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## **New insights on the Aterian Hominid / Carnivore Interactions in the Pleistocene of the Atlantic coast of Temara (Morocco)**

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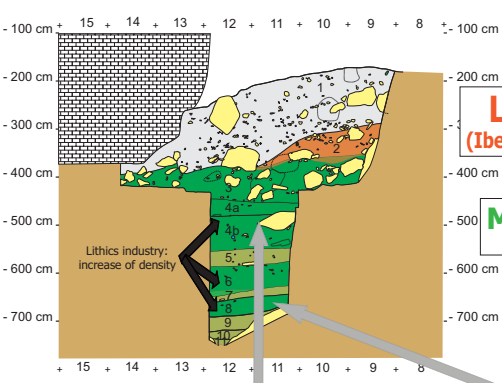
# New insights on the Aterian

## Hominid / Carnivore Interactions in the Pleistocene of the Atlantic coast of Temara (Morocco)

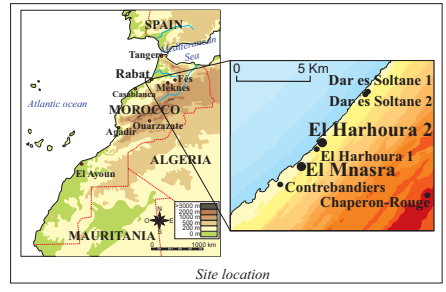
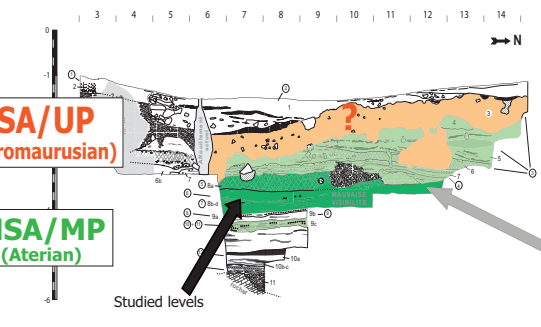
E. Campmas\*, P. Michel, F. Amani, E. Stoetzel, Z. Jacobs, N. Janati-Idrissi, L. Boudad, A. Lenoble, R. Nespoulet, M.A. El Hajraoui

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### EL HARHOURA 2 (entrance cave)



### EL MNARSA



#### EL HARHOURA 2 (Levels 2, 3 and 4A)

**LITHIC << FAUNA**

**LEVEL 2:** Small amount of lithic industry: Bladelet cores, Bladelets

**LEVEL 3:** Small proportions with cortex, Small size of Levallois cores (mobility choice?), Exhaustion of the knapping surface, Few tools, No evidence of pedunculates

**LEVEL 4A:** same as level 3

**LEVELS 3 and 4A:** No evidence of *Nassarius* sp. Few interventions: (few cut-marks, few bruned bones, presence of "retouchoir")

**Gazelles dominates** (all of the anatomical parts are presents; mortality curve: "U") + Suidae + Alcephinae + Equidae + Rhinocerotidae... Carnivores: Small Canidae + large Canidae + few other taxa.

**Interventions:** (digested bones, tooth-marks, coprolithes...); Hyene: (few remains, few evidence of juveniles...)

**LEVEL 4A:** presence of a fire place

**"Retouchoir"** from level 4A

**Very short stops**

**Occupations, not nursery** (maybe located at the bottom of the cave?)

#### EL HARHOURA 2 (Level 8)

**Small excavation area = small sample**

**LITHIC << FAUNA**

**LEVEL 8:** - Few data, - higher rate of transformed tools, - No evidence of pedunculates

**LEVEL 8:** Higher proportion of marine mollusks (*Patella*, *Mytilus*...)

**LEVEL 8:** Presence of *Nassarius* sp.

**LEVEL 8:** (slightly higher rate of cut-marks and bruned bones, presence of "retouchoir"...)

**LEVEL 8:** - Few data, - Higher proportions of large Bovinae

**Interventions:** (Digested bones, tooth-marks...)

**"Retouchoir"** from level 8

**More intensive Occupation? More activities? Exploitation of coastal resources Selection of larger taxa (like Bovinae)?**

