Dietary traits of the ungulates and seasonality of the human occupations from the Middle-Upper Palaeolithic transition at Cova Eirós (Galicia, Spain)

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Cova Eirós



Radiocarbon dates

Level 3 = 41299-38390 cal BP (OxA-30471), one of the latest occurrences of Neandertals in North Iberia.

Objectives

- Characterization of the dietary traits of the ungulates and reconstruction of the palaeoenvironmental conditions that prevailed at the time of the last Neanderthal and the first *Homo sapiens* in the NW of the Iberian Peninsula.
- Estimation of the timing (duration and seasonality) of the Neanderthal and *Homo* sapiens occupations at Cova Eirós.

Methods

- Characterization of the ungulate diets and duration of occupations using tooth mesowear and microwear.
- Estimation of the age and season at death from dental eruption and 2. replacement.

Dietary traits and habitats of the ungulates Leaf browsers, mixed feeders and grazers = Presence of a high diversity of habitats in the surroundings of the cave.

Duration and seasonality of the occupations





leaf browsers dominate the large The mammal assemblages in the four levels analyzed =

- 1. Dominance of wooded habitats around the site, or
- 2. Preference for the hominins to exploit the wooded habitats for hunting chamois and red deer.

Tooth wear detected a shift toward more abundant ungulates coming from woodland habitats =

Change in subsistence strategies with the increase of exploitation of woodland habitats by Neanderthals at the time of formation of Level 3A and by *Homo sapiens* in Level 2.



estimated to 2-3 months old.

Tooth microwear and tooth eruption and replacement sequence suggest that settlements of the cave by Neanderthals of Level 3A and by Homo sapiens in Level 2 were short seasonal occupations that took place during summer.

Discussion and conclusions

Neanderthals and Homo sapiens followed the same occupational pattern and exploited the same habitats around Cova Eirós in Levels 3 and 2, respectively.

These results are supported by other archaeological evidences from the two levels. In Level 3A, the non-residential nature of occupations, the low density of artefacts and the fragmentation of the chaînes opératoires are suggesting a high mobility for the Neanderthal groups. In Level 2, the lithic management strategies and the low density of artefacts also support short and repeated visits to the cave by *Homo sapiens* (de Lombera-Hermida et al., 2021).

Our findings of short summer occupations of the cave by hominins fit well with the abundance of cave bear remains in the same levels that used the cave as a place for hibernation and breeding (Valverde Tejedor, 2019; de Lombera-Hermida et al., 2021).

The cave located at 785 m, and surrounded by mountainous ranges reaching 1000 m, was occupied by Neanderthals and Homo sapiens during the warm season and by cave bears for hibernation during the cold season. The timing of the human occupations at Cova Eirós also corresponds to the period when the game, such as R. rupicapra, is moving up from the plains where they spent the cold season to higher altitude areas. These patterns of short seasonal occupation and groups with a high mobility are well documented in the Middle Palaeolithic or early Upper Palaeolithic of the Iberian Peninsula.



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