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## Primate facial morphology and dentition, issues and perspectives



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Facial morphology in hominins has undergone numerous changes throughout evolution, notably the reduction of prognathism in *Australopithecus* towards a more orthognathous form in *Homo* and *Paranthropus*. Similarly, the dimensions of post-canine teeth and their ratios have shown significant variation in the history of the clade. Morphological studies often treat dentition and facial morphology independently, although these two modules are closely integrated via common developmental and genetic pathways, even if evolution does not always reflect this integration. Quantitative genetic methods provide valuable tools for understanding these patterns of genetic and morphological integration, shedding light on the underlying genetic architecture of phenotypes.

This seminar will discuss my research on facial morphological variation in primates and how the study of its genetic and morphological integration with dentition opens new perspectives. My work on the ontogenetic development of facial morphology in *Paranthropus boisei* reveals an early selection for a functional masticatory morphology, even before the eruption of the permanent dentition. My PhD project further explores the genetic integration of facial morphology and dentition in primates using current data. To investigate this, I conduct quantitative genetic analyses on a sample of ~1000 baboons from a captive colony with known pedigrees. Preliminary results show genetic correlations between certain facial traits and molar dimensions. Although preliminary, these findings represent the first evidence of genetic integration between cranial and dental traits, opening new avenues in the study of primate morphological evolution.

