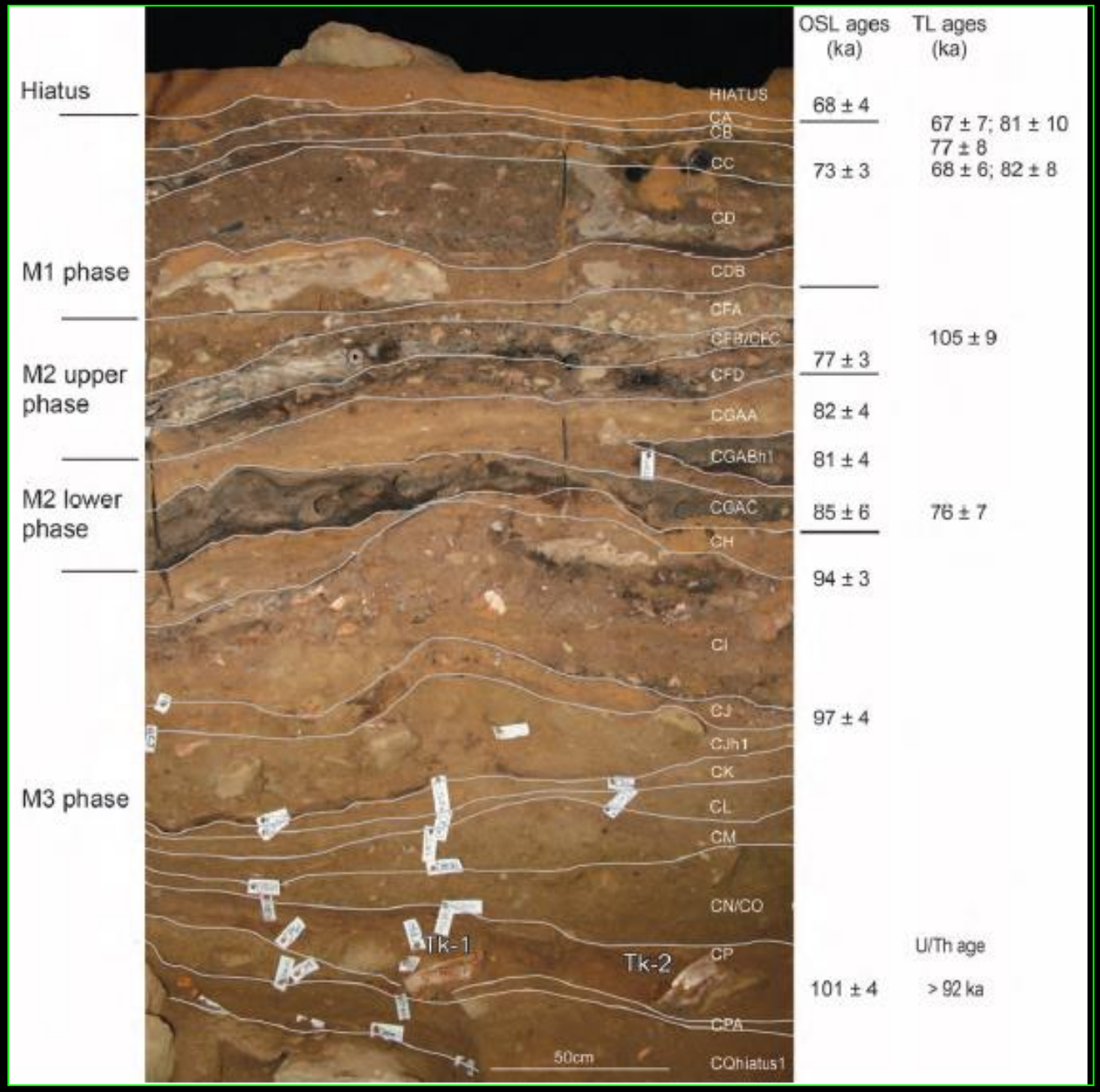
Blombos Cave

Klipdrif,
De Hoop

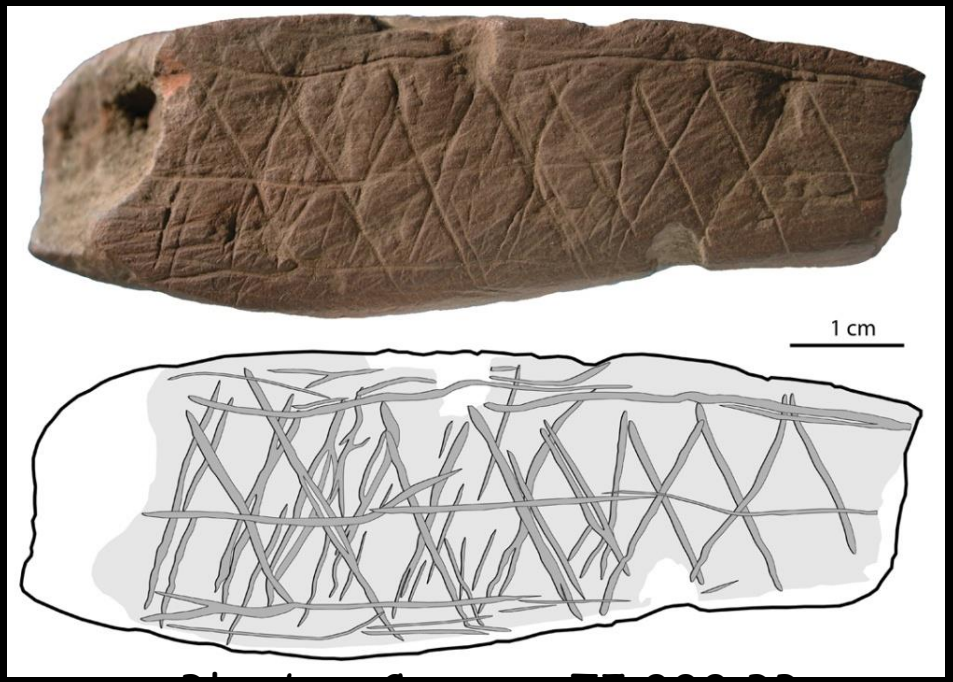
< 2 ka

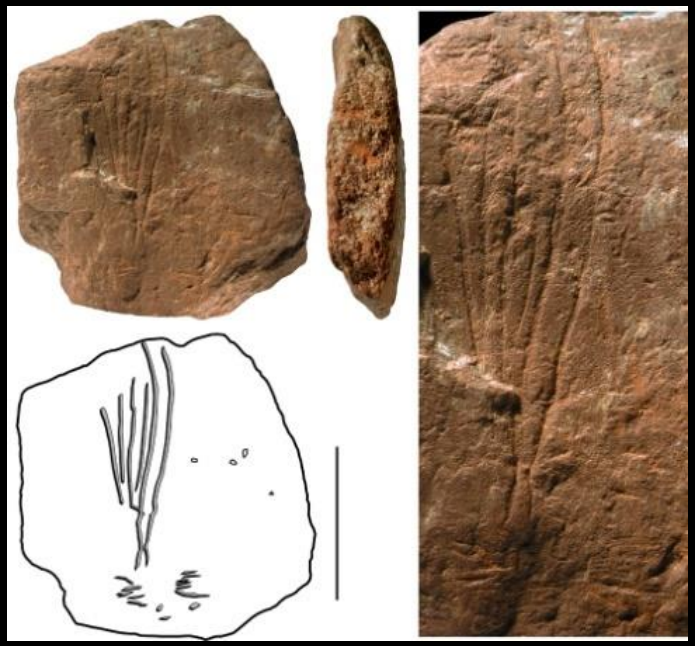
c.70 ka

c. 100-140 ka



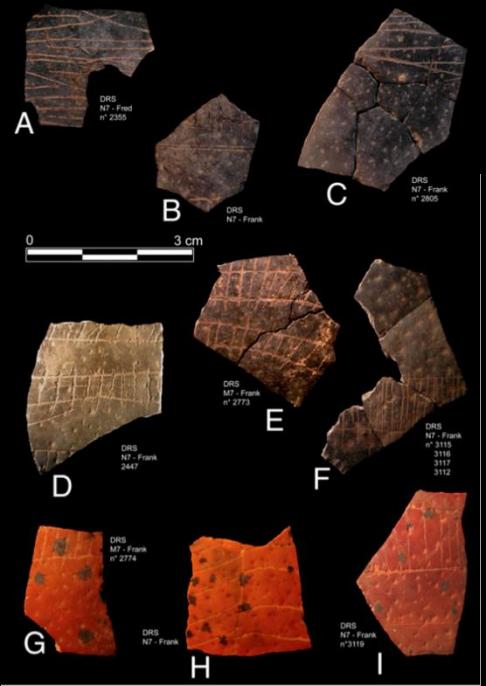
South section of Blombos Cave showing layers, phases, and ages. The ages shown here were determined with the OSL, TL, and uranium/thorium (U/Th) methods.

