Dental Microwear Analysis of Fossil *Parapapio* and *Theropithecus* from Makapansgat Cave, South Africa

Fossil *Parapapio* and *Theropithecus* taxa from Makapansgat cave, South Africa are dated to 2.9 million years ago. These fossils are found in the same contexts as *Australopithecus africanus*, an early bipedal hominin, and the dietary proclivities of these fossil monkeys can provide a paleoecological context for early hominins from this cave. Low-magnification stereomicroscopy was included to examine resin casts of the original fossil specimens, and a comparative sample, including *Papio* sp. (n = 6), *Theropithecus gelada* (n = 1), *Gorilla gorilla* (n = 2) and *Pan troglodytes* (n = 1) with known diets are utilized to interpret the dental microwear signature of the fossils. The microwear features included small pits, large pits, fine scratches and coarse scratches. The features were counted on the paracone of the second molar using an ocular reticle and an external light source. Analysis of Variance demonstrates that the taxa can be distinguished on the basis of use-wear scars given the large F values (but non-significant p values). For example, *Parapapio*, *Papio* and *Pan* exhibit a greater number of small pits compared to *Gorilla* and *Theropithecus*, although the range of variation overlaps across the taxa. For large pits, *Parapapio* is distinct from all other taxa except *Theropithecus darti*. For fine scratches, *Theropithecus gelada* is distinct from all taxa except *Gorilla* and for coarse scratches, *Parapapio* is nearly distinct from *Papio*. A discriminant function analysis shows a 56% overall classification rate for the taxa. A canonical scores plot separates *Theropithecus* and *Gorilla* from *Parapapio*, *Papio* and *Pan* on the basis of fine scratches. My findings demonstrated that fossil papionins probably ate harder foods than their extant counterparts suggesting that the consumption of fruits with hard seeds and or underground storage organs characterized the diets of the fossil taxa. The paleoecological inference is that Pliocene Makapansgat was more forested than the savanna habitats of extant baboons.

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