

"Discussion" project: Early hominid (hominin) variation and species identification

Background:

Over the past three decades an increasing number of early hominid and putative early hominid fossils have been found in northern and eastern Africa. These fossils range between 7.0 and 1.75 million years ago. Moreover, there has been a proliferation of new names to describe these fossils. Some of these new taxa of australopithecines include:

major issues of controversy

<i>Australopithecus afarensis</i>	homogeneity of specimens referred to the taxa
<i>Australopithecus anamensis</i>	difference from <i>A. afarensis</i> and other australopiths
<i>Australopithecus garhi</i>	difference from all other australopiths
<i>Australopithecus bahrelghazali</i>	difference from <i>A. afarensis</i>
<i>Kenyanthropus platyops</i>	validity of genus and difference from all other australopiths
<i>Paranthropus aethiopicus</i> (aka <i>Australopithecus</i>) differences between one another	
<i>Paranthropus boisei</i>	
<i>Ardipithecus ramidus</i>	differences from <i>A. afarensis</i> and one another
<i>Ardipithecus kadabba</i>	
<i>Sahelanthropus tchadensis</i>	evidence for status as hominid
<i>Errorin tugenensis</i>	evidence for status as hominid

The issues are, to what extent are these taxa actually different from one another, and is the establishment of so many separate species either justified or useful? What are the researchers trying to accomplish by naming new genera and species?

In this particular case we are going to examine the *Paranthropus* taxa. Notice too that many researchers do not recognize *Paranthropus* as a distinct genus here, but call it *Australopithecus*.

For your short paper compile a table which lists the diagnostic features which are said to distinguish the taxa *boisei* and *aethiopicus*. (Appendix III in your textbook is great for this purpose.) Whenever possible also include those basic features which distinguish the taxa from panids (chimps) as well as those features which distinguish it from the other early hominids. (This may also require you to check the descriptions of some of the other hominids - see Asfaw *et al.* 1999 for such a list.) Write a commentary which considers generally what the problems may be in recognizing fossil genera and species in human palaeontology. Consider whether recognition of this particular genus and these two species seems justified, (both by definition and by amount of material) and separated enough in time and space to be useful in palaeoanthropological research. Limit your discussion to 4 (double spaced) pages, plus your table.

Due: March 8

References for the early hominid variability discussion

For a general reference and discussion see your textbook.

Campbell, B.G., J.D. Loy and K. Cruz-Urbe
2006 *Humankind Emerging* (9th ed.). (esp. Appendix III)

or

Campbell, B.G. and J.D. Loy
2000 *Humankind Emerging* (8th ed.). (esp. Appendix III)

For a commentary on the practicality of recognizing palaeontological taxa.

Delson, E.
1997. One skull does not a species make. *Nature* 389:445-46

other useful refs.

Asfaw, B., T. White, O. Lovejoy, B. Latimer, S. Simpson, and G. Suwa
1999 *Australopithecus garhi*: a new species of early hominid from Ethiopia.
Science 284:629-635. **useful chart**

Grine, F.E.
1993 Australopithecine taxonomy and phylogeny: historical background and recent interpretation, in R.L. Ciochon and J.G. Fleagle (eds.) *The Human Evolution Source Book*. Prentice Hall, pp. 198-210.

Leakey, M.G., F. Spoor, F.H. Brown, P.N. Gathogo, C. Kiarie, L.N. Leakey, and I. McDougall.
2001 New hominin genus from eastern Africa shows diverse middle Pliocene lineages.
Nature 410:433-440. **useful chart**

Suwa, G., B. Asfaw, Y. Beyne, T.D. White, S. Katoh, S. Nagaoka, H. Nakaya, K. Uzawa, P. Renne and G. WoldeGabriel.
1997 The first skull of *Australopithecus boisei*. *Nature* 389:489-92.

Walker, A., R.E. Leakey, J.M. Harris, and F.H. Brown.
1986 2.5-Myr *Australopithecus boisei* from west of Lake Turkana, Kenya. *Nature* 322:517-22.