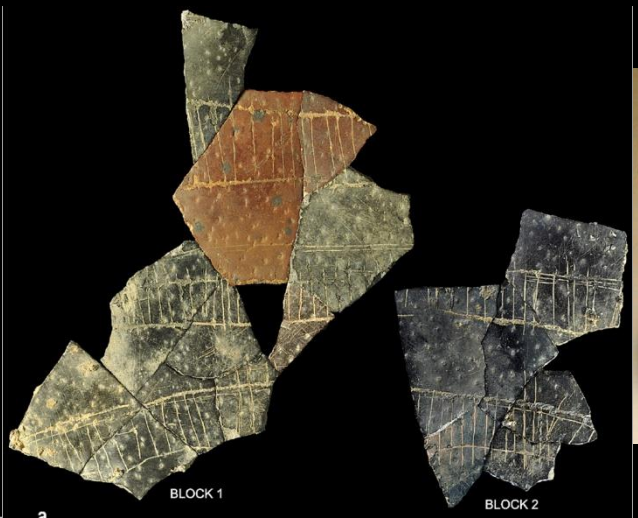




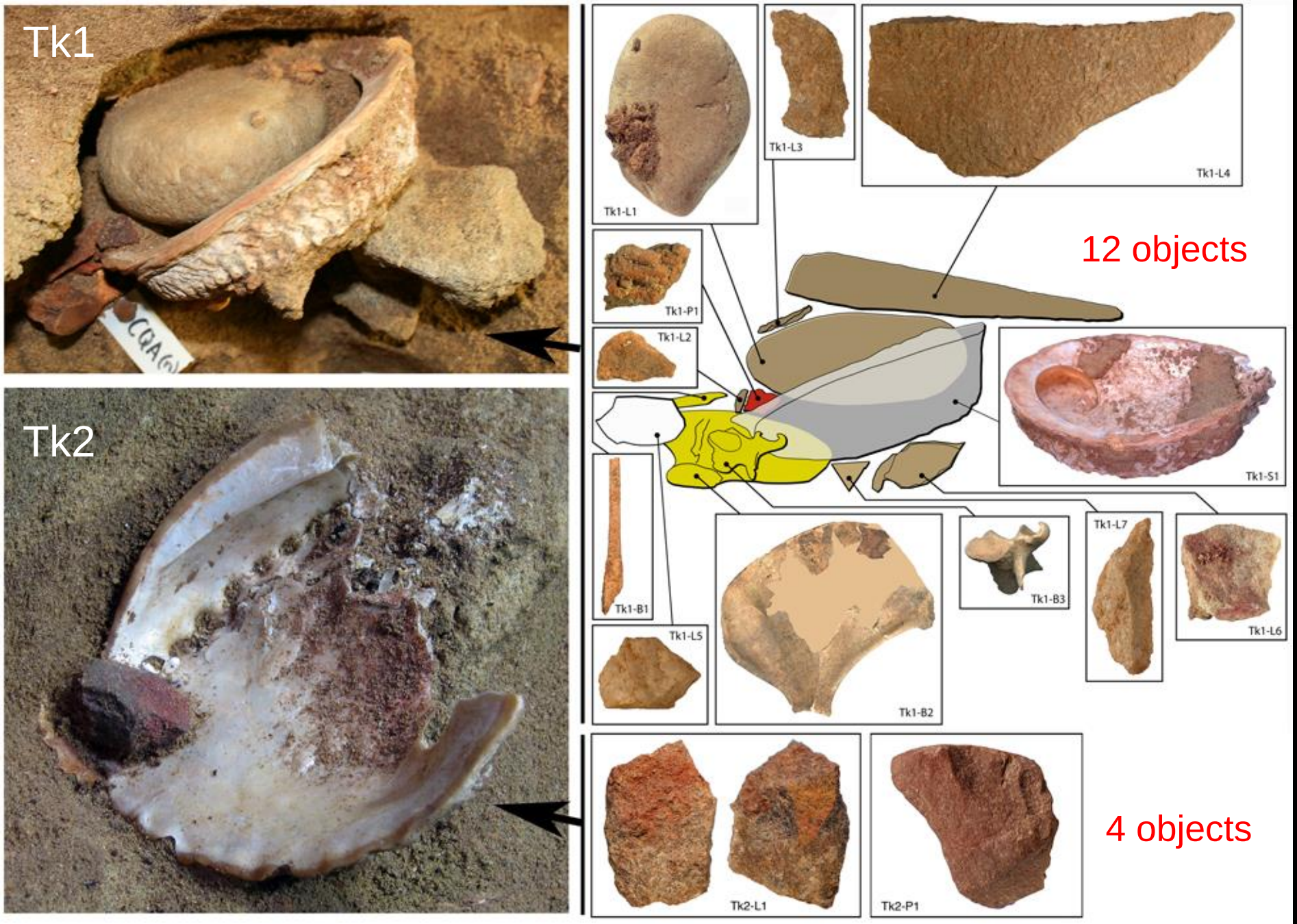
Blombos Cave, ca 100,000 BP

Engraved ostrich eggshell containers,
Diepkloof,South Africa 60,000 BP or 100-52,000 BP



