Università degli Studi di Ferrara

Marco Peresani

Cronologie e culture del Paleolitico
Lezione 8.2 – Neanderthal land-use

Università di Ferrara
Dipartimento di Studi Umanistici
Sezione di Scienze Preistoriche e Antropologiche

Neanderthal the hunter

- Predatory strategies: careful choice of site location

⇩

<u>Stalking open-air sites:</u>

1) Coudoulus and Mauran, southern France (bisons)
2) The Cotte de St.Brelade, island in the Manica channel (mammouth and rinhoceros)

⇩

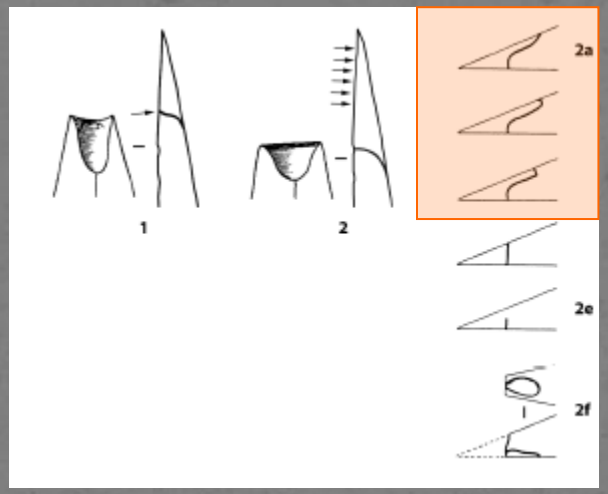
Strategic location

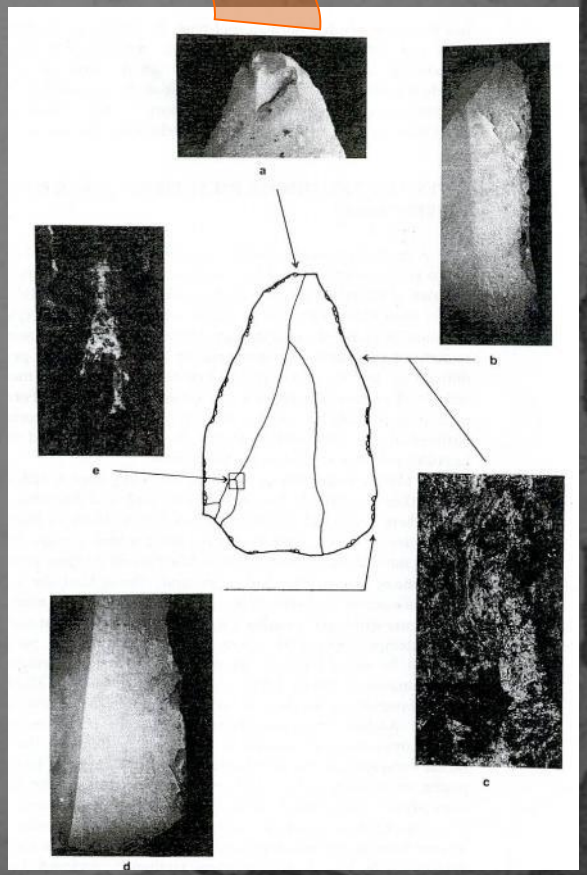
Neanderthal hunting weapons

Thrown spears with flint point?

- Functional analysis carried out on points and Levallois flakes
- Which diagnostic traces?

Impact fractures repeated and featured





Levallois flake

Kebara

60-50.000 anni B.P.

Shea 1993

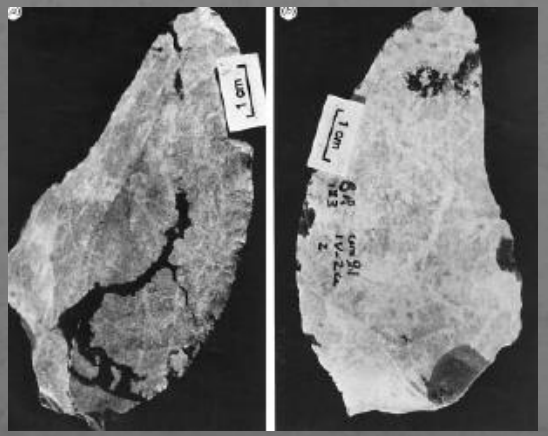
Ritouched point

Riparo Oscurusciuto

45.000 years B.P.

Experimental marks obtained on artifacts used as thrusting spears with axial hafting; (b) thin and elongated removal on the upper face of the tip end.

Use of adhesives..

