



# MODERN HUMAN ORIGINS

Yonatan Sahle, Hugo Reyes-Centeno, Christian Bentz





## Archaeology at the dawn of modern humans

- Overview: Middle Pleistocene archaeology
- The Middle Stone Age (Africa)
- The Middle Paleolithic(Eurasia)
- BBC Human Universe (by Prof. Brian Cox)

Richter J. 2011. When did the Middle Paleolithic begin. In: NJ Conard, J Richter (eds.), Neanderthal Lifeways, Subsistence and Technology: One Hundred Fifty Years of Neanderthal Study, Vertebrate Paleobiology and Paleoanthropology series, p. 7-14.

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Shift from the late Acheulean to the MSA/MP

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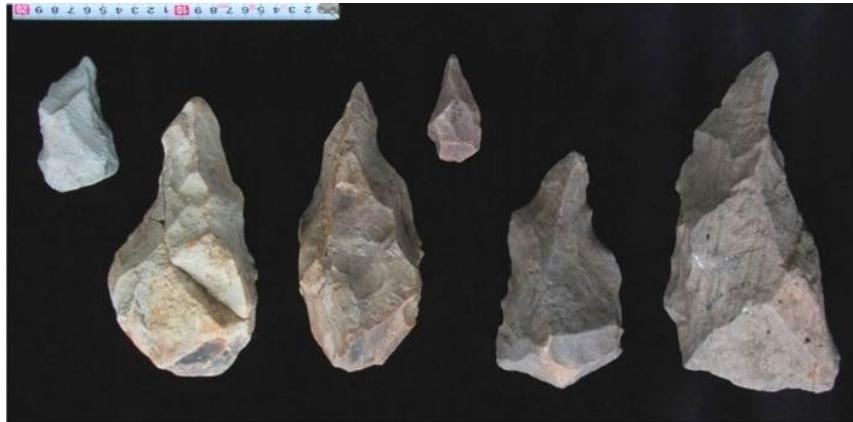
Shift from the late Acheulean to the MSA/MP



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## Archaeology at the dawn of modern humans