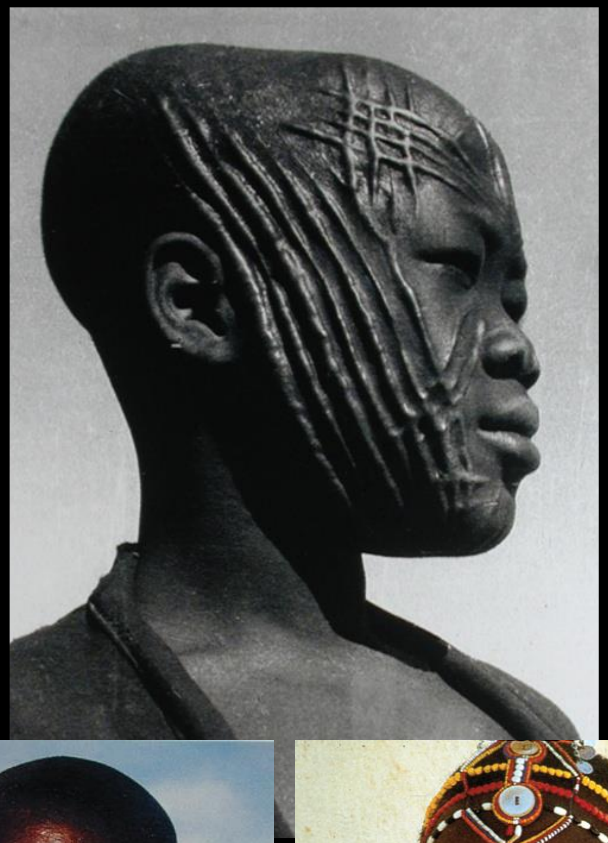


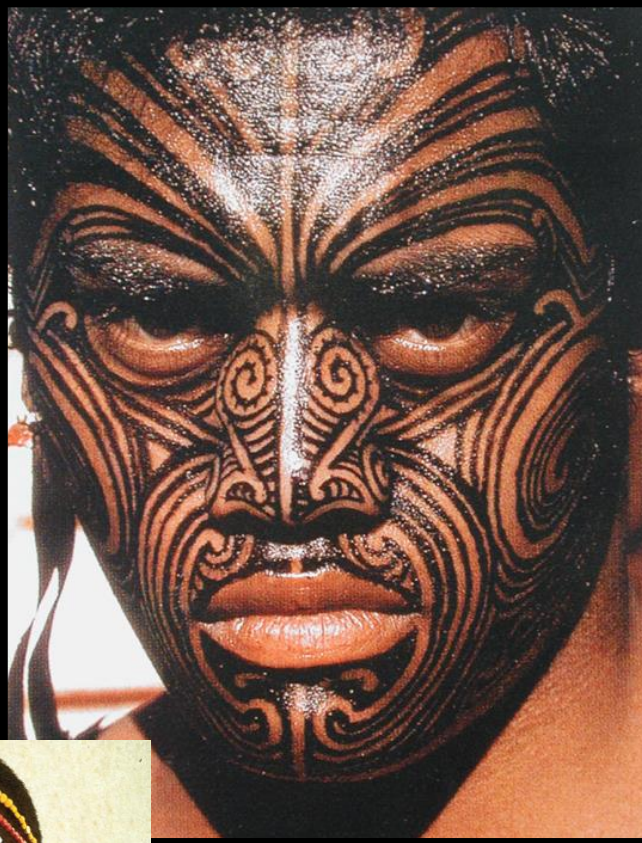
Blombos Cave

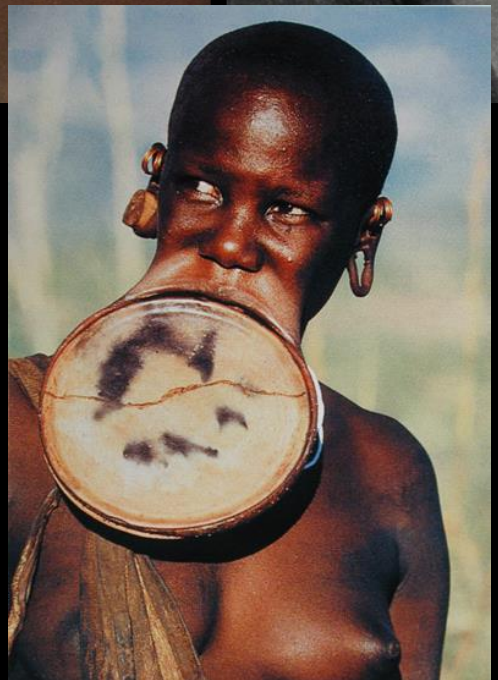

Tk1
Tk2
Tk1-L1
Tk1-L3
Tk1-L4
Tk1-P1
Tk1-L2
Tk1-S1
Tk1-B1
Tk1-L5
Tk1-B2
Tk1-B3
Tk1-L7
Tk1-L6
12 objects
Tk2-L1
Tk2-P1
4 objects