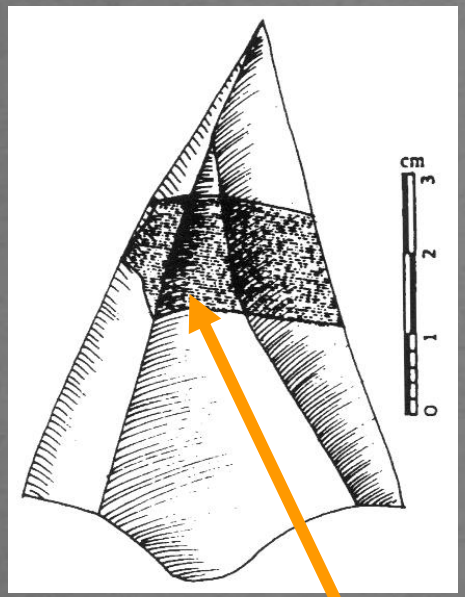


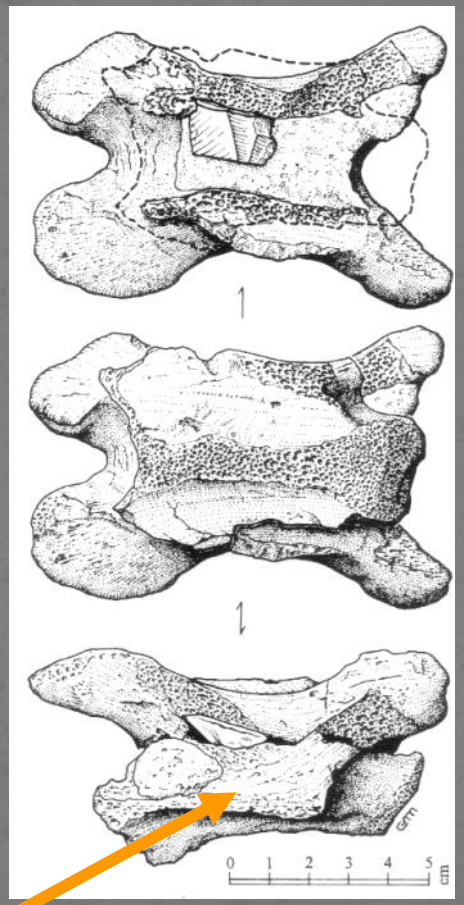
Scraper with traces of bitumen

Umm-el Tlel

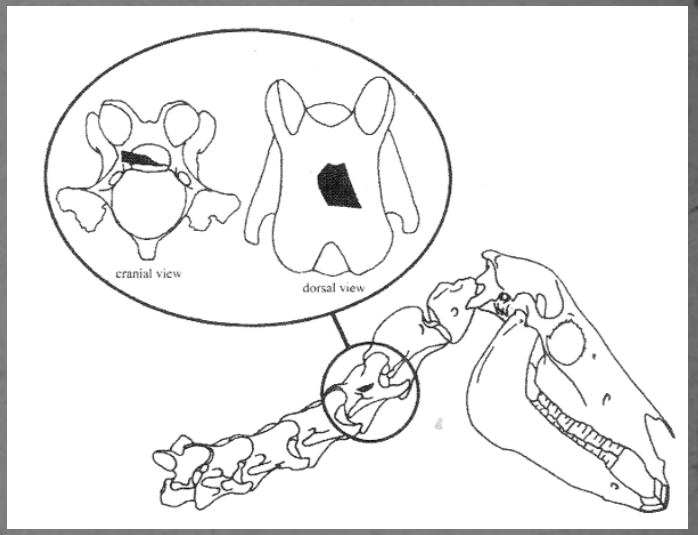
40.000 years B.P.

An irrefutable prove..





Neanderthals?
UMM-EL-TLEL, Siria
40.000 years



Fragmented flint point

nature
ecology & evolution

Article | Published: 25 June 2018

Evidence for close-range hunting by last interglacial Neanderthals

Sabine Gaudzinski-Windheuser, Elisabeth S. Noack, Eduard Pop, Constantin Herbst, Johannes Pfleging, Jonas Buchli, Arne Jacob, Frieder Enzmann, Lutz Kindler, Radu Iovita, Martin Street & Wil Roebroeks

