Man's earliest direct ancestors looked more apelike than previously believed

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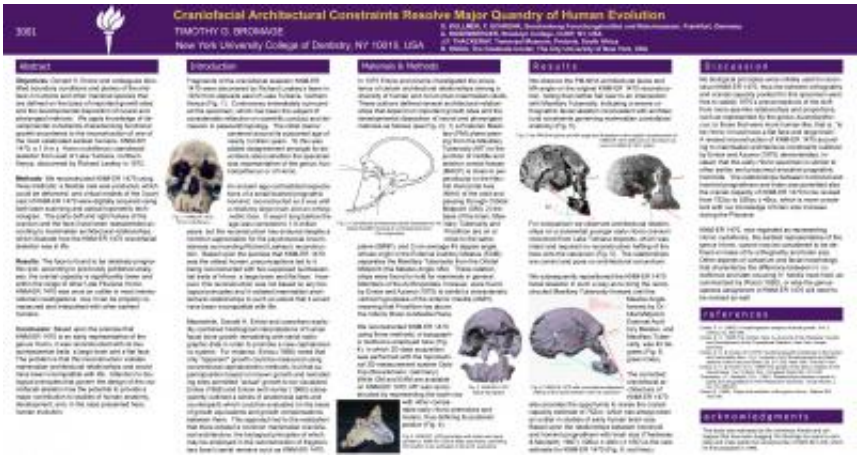

IADR 2007 Conference Poster Dr. Timothy G. Bromage, New York University College of Dentistry, NY 10010, USA. Credit: Timothy G. Bromage

Modern man"s earliest known close ancestor was significantly more apelike than previously believed, a New York University College of Dentistry professor has found.

A computer-generated reconstruction by Dr. Timothy Bromage, a paleoanthropologist and Adjunct Professor of Biomaterials and of Basic Science and Craniofacial Biology, shows a 1.9 million-year-old skull belonging to Homo rudolfensis, the earliest member of the human genus, with a surprisingly small brain and distinctly protruding jaw, features commonly associated with more apelike members of the hominid family

living as much as three million years ago.

Dr. Bromage"s findings call into question the extent to which H. rudolfensis differed from earlier, more apelike hominid species. Specifically, he is the first scientist to produce a reconstruction of the skull that questions renowned paleontologist and archeologist Richard Leakey"s depiction of modern man"s earliest direct ancestor as having a vertical facial profile and a relatively large brain – an interpretation widely accepted until now.

Dr. Bromage"s reconstruction also suggests that humans developed a larger brain and more vertical face with a less pronounced jaw and smaller teeth at least 300,000 years later than commonly believed, perhaps as recently as 1.6 million to one million years ago, when two later species, H. ergaster and H. erectus, lived. Dr. Bromage presented his findings today at the annual scientific session of the International Association for Dental Research in New Orleans.

The fragmented skull Dr. Bromage reconstructed was originally discovered in Kenya in 1972 by Dr. Leakey, who reassembled it by hand and dated it at nearly three million years of age, an estimate revised to 1.9 million years by scientists who later discovered problems with the dating.

"Dr. Leakey produced a biased reconstruction based on erroneous preconceived expectations of early human appearance that violated principles of craniofacial development," said Dr. Bromage, whose reconstruction, by contrast, shows a sharply protruding jaw and a brain less than half the size of a modern human"s. These characteristics make the 1.9 million-year-old early human skull more like those of two archaic, apelike hominids, Australopithecus and early Paranthropus, living at least three million and 2.5 million years ago, respectively.

Dr. Bromage developed his reconstruction according to biological principles holding that the eyes, ears, and mouth must be in precise relationship to one another in all mammals.

"Because he did not employ such principles, Dr. Leakey produced a reconstruction that could not have existed in real life," Dr. Bromage concluded.

Source: New York University