

Sexual Dimorphism in Hominin Supraorbital Morphology

K.P. McNulty, *Department of Anthropology, Baylor University*

K.L. Baab, *Department of Anthropology, CUNY and New York Consortium in Evolutionary Primatology*

The supraorbital region is a frequently used indicator of sex in fossil hominin specimens. Known to be useful in distinguishing sex within modern humans and perhaps apes, morphology thought to be “robust” is usually designated as male, while more “gracile” forms are thought to be female. Less attention has been paid to metric variation between sexes beyond differences in absolute size. In assessing the sex of fossil humans, however, criteria of robusticity and size assume either actual (when multiple specimens are thought to be conspecific) or potential (when only a single specimen is known) vectors of sexual dimorphism. This can be especially problematic in hominins which are characterized by reduced canines, a good independent corroboration of sex in most other primates.

In order to examine the usefulness of supraorbital morphology in distinguishing between sexes, this study examined patterns of dimorphism in the supraorbital region of multiple hominin and hominoid species. Landmark-based morphometric methods were used to test a null hypothesis of monomorphism in gorillas, chimpanzees, bonobos, and modern humans. Patterns of shape differences between the sexes were then examined for each species. These analyses found significant differences between mean configurations of males and females in all species, albeit with substantial range overlap. The amount of total variability accounted for by sex is small, however, ranging from 6.6% in modern humans to 2.7% in *Pan troglodytes*. Moreover, patterns of shape differences between the sexes were distinct amongst the various species. These results recommend caution in the use of supraorbital morphology to diagnose sex among fossil specimens, especially without knowledge of sexual variation within species, as is often the case with fossil hominins.

This research was supported in part by NSF grants to the NYCEP Morphometric Group (9982351), NYCEP (9602234 and 0333415), and K. Baab (DDIG 0424262).

Abstracts of the Paleoanthropology Society annual meeting, 2006