

IS A FIXED OR PLASTIC RESPONSE TO ECOLOGICAL VARIATION THE KEY TO CAPUCHIN ADAPTABILITY?

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Capuchins present a compelling model taxon for studies of primate morphological and behavioral adaptation and evolution, particularly given that the genus exhibits two distinct morphotypes: a robust tufted group and a gracile untufted group. In the past, these two morphotypes have essentially been treated as undifferentiated species, and the morphology, behavior, and ecology of a single species or subspecies has often been used to illustrate the tufted or untufted ecomorphological pattern. Given our expanding knowledge of capuchin taxonomic and ecological breadth, can any tufted or untufted species or subspecies adequately represent its given group? We first outline the ecological diversity of all presently identified species and subspecies. Second, we review dental wear and morphological studies that have historically grouped subspecies into a single representative morphotype for analysis. We find that the answer to our question is a matter of scale. Dietary and ecological diversity among species or subspecies within a given morphotype is associated with a particular suite of dental wear signals and with functionally important, although subtle, differences in cranial and postcranial morphology. We argue that these microevolutionary differences indicate present selective pressures that may lead to macroevolutionary contrasts. That said, the robust and gracile groups are ecologically, morphologically, and behaviorally real and the robust group, in particular, has a suite of traits (e.g. more powerful jaws, powerful forelimbs, increased tool use, and smaller groups) which may permit exploitation of a broader range of habitats.

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