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Quantifying shape and size variation is essential in evolutionary biology and in many other disciplines. Since the "morphometric revolution of the 90s," an increasing number of publications in applied and theoretical morphometrics emerged in the new discipline of statistical shape analysis. The R language and environment offers a single platform to perform a multitude of analyses from the acquisition of data to the production of static and interactive graphs.

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Morphometrics or morphometry refers to the quantitative analysis of form, a concept that encompasses size and shape. Morphometric analyses are commonly performed on organisms, and are useful in analyzing their fossil record, the impact of mutations on shape, developmental changes in form, covariances between ecological factors and shape, as well for estimating quantitative-genetic parameters of shape. Morphometrics can be used to quantify a trait of evolutionary significance, and by detecting ch

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Morphological evolution of head shape (above) and body shape (below). The trees on the left represent the phenotypic evolutionary shifts detected by l1ou which are colored (ochre colored regimes in head shape for Simalia and Morelia are convergent). Branch lengths on these trees are proportional to the relative number of times that a shift was recovered in the random posterior sample.

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The study of geometric morphometrics in anthropology has made a major impact on the field of morphometrics by aiding in some of the technological and methodological advancements. Geometric morphometrics is an approach that studies shape using Cartesian landmark and semilandmark coordinates that are capable of capturing morphologically distinct shape variables. The landmarks can be analyzed using various statistical techniques separate from size, position, and orientation so that the only variabl

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Their radiation is connected to trophic specialization, manifested in dentition, head morphology, and body shape. Geometric morphometric methods have been established as efficient tools to quantify such differences in overall body shape or in particular morphological structures and meanwhile found wide application in evolutionary biology.

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