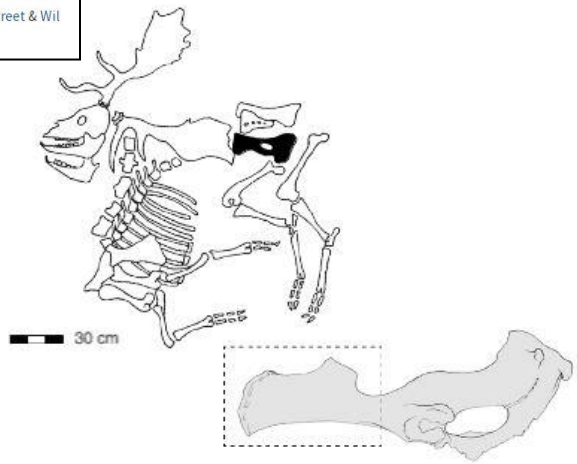
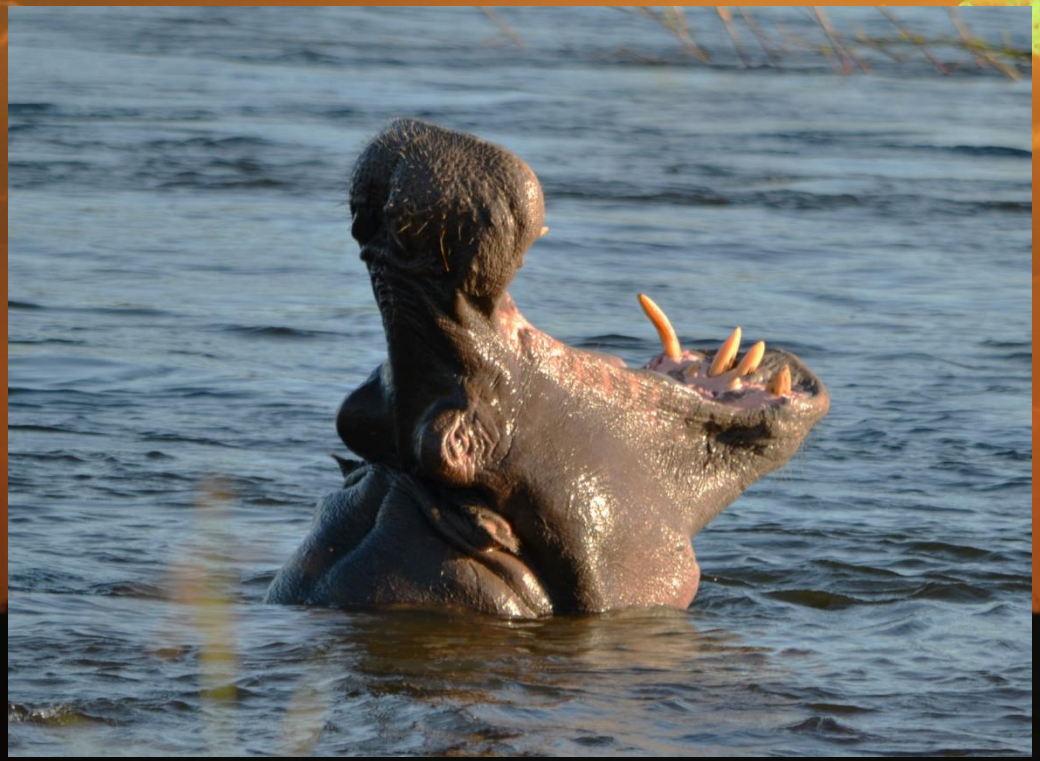
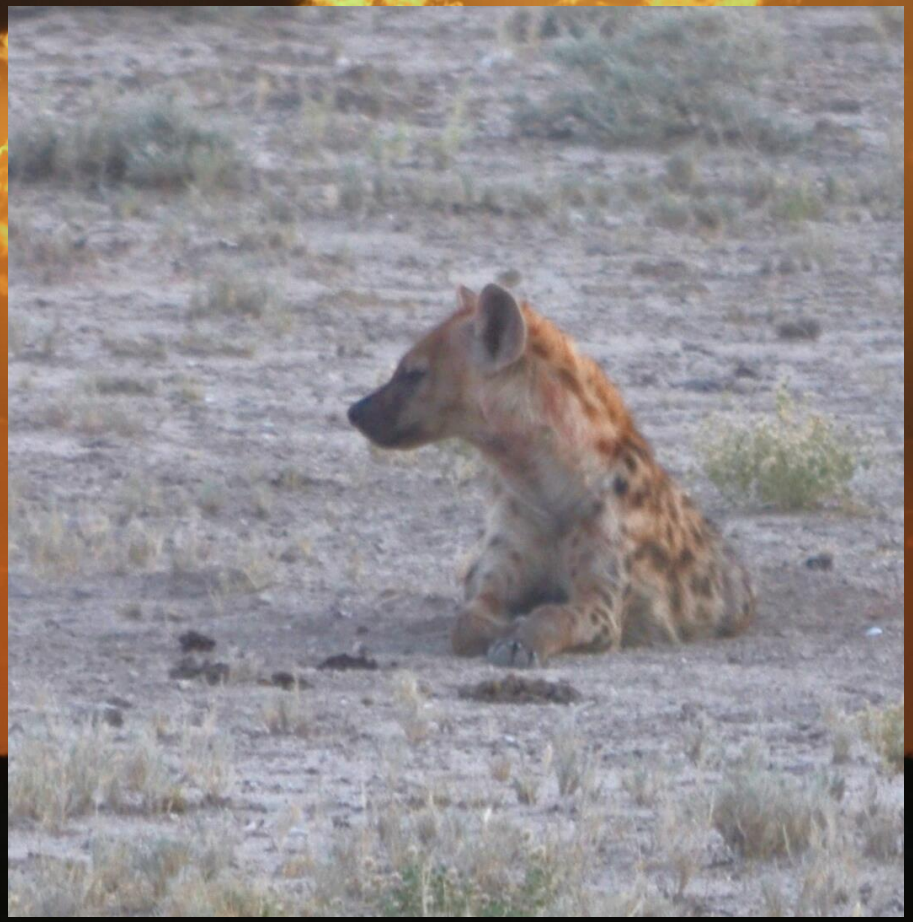
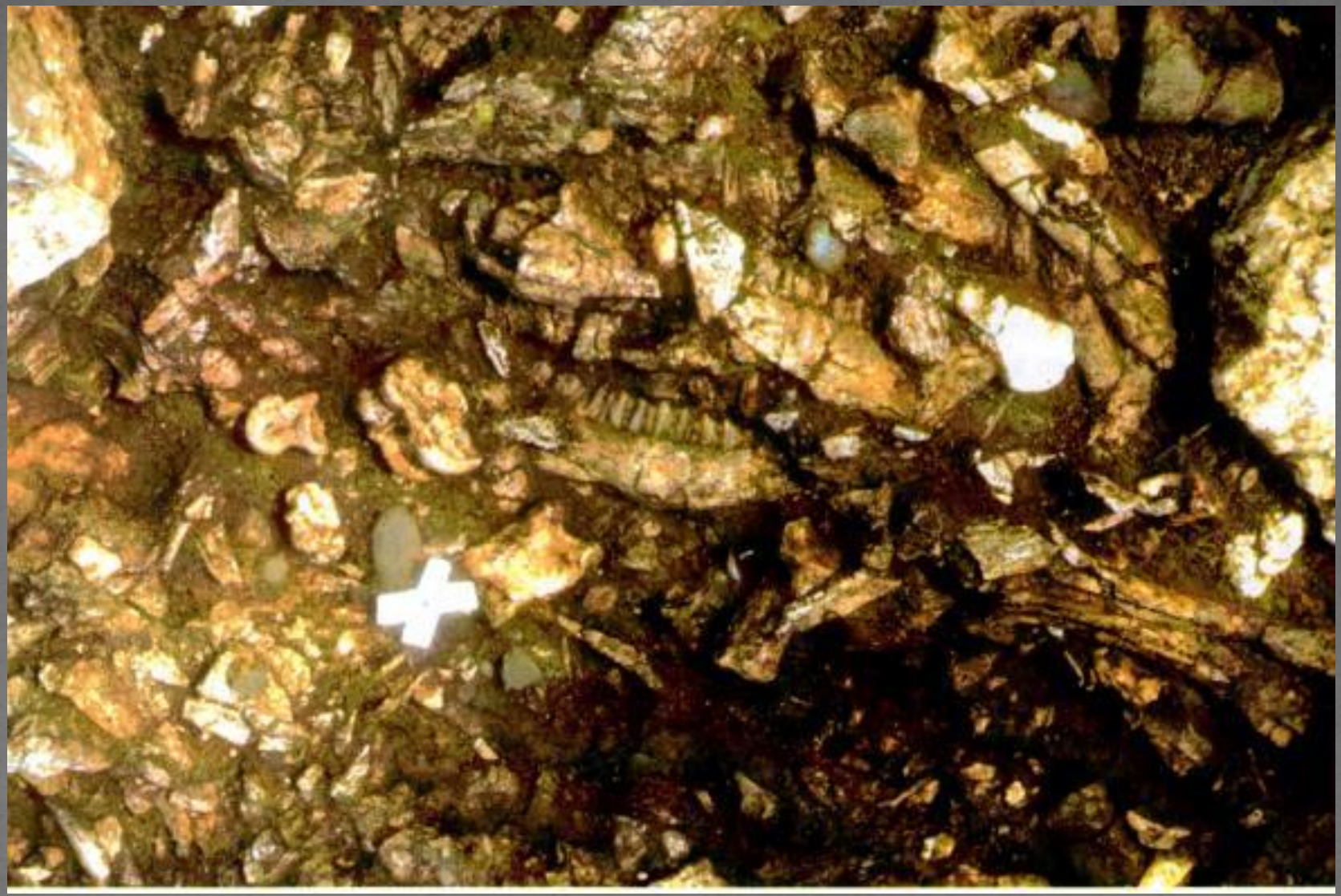


Fig. 1 | Fallow deer skeleton number 97:14159. a, As documented in the field. **b**, Pelvis with a circular perforation from lateral (top) and medial (bottom). For a close-up of the highlighted area, see Fig. 2 and Supplementary Model.