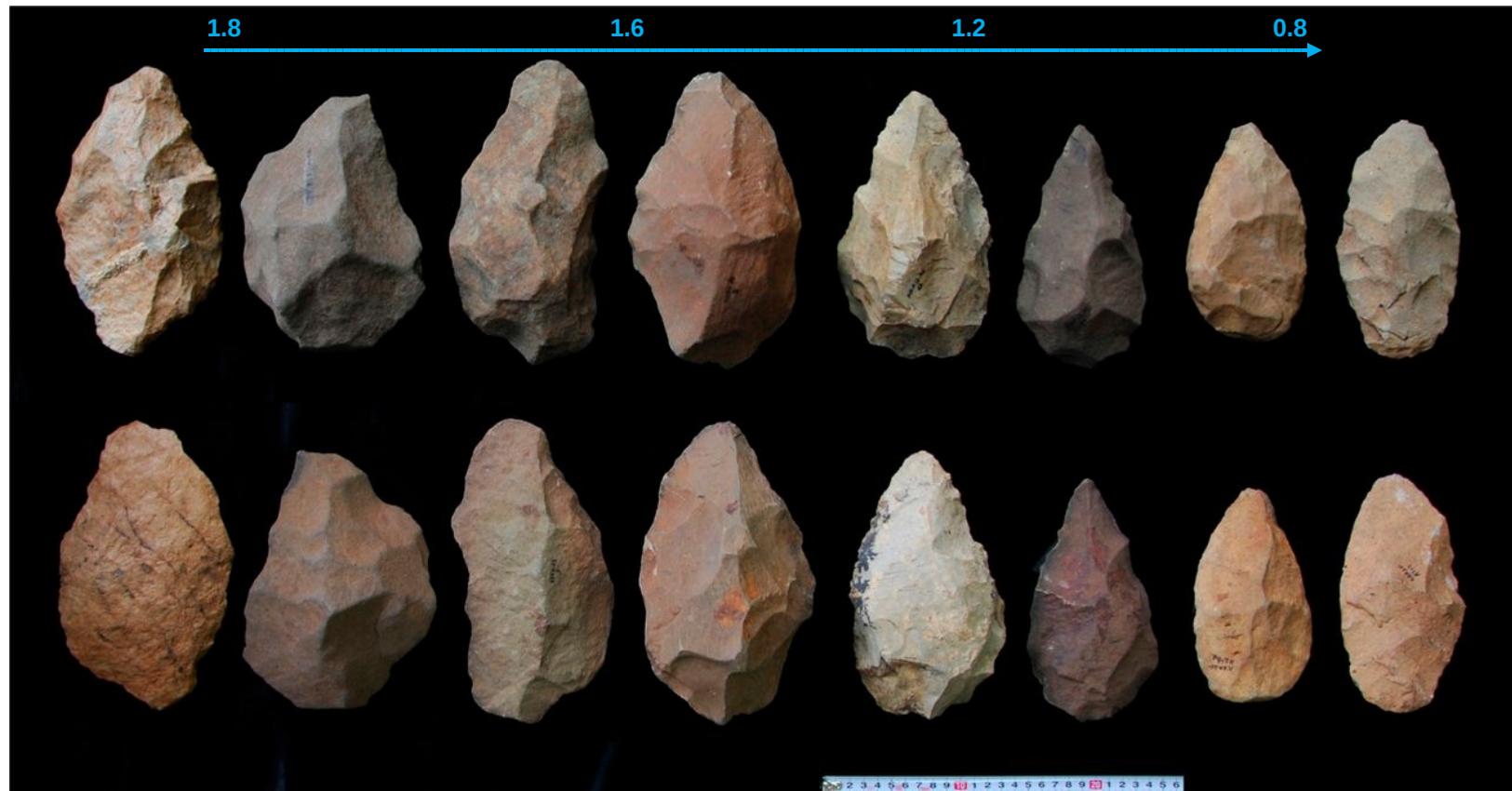
*Earliest Acheulean tools (1.8 mya)*



Beyene et al 2013 ©National Academy of Sciences



## Archaeology at the dawn of modern humans



Beyene et al 2013 ©National Academy of Sciences



## Archaeology at the dawn of modern humans

### *Increased variability*



triangular



Cordiform



discoid



Amegdaloid



lanceolate



elliptical

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## Archaeology at the dawn of modern humans

***Function of Acheulean tools: cutting, scraping, breaking, digging, ... ‘hunting discus’,...symbolic purpose?***



Av. cutting edge= 20cm



©National Geographic Creative (David Brill)



## Archaeology at the dawn of modern humans

### Enter the Middle Stone Age/Middle Paleolithic (MSA/MP):

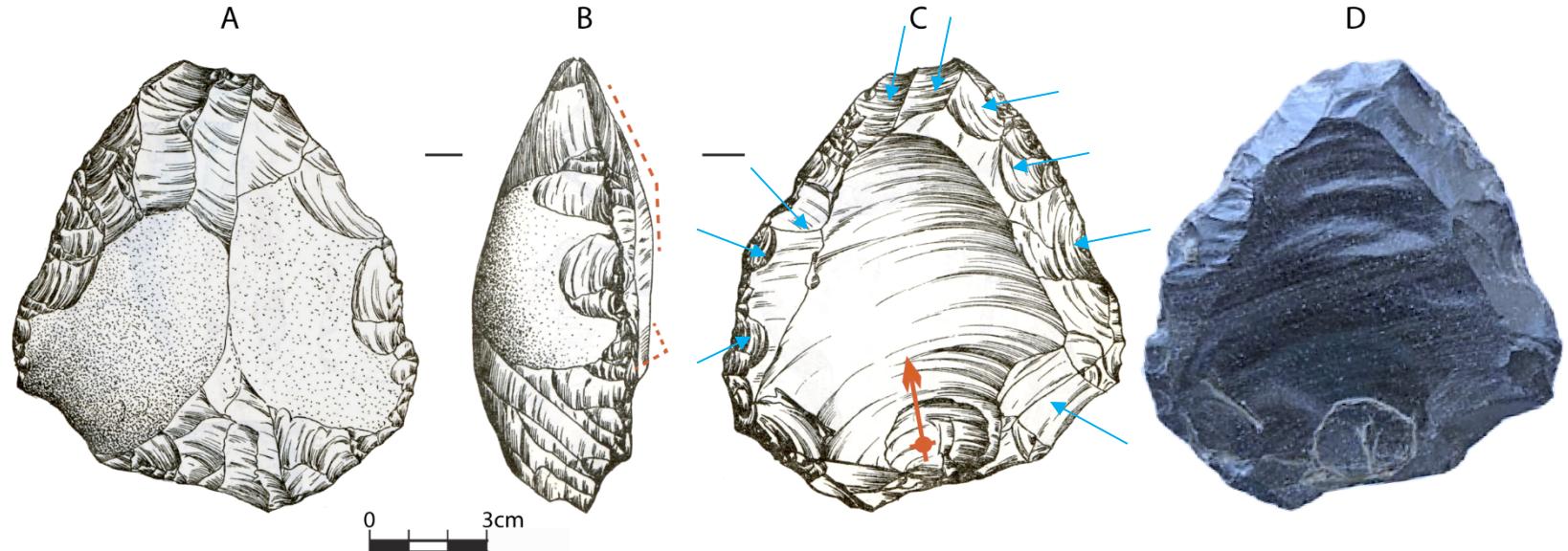
#### *Features:*

- tools predominantly on flakes
- Flakes from standardized methods (e.g., the Levallois)
- tool diversity
- regional identity (style, in addition to function)
- pointed artifacts and scrapers organic tools
- early hafting, ochre processing, etc



