

Max-Planck-Institut für evolutionäre Anthropologie

Max Planck Institute for Evolutionary Anthropology



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PRESS RELEASE

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Neanderthal-modern human hybrid not supported

Among the earliest reliably dated modern human fossils from Europe is the Cioclovina calvaria from Romania. This individual lived about 28-29 thousand years before present, and has recently been argued to represent a Neanderthal-modern human hybrid. In an article appearing online at the *Journal of Human Evolution*, a team of researchers from the Max Planck Institute for Evolutionary Anthropology, Germany, and the University of Bucharest, Romania, conducted the most comprehensive anatomical description of the specimen to date and 3-D comparative shape analysis. They reject the hypothesis that the Cioclovina specimen is a Neanderthal-early modern human hybrid: “Cioclovina does not conform to any of our expectations for a Neanderthal-early modern human hybrid either in its overall shape or its anatomical details. It is a typical modern human in all respects” said leader of the research team Katerina Harvati (Max Planck Institute).

The team was able for the first time to develop criteria for identifying hybrids in the fossil record, based on evidence from living hybridizing primate and mammal species. These criteria (such as much greater or much smaller size than the parental species average, evidence for developmental instability, and intermediate shape) were then applied to Cioclovina, in order to test the proposal that it represents a Neanderthal-modern human hybrid. Contrary to recent claims, Cioclovina did not show any of the expected hybrid conditions. Instead both its overall and detailed anatomy are very close to the average for modern humans. The cranium in fact showed strong morphological similarities to other early modern Europeans. “We feel that this morphology was probably representative of early modern people who migrated out of Africa around 40 thousand years ago and were the ancestors of people living today” concludes Harvati.

The study was conducted by Katerina Harvati (Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany), Philipp Gunz (Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany) and Dan Grigorescu (University of Bucharest, Romania).

Figures:

Figure 1: The Cioclovina cranium (upper left corner). Scan of a modern human (upper right and lower row) showing the three-dimensional shape measurements in yellow (points and outlines) used in the study (credit: Maximilian von Harling).

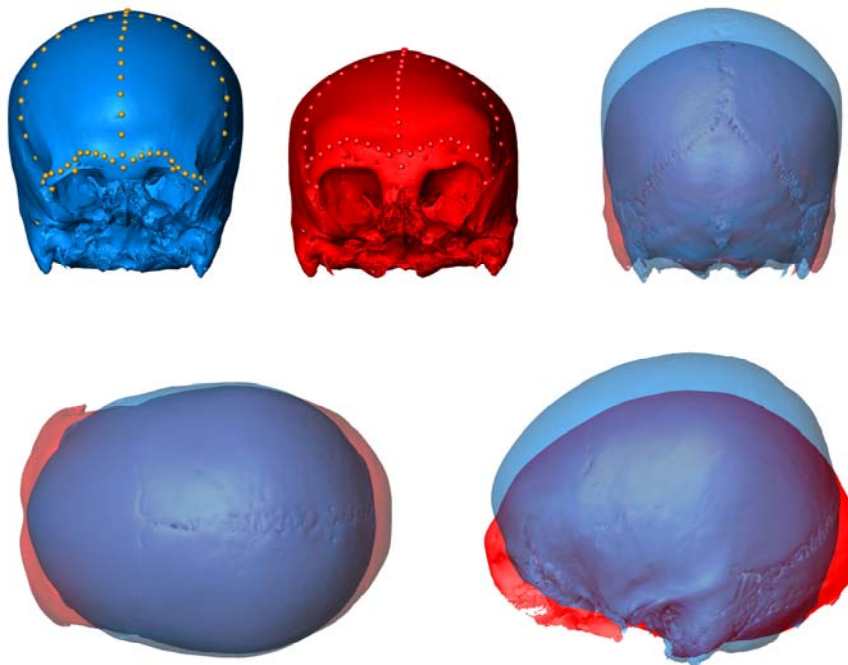


Figure 2: The modern human cranial shape (blue) compared to the Neanderthal cranial shape (red). Yellow points indicate the three-dimensional shape measurements used in the study (credit: Maximilian von Harling).

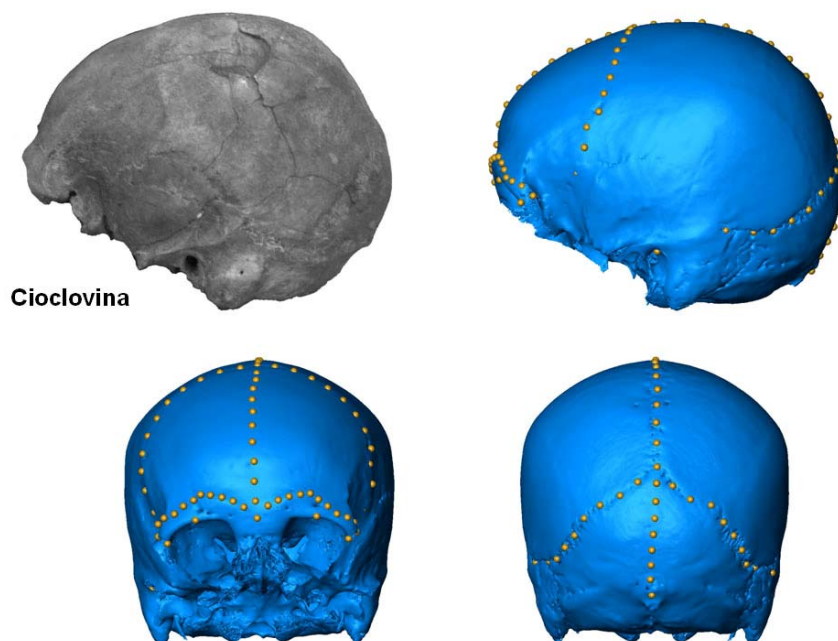


Figure 3: The Cioclovina cranium in lateral (A) and frontal (B) views (credit: Prof. Grigorescu).



Original publication:

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