Adolescent archaics or adult moderns? Le Moustier 1 as a model for estimating the age at death of fragmentary supraorbital fossils in the modern human origins debate

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Abstract

This study documents and examines selected implications of the adolescent supraorbital anatomy of the Le Moustier 1 Neandertal. Le Moustier’s supraorbital morphology conforms to that expected of an adolescent Neandertal but indicates that significant development of the adult Neandertal torus occurs late in ontogeny. As the best preserved adolescent from the Late Pleistocene, Le Moustier 1’s anatomy is used to help distinguish adolescent from adult anatomy in two cases of fragmentary supraorbital fossils, the Vindija late Neandertals and KRM 16425 from Klasies River Mouth (South Africa). It has been suggested that the modern-like aspects of the Vindija and Klasies supraorbital fossils are a function of developmental age rather than evolution. Although Le Moustier 1’s anatomy does indicate that two of the Vindija fossils are adolescent; these two fossils have already been excluded from studies that demonstrate transitional aspects of the Vindija adult supraorbitals. Results of an analysis of KRM 16425 in light of Le Moustier 1 are more ambiguous. KRM 16425 is clearly not a Neandertal, but its morphology suggests that it may be an adolescent form of such late archaic Africans like Florisbad or Ngaloba. Both the Vindija and Klasies River Mouth cases highlight the need to be wary of confusing adolescent anatomy with modernity.

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