© Juza - www.juzaphoto.com

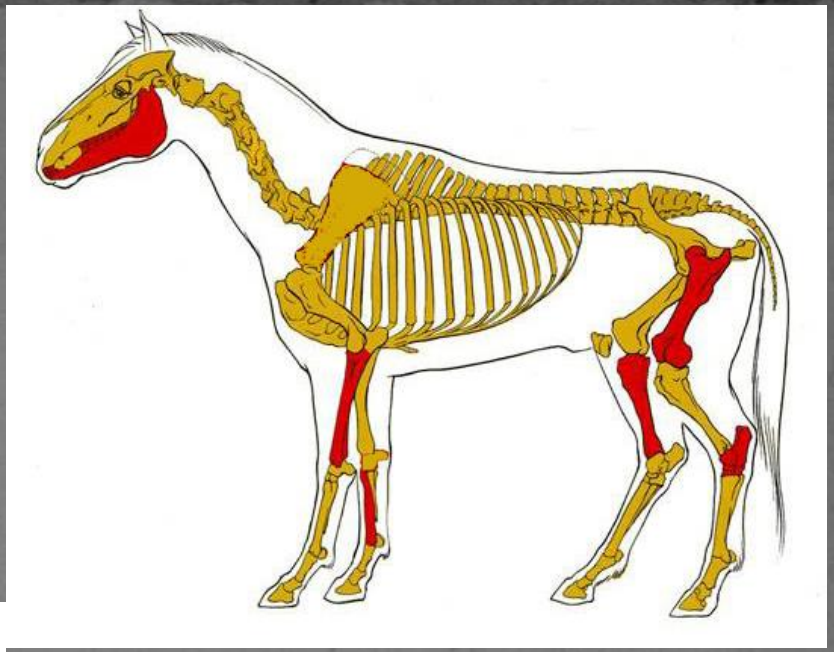


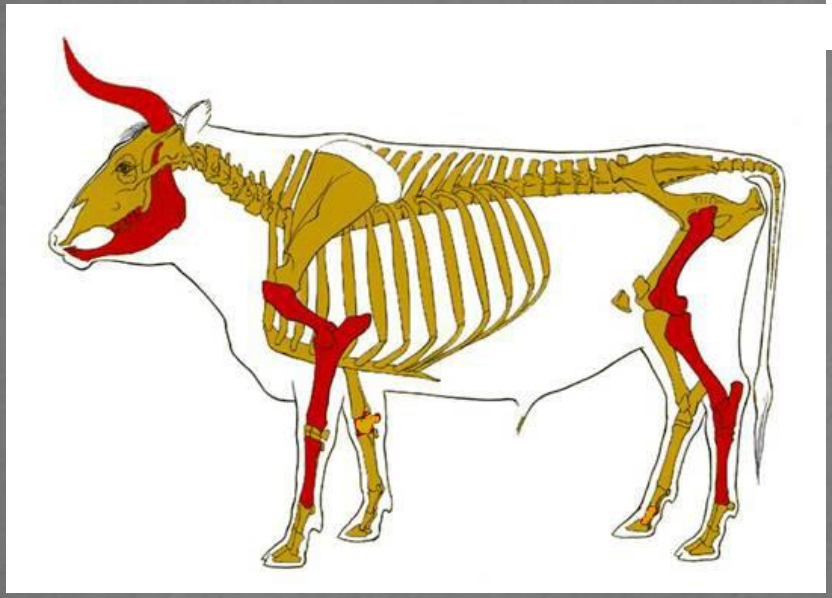




Accumulation of bison and reindeer bones at Coudulous

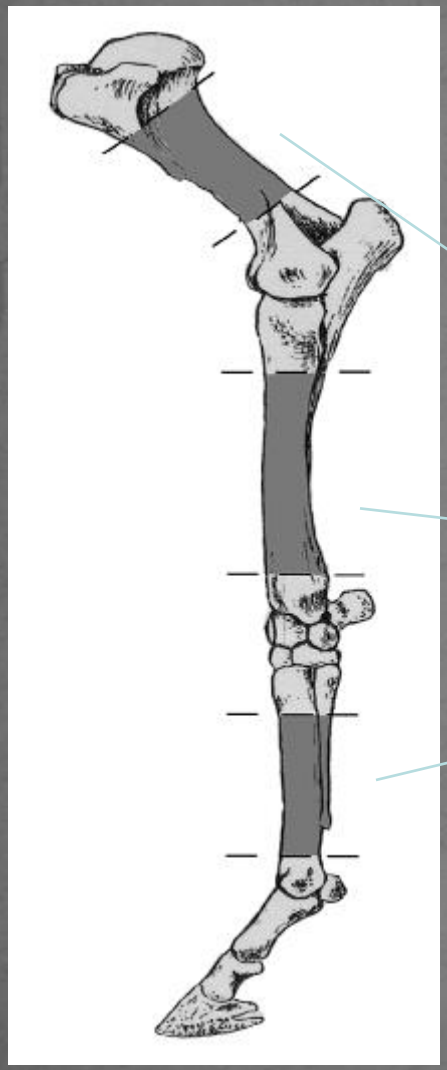
Santa Croce cave
(Bisceglie)

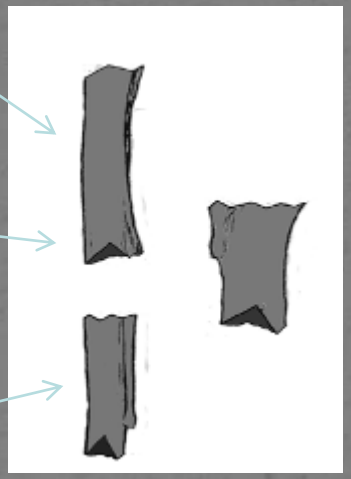




Portions of carcasses
Introduced onto the site
(in red)

Bone marrow and fat contained in spongy bone





Fragmentation of long bones for recovering the marrow

Bear and cave-bear hunting

A) Radio, *Ursus spelaeus*, with defleshing cut-marks (AI);

B) Right rib, *Ursus* sp., with defleshing (BI) o skinning cut-marks (BII);

C) First falanx, *Ursus* sp. With skinning cut-marks (CI)

Beaver

Castor fiber

Romandini et al., 2018

Contents lists available at ScienceDirect

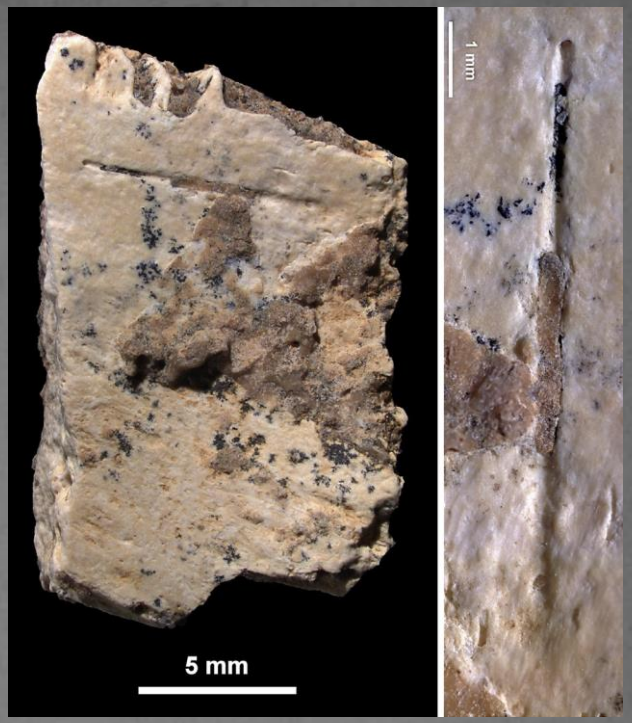
Quaternary Science Reviews

journal homepage: www.elsevier.com/locate/quascirev

The consumption of tortoise among Last Interglacial Iberian Neanderthals

Mariana Nabais [a, *], João Zilhão [b, c, d]

Tortoise burnt shell from Gruta da Oliveira



Cut mark on ventral side of tortoise carapace fragment from Gruta da Oliveira (layer 20), and its close-up, from left to right.

