

From the outer morphology to the inner structure. Recent advances and perspectives in the study of the hominin fossil record

Roberto Macchiarelli, Professor at the Dept. Geosciences of the Univ. of Poitiers and at the National Museum of Natural History of Paris (UMR 7194 CNRS), France

Along the last two decades, significant methodological advances in the characterization of the primate dental and bony tissues have deeply affected our traditional research strategies and fostered new concepts and new questions in paleoanthropology. Coupled with the integration of the third dimension in structural visualization and the geometric morphometric-based quantitative assessment of shape variation, a significant enhancement occurred in the analytical shift from the hard outer morphology (the “container”) to the virtually rendered inner structure (the “contents”). Thanks to by now routinely utilized techniques of high resolution noninvasive exploration, extraction and imaging of the taxon-specific 'hidden' features, such integration has greatly improved our understanding of the evolutionary, adaptive, and functional patterns characterizing the fossil hominin dentition and postcranial skeleton.

Funding support provided by the French CNRS.