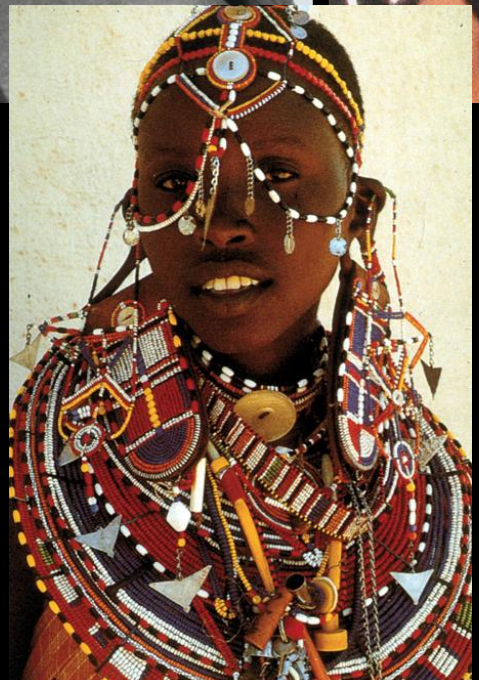
EARLIEST PIGMENT USE …

- Olduvai Gorge, Tanzania ~ 1 200 ky (Leakey 1958:1100, Sagona 1994)
- Wonderwerk Cave, South Africa, ~ 780 ky (Beaumont & Vogel 2006)
- Twin Rivers in Zambia ~ 260 ky to 400 ky (Barham 1998, 2002, 2007)
- Olorgesaillie, Kenya, 340-490 ky (Tryon & McBrearty 2002).
- Kabwe, Zambia, ~ 300 000 and 400 000 years ago (Barham *et al.* 2002)
- Kapthurin in Kenya, ~ 285 000 years (McBrearty 2001)
- Duinefontein II, South Africa, ~ 270-290 (Cruz-Uribe *et al.* 2003).
- Border Cave, South Africa ~ 277 ky 170 (Grün & Beaumont 2001).
- Sai Island, Sudan, 200 ky (van Peer *et al.* 2004).
- Pinnacle Point 13 B ~ 164 ky (Marean *et al*. 2007).
- Limpopo River MSA sites, South Africa, 190- 130 ky
