Craniofacial Variation in the Old World monkeys

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Diversity is central to comparative anatomy. Anatomists have long been interested in describing contrasts between species and explaining morphology in terms of environmental variation, functional adaptation and evolutionary constraints. The Old World monkeys are an excellent group with which to investigate diversity exhibiting it both at the interspecific and intraspecific level. In my project I am focusing on two groups of Old World monkey: the vervets and the baboons. Both radiated in the Pleistocene (after 2 million years ago), are widespread across sub-Saharan Africa, and have very similar geographic distributions. Other similarities include their general trend towards terrestriality and their ability to eat a wide range of foods. Both baboons and vervets exhibit considerable morphological diversity across their range, tending to be classified as species with multiple subspecies. They nonetheless differ in some important respects: baboons are much larger bodied, manage to exploit a more diverse array of habitats and have a broader dietary spectrum than vervets. I aim to identify the similarities and differences in morphological pattern between baboons and vervets (for example, whether there is a shared trend towards decreasing body size from West to East Africa), as well as to investigate the processes that lead to morphological diversity within the two groups. To this end, I am exploring the effects of size, environment and geography on skull shape in vervets and baboons, as well as assessing how dietary differences may impact on skull form via biomechanical considerations. My ultimate aim is to determine whether the patterns of morphological diversification are similar in baboons and vervets, and use this to construct more general models of differentiation in widespread mammals.