## Archaeology at the dawn of modern humans

### MSA/MP

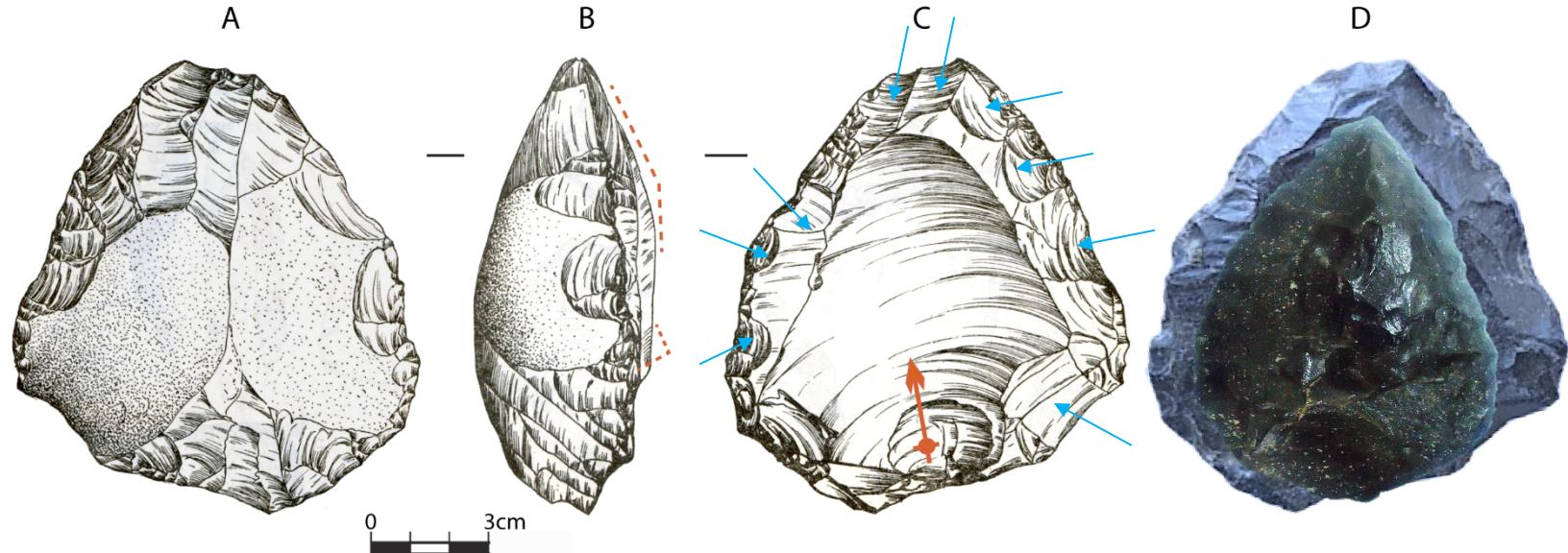


**Characteristics:** Prepared core technology (aka the Levallois); pointed pieces



## Archaeology at the dawn of modern humans

### A Levallois Core (280 kya)



(Wendorf & Schild 1974)



## Archaeology at the dawn of modern humans

### A spear point (280 kya)



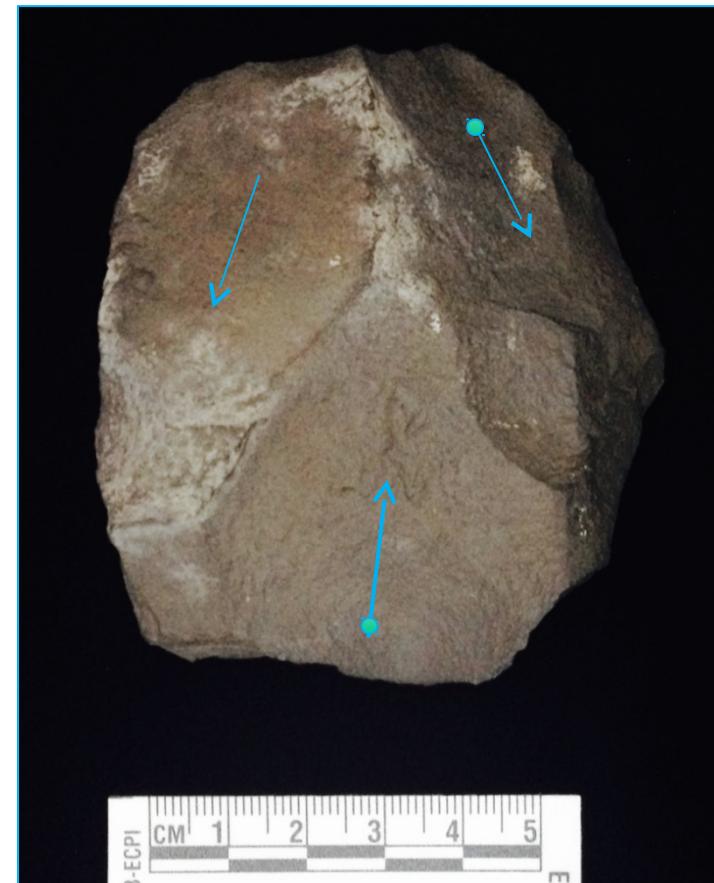
Levallois (Wendorf & Schild  
1974)



## Archaeology at the dawn of modern humans



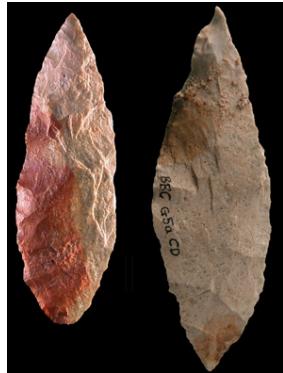
Levallois flakes (Left) and Preferential Levallois core (Nubian) all ©Y Sahle