**Admixture of Human and Carnivore occupations? Intervention of Carnivore on bone discarded by Men?**

#### EL MNARSA (Levels 5, 6 and 7)

**LITHIC << FAUNA**

**LEVEL 5:** - Cores (Levallois...), - Tools (scrapers, Levallois points...), - Pedunculates, - Pebble tools

**LEVEL 6:** Numerous *Nassarius* sp.

**LEVEL 6:** Numerous fire place

**LEVEL 6:** High amount of marine mollusks (*Patella*, *Mytilus*...)

**LEVEL 7:** Use of pigment

**Interventions:** (Cut-marks, bruned bones, bone tool industry...)

**SAISONALITY:** Presence of neonatals and juveniles: Occupations during spring

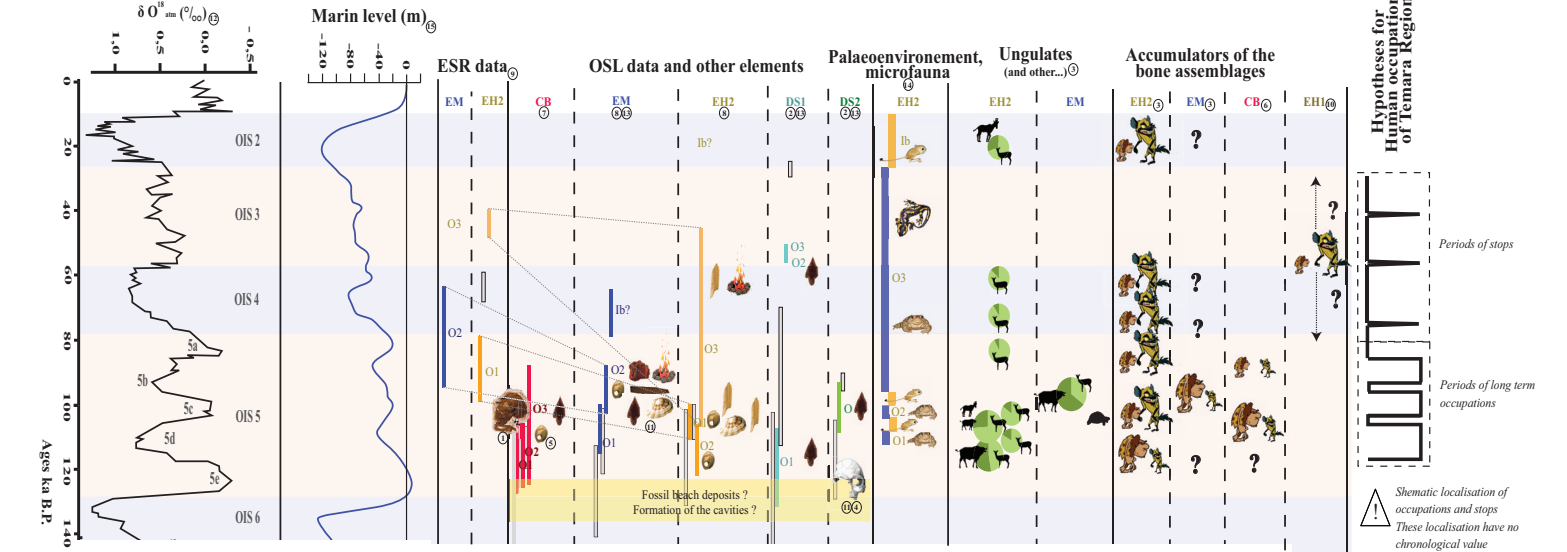
**LEVEL 7:** - Gazelle, large Ungulates (for example Bovinae) + Turtles... - Butchery - Consumption - bone tools (on ribs of Bovinae + shaft fragments).

**Interventions:** (Digested bones, tooth marks...)

**Interventions of burrowings:** (Remains of *Mellivora capensis*, many burrows...) = disturbance

**Hypotheses:** - Admixture of Human and Carnivore occupations - Intervention of Carnivore on bone discarded by Men - Taphonomic disturbances brought the mixing of bone accumulations

**Settlement site Intense occupation, Various activities**



**Sites:** CB Contrebandiers, DS1 Dar es Soltane 1, EM El Mnarsa, DS2 Dar es Soltane 2, EH2 El Harhoura 2, EH1 El Harhoura 1

**Occupations:** MSA occupations, Steriles levels, Iberomaurusian (LSA/UP), Aterian skull of Contrebandiers, Aterian skull of Dar es Soltane 2

**Microfauna:** Microfauna with arid affinity, Microfauna with humid affinity

**Ungulates:** "Large Ungulates", "Small Ungulates", Gazelle, Bovinae, Alcéphinae, Turtle

**Bone industry:** Pedunculate elements, "Retouchoirs", More marine mollusk

**Other:** Fire places, Pigments

**Hypothetical scheme of the occupations of Témara Region** (D'après 1: Balter, 2011; 2: Barton et al., 2009; 3: Campmas, PhD in progress; 4: Debnath, 1982; 5: d'Errico et al., 2009; 6: Halet, submit; 7: Jacobs et al., in press; 8: Jacobs et al., submit; 9: Janati-Idrissi et al., submit; 10: Monchot et Aouraghe, 2009; 11: Nespoulet et al., 2008a, 2008b; 12: Petit et al., 1999; 13: Scheweninger et al., 2010; 14: Stoetzel, 2009; Stoetzel et al., 2010; 15: Waelbroeck et al., 2002)