Percussion and striation marks found on tortoise remains recovered from Gruta da Oliveira.

	Layers 7–14	Layers 15–19	Layers 20–25	Layers 26–27
Percussion				
Impact flake	2	41	84	4
Adhering flake	–	–	16	–
Notch	2	9	12	–
None	346	2994	1833	358
Total	**350**	**3044**	**1945**	**362**
%Percussion	**1.14**	**1.64**	**5.76**	**1.10**
%Non-Percussion	**98.86**	**98.36**	**94.24**	**98.90**
Striation				
Chop	–	0	1	1
Cut	–	1	4	0
None	350	3043	1940	361
Total	**350**	**3044**	**1945**	**362**
%Striation	**-**	**0.03**	**0.26**	**0.28**
%Non-Striation	**100.00**	**99.97**	**99.74**	**99.72**

Marine foods and brain development

Journal of Human Evolution 77 (2014) 107–116

Contents lists available at ScienceDirect

Journal of Human Evolution

journal homepage: www.elsevier.com/locate/jhevol

A fish is not a fish: Patterns in fatty acid composition of aquatic food may have had implications for hominin evolution

Josephine C.A. Joordens [a, *], Remko S. Kuipers [b, e], Jan H. Wanink [c, d], Frits A.J. Muskiet [e]

"**Aquatic resource** use could have facilitated the initial moderate **hominin brain increase** as observed in fossils dated to c. 2 Ma, but could not have been the sole driving force of the explosive brain increase in later stages of hominin evolution. We propose that the explosive expansion of hominin brain size and cognition later was driven by strong directional selecting forces and **nutritionally supported** by exploitation of high-quality and high LC-PUFA [long-chain polyunsaturated fatty acid] food resources in stable and productive aquatic ecosystems."

Coastal adaptations and behavioral modernity

Journal of Human Evolution 77 (2014) 17–40

Contents lists available at ScienceDirect

Journal of Human Evolution

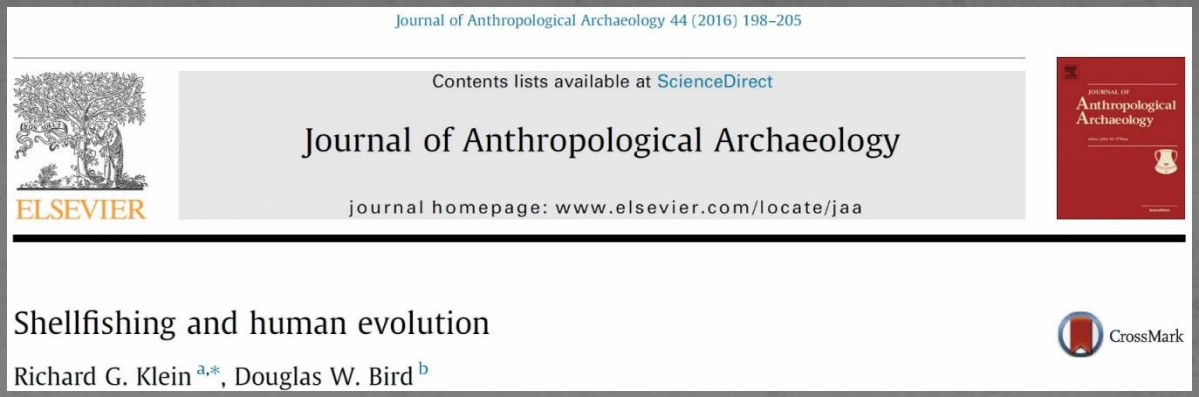
journal homepage: www.elsevier.com/locate/jhevol

The origins and significance of coastal resource use in Africa and Western Eurasia

Curtis W. Marean

"Consistent use of marine resources often is associated with reduced mobility, larger group size, population packing, smaller territories, complex technologies, increased economic and social differentiation, and more intense and wide-ranging gifting and exchange. (…) The origins of this coastal adaptation marks a transformative point for the hominin lineage in Africa. (…) during the Middle Stone Age in South Africa there is evidence that true coastal adaptations developed while there is, so far, a lack of evidence for even the lowest levels of systematic coastal resource use by **Neanderthals** in Europe. Differences in preservation, sample size, and productivity between these regions do not explain the pattern."

Research and preservation biases (?)



