

International Symposium: **The evolutionary history of the human face**

Madrid, September 13, 2016

ABSTRACTS

The Face of *Australopithecus* and the Origin of *Homo*

William H. Kimbel

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Despite a highly diverse set of facial morphologies over the 3+ million year record of *Australopithecus* (*sensu lato*) no known australopith species presents an entirely satisfactory ancestral morphotype for the face of *Homo*, which, in its earliest well documented phases, is quite generalized in ways in which australopith faces show various specializations. This includes *A. sediba*, recently nominated as a potential ancestor of *Homo*, which we show is linked exclusively to *A. africanus* based on facial morphology.

Patterns of Variation within the Face of Early Hominins: Do We Have a Comparative Context?

Bernard Wood

George Washington University. Washington DC. USA.

Can we use patterns of variation in the faces of our closest living relatives to generate hypotheses about facial variation within extinct hominins? An obvious problem is that the large canines that we see in the living apes are likely to influence patterns of facial variation in those taxa, so how can we generate reliable hypotheses about intra- and interspecies variation in a clade that is partly defined by the small size of its canines?

Cranial Morphofunctional Modules and Mosaic Evolution

Juan-Luis Arsuaga

Universidad Complutense. Madrid. Spain.

I will analyze the origin of the Neanderthal and modern human characteristics in the skull, with a mention to the postcranial skeleton, in an attempt to recognize morpho-functional modules and adaptations in both species. I will try to do reverse engineering of modern humans and Neanderthals by playing life's tape backwards.

Cranial and Facial Morphology in the Middle Pleistocene and the Origins of Later Humans

Chris B. Stringer

Natural History Museum. London. UK.

A widespread form of *Homo heidelbergensis* at about 500ka may represent the Last Common Ancestor (LCA) for the Neanderthal and *Homo sapiens* lineages. But given the *sapiens*-like features of more ancient *H. antecessor* fossils coupled with new genetic data suggesting the divergence of the *sapiens-neanderthalensis* lineages precedes the known age of most of the fossils I assign to *heidelbergensis*, it may be timely to reconsider the nature and dating of the inferred LCA of late Pleistocene humans.



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A tale of two faces

Yoel Rak

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Within the hominid clade, two taxa deviate most dramatically from the generalized face—*Australopithecus boisei* and *Homo neanderthalensis*—but they do so in completely different ways. *A. boisei* has a flat, extremely orthognathic face, oriented primarily on the coronal plane. In the Neandertals, much of the infraorbital bone plate is oriented sagittally. Indeed, each of these configurations fulfills specific biomechanical needs.

Evolution of Modern Human Facial Morphology

Jean-Jacques Hublin

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The facial morphology of *Homo sapiens* is distinct from their relatives, the Neanderthals and Middle Pleistocene humans. One key difference between archaic and modern humans is a decrease in facial size through time. Here we quantify the ontogeny and evolution of facial shape and form from the Middle Pleistocene and its relation to the brain and neurocranium. We demonstrate the mosaic nature of cranial evolution in the Middle to Late Pleistocene.

Shaping the Human Face: Environment and Population History Influences on Human Cranial Variation

Katerina Harvati

Tübingen University. Germany.

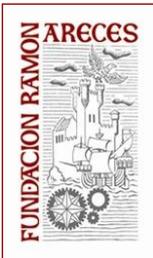
Multiple factors influence human cranial variation, including population history, adaptation and plastic response to environmental pressures. Recent research has attempted to disentangle these influences, so as to inform the use of cranial morphology in inferring past human dispersals.

Bone remodeling Provides a Mechanism to Evaluate the Craniofacial Complex

Timothy G. Bromage & Rodrigo S. Lacruz

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The facial skeleton is a snapshot of the history of natural forces operating to achieve a purpose. In documenting its bone growth remodeling we hope to gain further insight on the craniofacial complex.



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Assessing the functional significance of facial differences among recent hominins

Paul O'Higgins

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During hominin evolution we witness significant changes in craniofacial skeletal form potentially associated with diet, lifestyle and social structure. Testing of functional hypotheses depends on comparison of functional data from different morphs. Recent advances in methods for virtual functional simulation have revolutionised our ability to assess how differences in form translate into differences in function among fossil taxa.

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