## Archaeology at the dawn of modern humans

### More diversity: pointed pieces



Still Bay Point: Villa et al (2009)



Aterian (tanged) Point: Iovita (2011)



Classic, broad-base point: Brooks et al (2006)



Engraver/borer ©Paleodirect



## Archaeology at the dawn of modern humans

### More diversity: Scrapers



Steep, Mousterian Quina scrapers



Horse shoe scrapers



Bifacial scraper



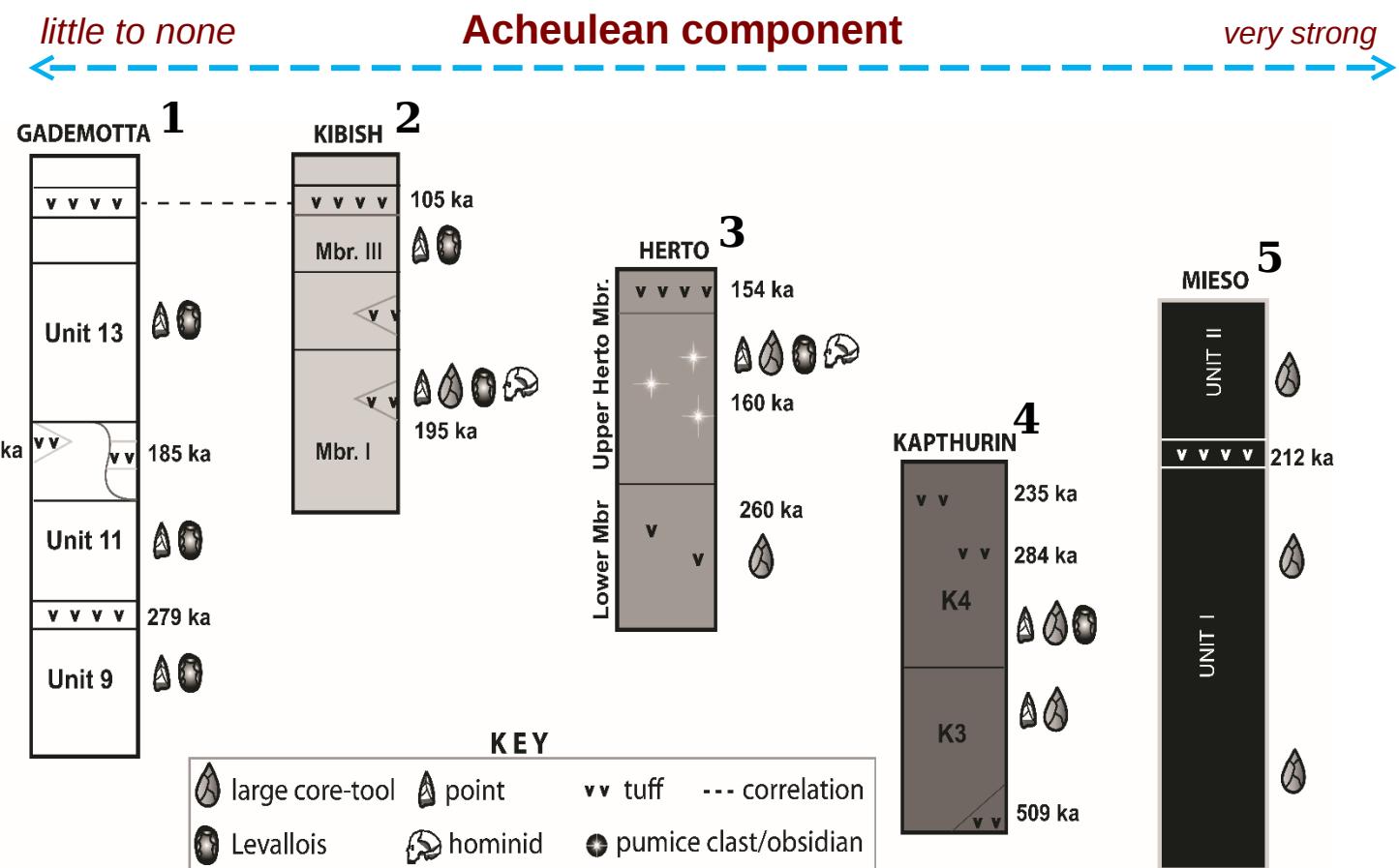
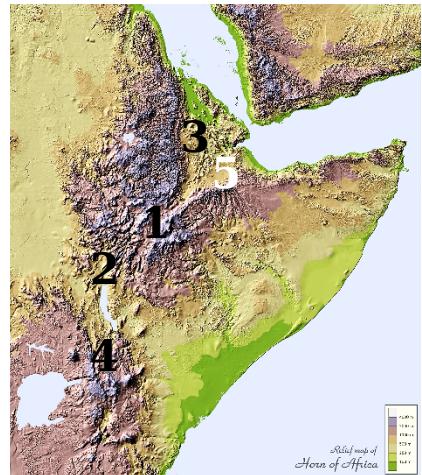
“BULB OF PERCUSSION”,  
A FEATURE FOUND ONLY ON HUMAN STRUCK FLAKES

