

Montmaurin-La Niche mandible reveals the complexity of the Neanderthals' origin

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Top view of the Montmaurin-La Niche mandible/José María Bermúdez de Castro. Credit: CENIEH

A team of scientists from the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH) has just published a paper in the journal *PLOS ONE* on the Middle Pleistocene Montmaurin-La Niche mandible, which reveals the complexity of the origin of the Neanderthals.

This mandible was found by Raoul Cammas on 18 June 1949 in the karstic cavities of Montmaurin within the La Niche cave (France), where stone tools and fossil remains of different species of canids, equids and ursids also appeared, helping to place it in time.

The presumed age of this mandible, between 200,000 and 240,000 years, had led to the presumption of a close morphological similarity to the mandible of European Neanderthals, particularly in the teeth, but the mathematical techniques applied to the study of a wide variety of mandibles, including those of a group of recent African ones, show that it is more in line with the most archaic specimens from Europe, including those from Dmanisi.

"We find here an archaic mandible, and dental pieces which taxonomically are indisputably Neanderthal, which helps to support the hypothesis that the Neanderthal lineage did not evolve linearly but in mosaic," explains Bermúdez de Castro.

Comparative studies

Considered for two decades to be the oldest human fossil found in France, the mandible has formed part of different comparative studies, and the description published by G. Billy and Henri V. Vallois in 1977 stands out. That work was undertaken more than 40 years ago, in the context of what was then known and of the theories then current on the colonization of the European continent.

However, human evolution in Europe was undoubtedly more complex

than was thought only a couple of decades ago, as is explained in this paper entitled A reassessment of the Montmaurin-La Niche mandible (Haute Garonne, France) in the context of European Pleistocene human evolution, in which Mario Modesto, María Martín-Torres and Marina Martínez de Pinillos also participated.

The possibility that there could have coexisted at least two hominin lineages, and that interbreeding, prolonged periods of isolation, genetic drift and other processes were habitual in the Middle Pleistocene in Europe is gaining momentum, while at the same time linear hypotheses such as "accretion" are losing ground.

"The appearance of the classic Neanderthals in the Late Pleistocene is a question by no means finally settled. There remain many open questions, and the Montmaurin-La Niche mandible now joins the list of X-files," concludes Bermúdez de Castro.

More information: Amélie Vialet et al. A reassessment of the Montmaurin-La Niche mandible (Haute Garonne, France) in the context of European Pleistocene human evolution, *PLOS ONE* (2018). [DOI: 10.1371/journal.pone.0189714](https://doi.org/10.1371/journal.pone.0189714)

Provided by CENIEH

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