

Fossil skull casts doubt over modern human ancestry

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The Broken Hill (Kabwe 1) skull is one of the best-preserved fossils of Homo heidelbergensis. Credit: Natural History Museum London.

Griffith University scientists have led an international team to date the skull of an early human found in Africa, potentially upending human evolution knowledge with their discovery.

The Broken Hill (Kabwe 1) skull is one of the best-preserved fossils of



the early human species Homo heidelbergensis and was estimated to be about 500,000 years old.

Professor Rainer Grün from the Environmental Futures Research Institute led the team which analysed the skull and other fossil <u>human</u> <u>remains</u> found in the vicinity including a tibia and femur midshaft fragment. The material is curated at the Natural History Museum in London, where collaborators Professor Chris Stringer and Senior Curator Michael Rumsey work.

Discovered in 1921 by miners in Zambia, the Broken Hill remains have been difficult to date due to their haphazard recovery and the site being completely destroyed by quarrying.

Using radiometric dating methods, Professor Grün's analyses now puts the skull at a relatively young date, estimating it is between 274,000 and 324,000 years old.

Publishing their findings and methodology in *Nature*, Professor Grün said "the new best age estimate of the fossil impacts our understanding of the tempo and mode of modern human origins."





Credit: Griffith University

The research also suggests that human evolution in Africa around 300,000 years ago was a much more complex process, with the coexistence of different human lineages.

Professor Stringer said: "Previously, the Broken Hill skull was viewed as part of a gradual and widespread evolutionary sequence in Africa from archaic humans to modern humans. But now it looks like the primitive species Homo naledi survived in southern Africa, H. heidelbergensis was in Central Africa, and early forms of our species existed in regions like Morocco and Ethiopia."



Professor Grün said his team's research adds to new and emerging studies which question the mode of modern <u>human evolution</u> in Africa and whether Homo heidelbergensis is a direct ancestor of our species.

More information: Rainer Grün et al. Dating the skull from Broken Hill, Zambia, and its position in human evolution, *Nature* (2020). DOI: 10.1038/s41586-020-2165-4

Provided by Griffith University

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