- Blombos Cave 120 ky (Henshilwood *et al.* 2009:3; Watts 2009:90).









Cueva de los Aviones
125 ka BP
Zilhao et al. *ScRep.* 2018

Oued Djebanna
35 ka BP
(90 – 60 ka BP)
Vanhaeren et al. *Science* 2006

Skhul
135 - 100 ka BP
Vanhaeren et al. *Science* 2006

Qafzeh
92 ka BP
Bar-Yosef Mayer et al. *JHE 2009*

Taforalt
Ifri n'Ammar
Contrebandier
Rhafas
90 – 60 ka BP
d'Errico et al. *PNAS* 2010

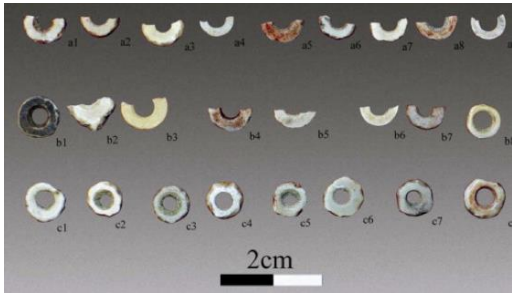
Klasies River
60 ka BP

Sibudu
70 ka BP
d'Errico et al. *JAS* 2008

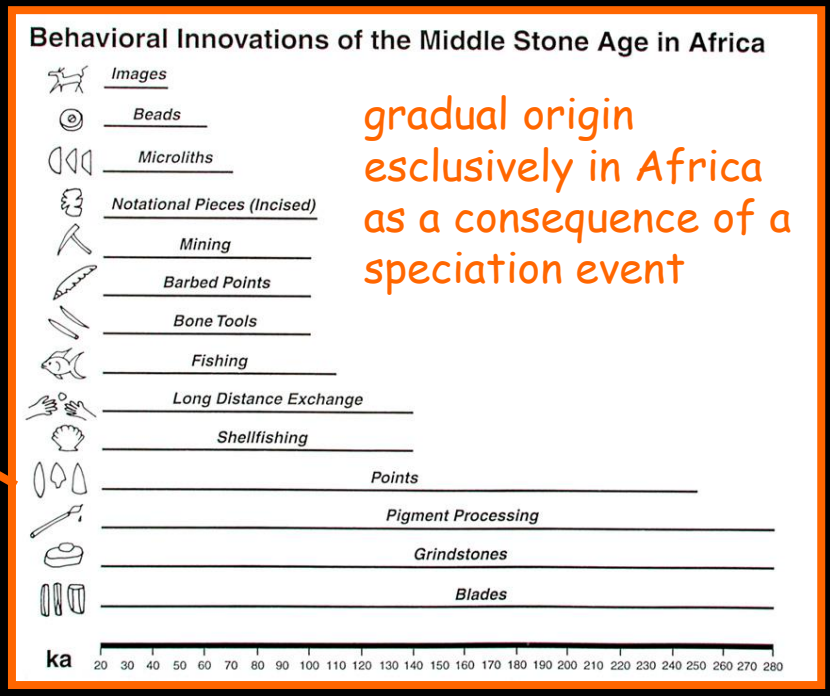
Blombos
75 ka BP
d'Errico et al. *JHE* 2005

Eurasia

Ahmarien
Uluzzien
Châtelperronien
Bachokirien
Streletkayien
EUP



Shuidonggou, 33 ka,
Pei et al. 2012 *JAS*



gradual origin
esclusively in Africa
as a consequence of a
speciation event