Journal of Anthropological Archaeology 44 (2016) 198–205

Contents lists available at ScienceDirect

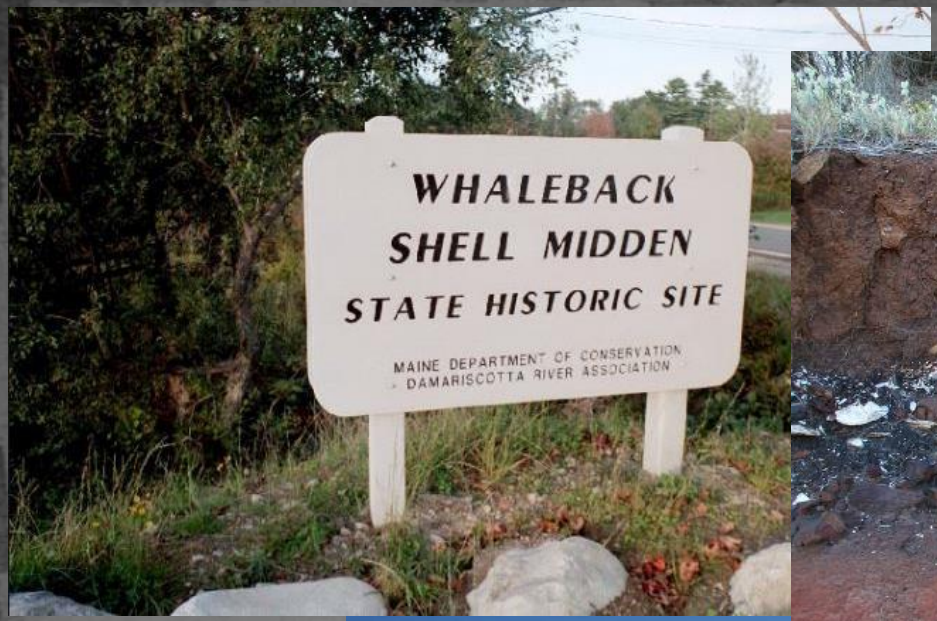
Journal of Anthropological Archaeology

journal homepage: www.elsevier.com/locate/jaa

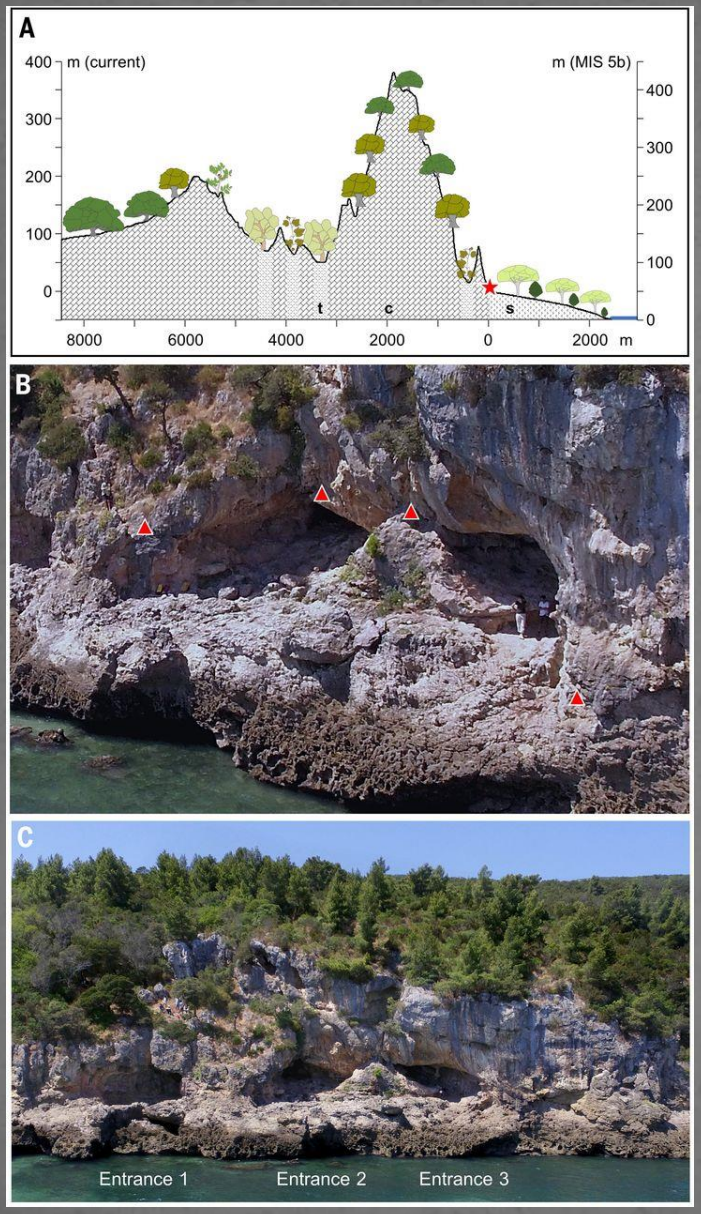
Shellfishing and human evolution

Richard G. Klein [a,*], Douglas W. Bird [b]

"Southern and northwestern Africa have provided the oldest known shell middens, dating from the Last Interglacial (MIS 5, ~128–71 ka) and the early part of the succeeding glaciation (MIS 4, ~71–59 ka). However, when and if older, suitably situated, stratified coastal sites are found, they are likely to show that **routine shellfishing began much earlier**, perhaps from the time that people first occupied coasts. (…) Shellfishing can generate highly visible and durable archaeological signatures, and only a few collecting episodes each year could have produced the oldest middens, which span many millennia. Shell middens are so far unknown in European Neanderthal (Mousterian) and succeeding Upper Paleolithic sites, probably because suitably situated sites have yet to be found."