Scrapers on an oval flake: Middle Paleolithic

All images here ©Paleodirect



## Archaeology at the dawn of modern humans

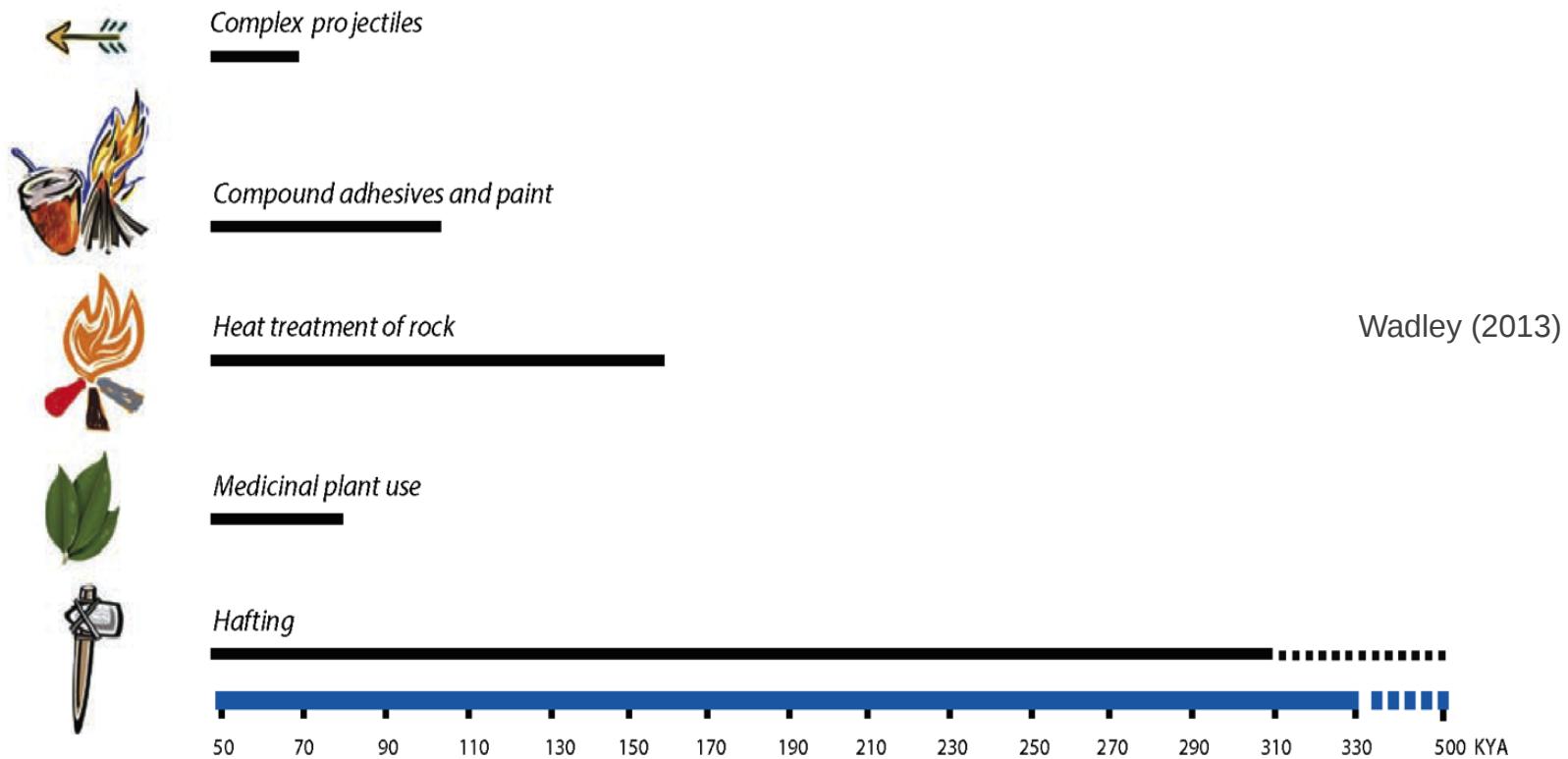


Sahle (2014) SAA



## Archaeology at the dawn of modern humans

### Complex technologies?





## Archaeology at the dawn of modern humans

### early hafting



0                  2 cm

Campitello Quarry (~200 kya) Plant glue used as a haft  
Roebroek & Villa (2011) PNAS

