

Dental morphology and community structure of Plio-Pleistocene cercopithecoid primates from East and South Africa

IRENE E. SMAIL

Institute of Human Origins and School of Human Evolution and Social Change, Arizona State University

Fossil cercopithecoid primates of the African Plio-Pleistocene are often found together in fossil deposits across East and South Africa. These species may have co-occurred in life and exploited similar types of resources in shared environments, as extant monkeys in Africa and Asia are known to do. Some of these fossil species are represented today by congeneric or descendant species with similar adaptations while others have no modern analogue. This project uses dental morphology to compare community structure across potentially co-occurring fossil and modern cercopithecoid populations (the cercopithecoid taxocene).

Relative enamel thickness, shearing potential, and dental shape ratios from the P4 – M3 toothrow were measured from extant ($n > 700$) and fossil cercopithecoid specimens ($n > 1000$). The latter primarily targeted the Hadar, Shungura, and Koobi Fora Formations of East Africa and the sites of Makapansgat, Sterkfontein, and Swartkrans in South Africa. Principal component analyses were performed separately on the maxillary and mandibular dentitions and resulting component scores were used to reconstruct the taxocene dental morphology at each site.

In general, the African cercopithecoid taxocene is similar across the main fossil sites analyzed. Patterns of overlap between fossil and modern sites may reflect environmental similarities or the adaptability of generalist cercopithecoids. An apparent niche shift from the Plio-Pleistocene to today reflects both taphonomic and ecological factors: a lack of smaller-bodied fossil cercopithecoid and colobine species combined with an expanded dental ecomorphological niche of larger-bodied fossil species.

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