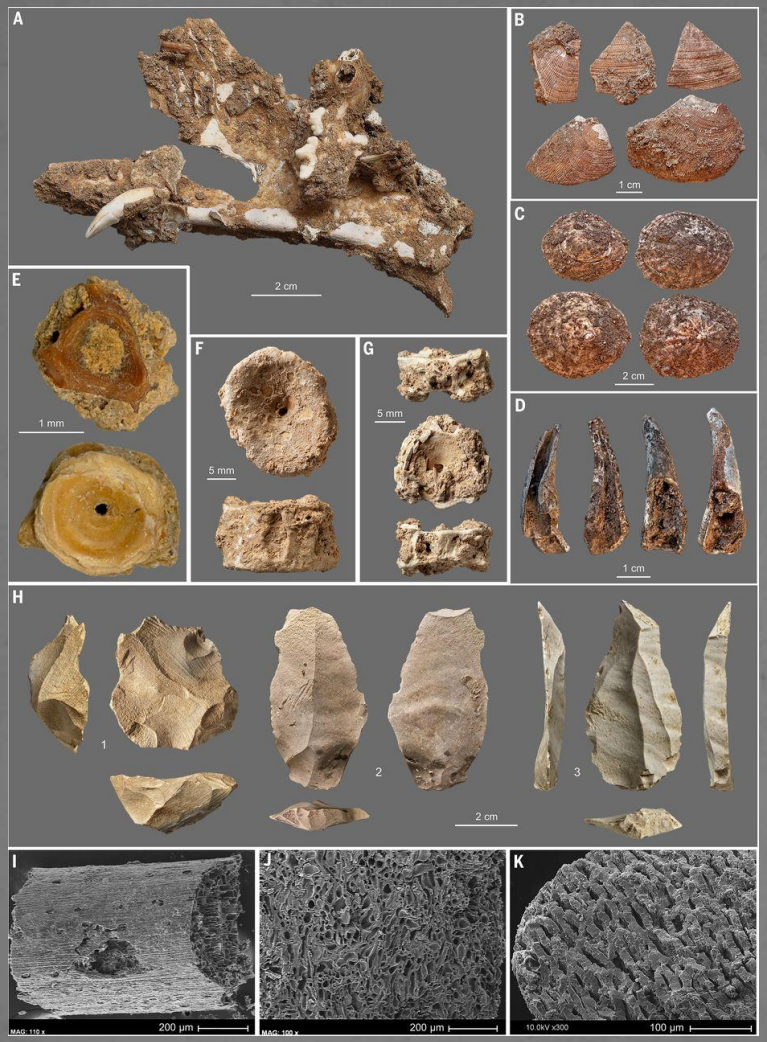

WHALEBACK
SHELL MIDDEN
STATE HISTORIC SITE
MAINE DEPARTMENT OF CONSERVATION
DAMARISCOTTA RIVER ASSOCIATION

Gruta da Figueira Brava, Arrábida, Portugal



J. Zilhão et al. Science 2020;367:eaaz7943

Science AAAS

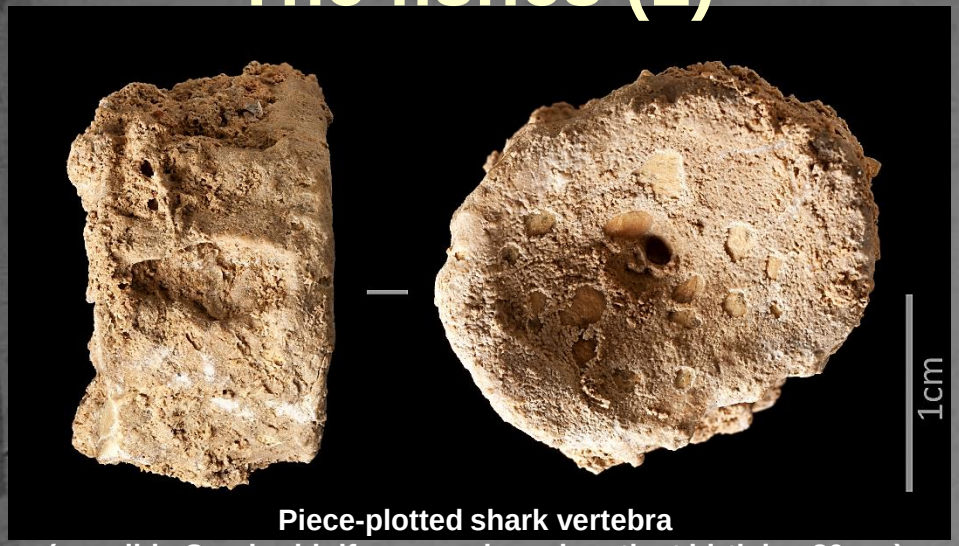


(A) Felis sylvestris left maxilla
(B) Ruditapes decussatus shell fragments
(C) Patella vulgata shells
(D) Cracked-open and burnt fragments of Cancer pagurus pincers
(E to G) Vertebrae of eel (E), one thermo-altered, and shark [(F) and (G)]
(H) Stone tools : 1, Levallois core; 2 and 3, laminary Levallois flakes
(I to K) Scanning electron microscope images of Pinus pinea charred remains

J. Zilhão et al. Science 2020;367:eaaz7943

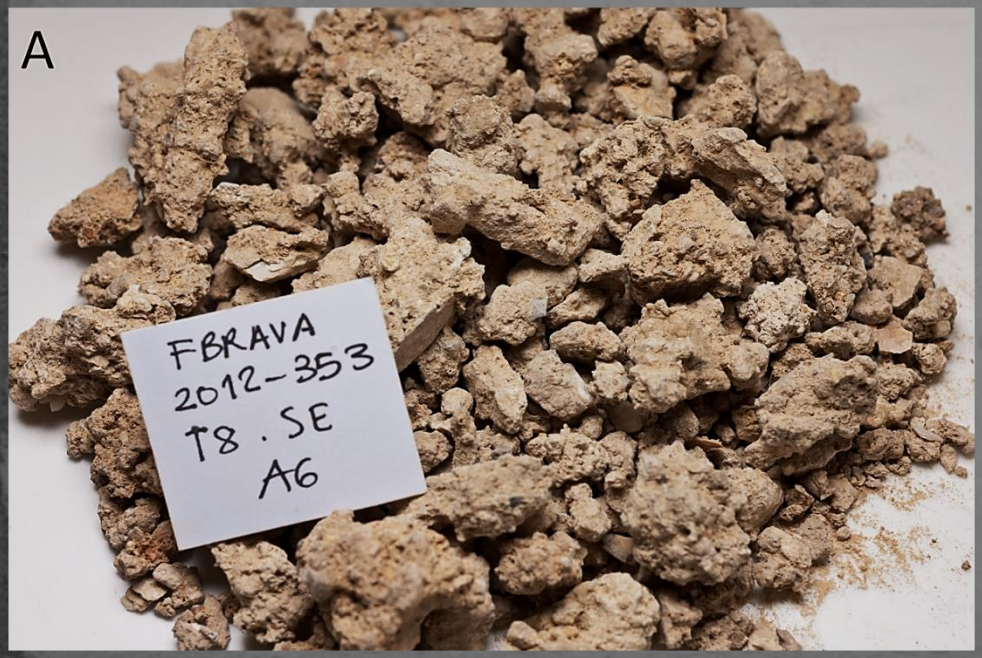
Science AAAS

The fishes (1)



Piece-plotted shark vertebra
(possibly Carcharhiniformes, whose length at birth is ~80 cm)

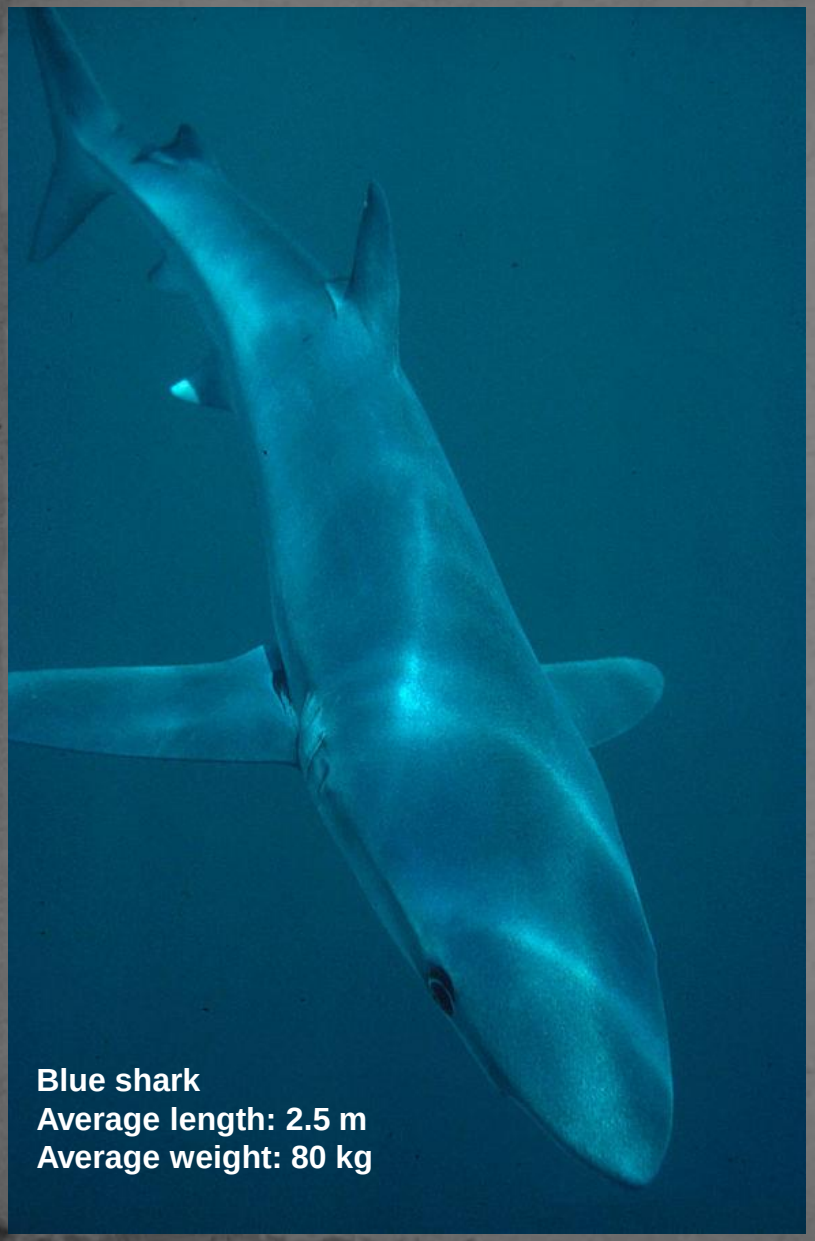
Eel bones (Anguilliformes) from sediment sorting