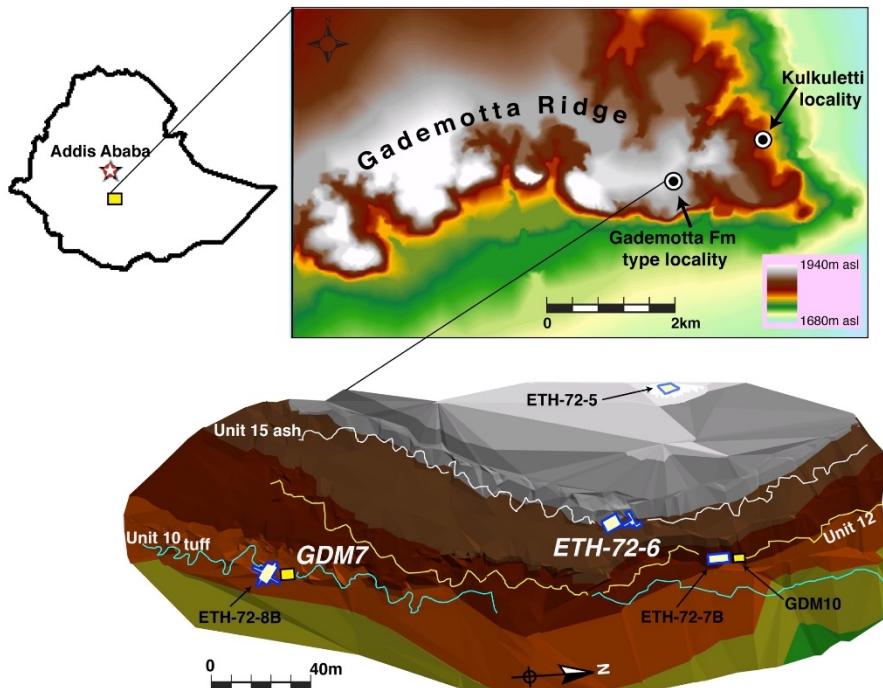


Kathu Pan (hafting at 500 ka?)  
Wilkins et al. (2012) PNAS

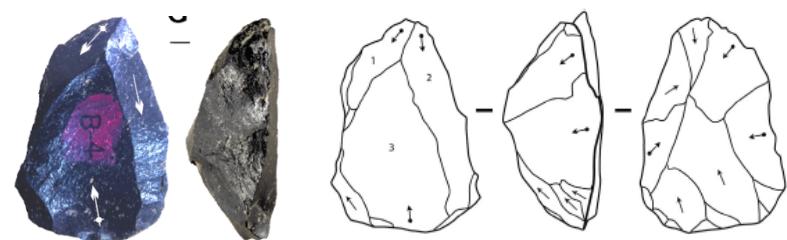


## Archaeology at the dawn of modern humans

### Hafting and simple projectiles: Gademotta, Ethiopia (>280 KYA)



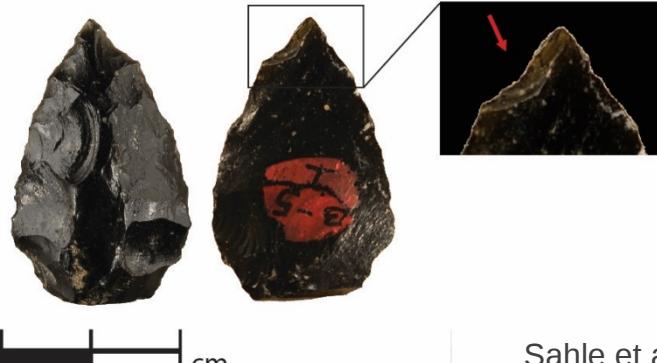
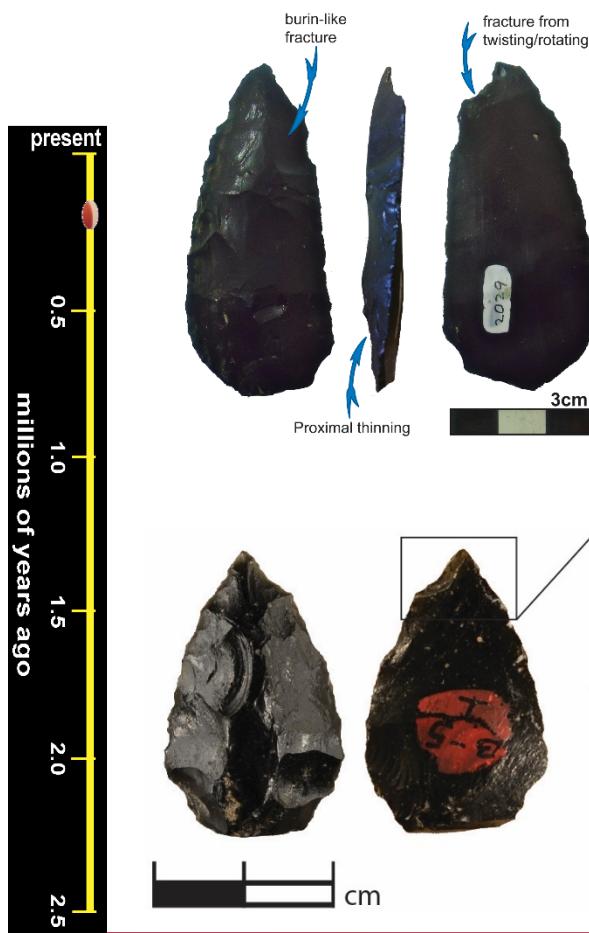
Sahle et al. (2013)



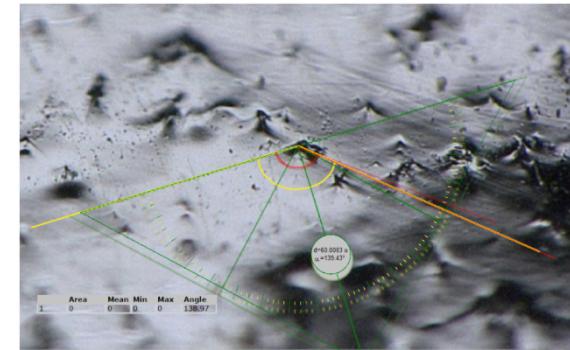
Levallois cores (Nubian type I  
preferential) Sahle (2013)



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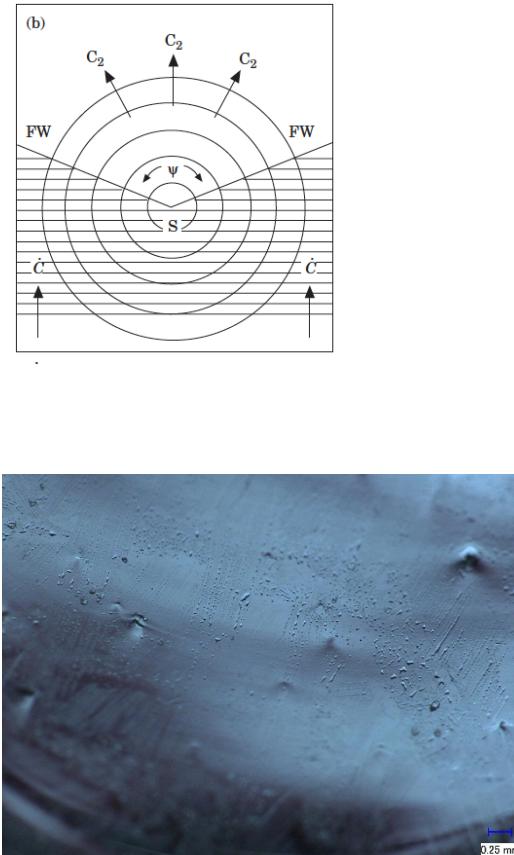


Sahle et al. (2013, 2014)

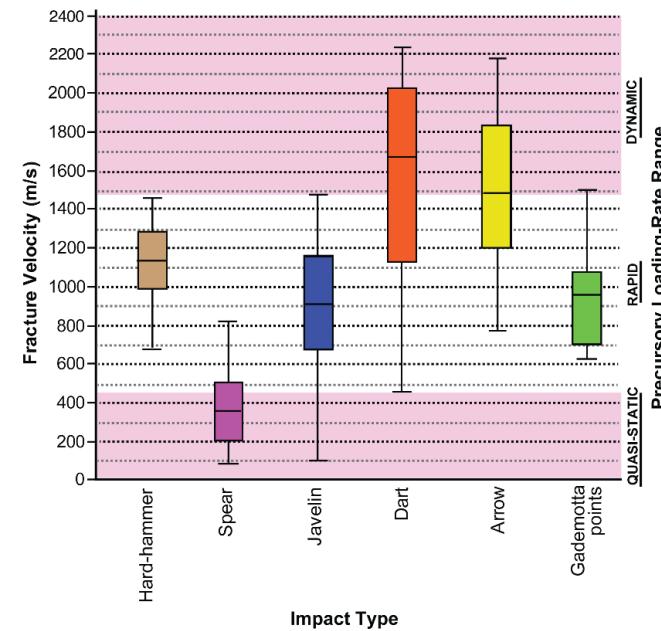




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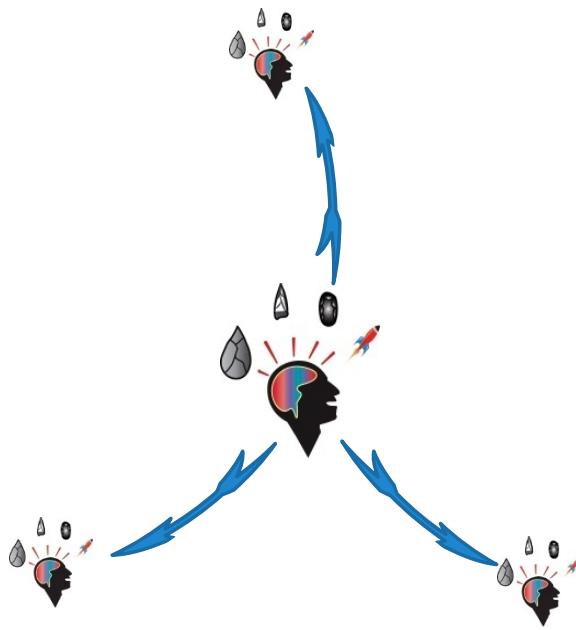
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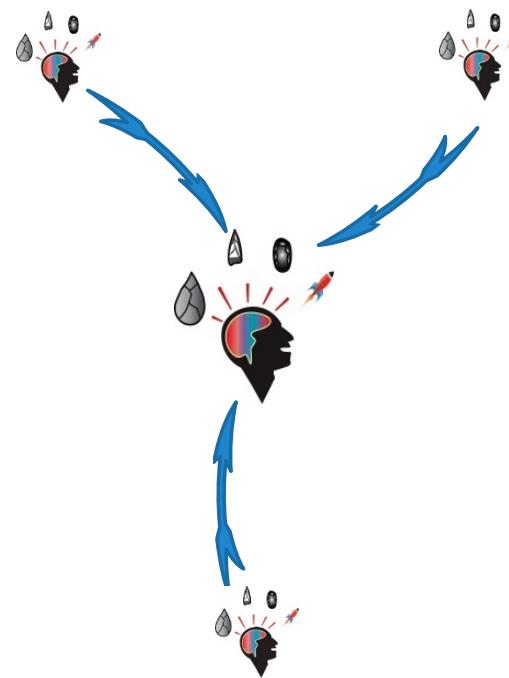