The sediment prior to disaggregation

Vertebrae, and vertebral fragments from sediment sorting

The most common fish taxa



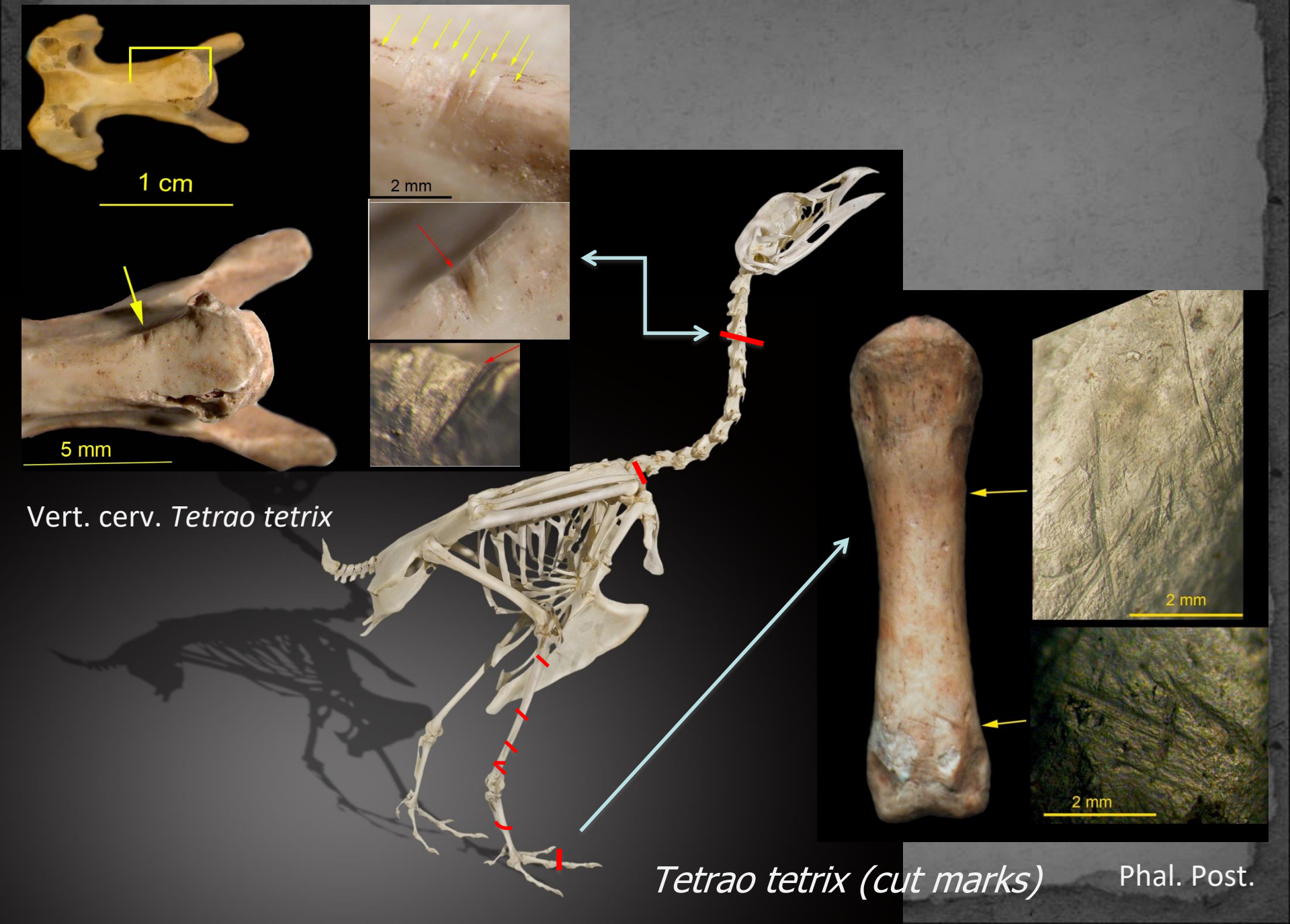
Blue shark
Average length: 2.5 m
Average weight: 80 kg

European eel
Average length: 60-80 cm

Gilt-head seabream
Adult length: up to 1 m
Adult weight: 5-7 kg

A.Burian, 1950

- A role for the avifaunal complexes in the reconstruction of human behavior and dietary habit
- Indications for human exploitation: anthropogenic modification, representation, spatial patterning, taphonomically sourced data
- From Early Pleistocene onwards
- Use of avifaunal resources for food but also for symbolic purposes since the Middle Palaeolithic
- Archaeologists must open the drawers!


1 cm
2 mm
5 mm
2 mm
2 mm
Vert. cerv. *Tetrao tetrix*
Tetrao tetrix (cut marks)
Phal. Post.

Conclusions

- Advanced palaeodietary reconstruction methods show that Neandertals had a much more complex diet (i.e., **broad dietary spectrum**) than previously thought

- The exploitation of various food sources challenges one of the most cited hypotheses about the demise of Neandertals (a narrower diet than AMH), as one of the major causes of their extinction

- As Neandertals and AMH overlapped in Europe, **resource competition** might have triggered Neandertal's extinction

- Because each method for palaeodiet reconstruction has advantages and limitations, the application of a **holistic approach** will result in a better understanding of the ecologies and subsistence strategies of extinct/ancient human populations