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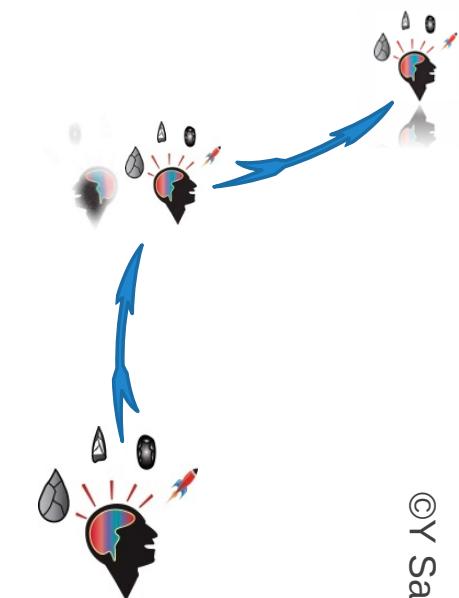
**Diffusion**



**Convergence**



**Idiosyncracy**

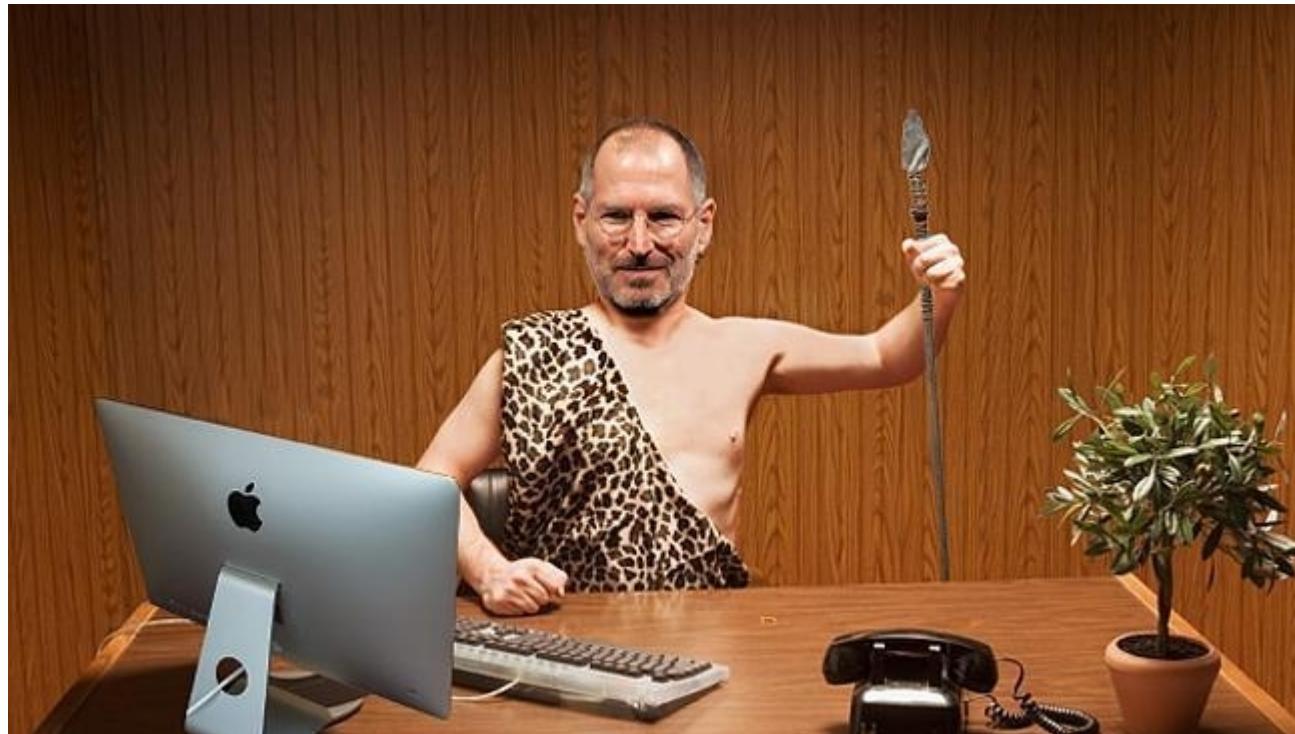


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## Archaeology at the dawn of modern humans

How did it all start: A single genius or cumulative intelligence?



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Contact:



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“Words, Bones, Genes, Tools”

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