

New research proves single origin of humans in Africa

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New research published in the journal *Nature* (19 July) has proved the single origin of humans theory by combining studies of global genetic variations in humans with skull measurements across the world. The research, at the University of Cambridge and funded by the Biotechnology and Biological Sciences Research Council, represents a final blow for supporters of a multiple origins of humans theory.

Competing theories on the origins of anatomically modern humans claim that either humans originated from a single point in Africa and migrated across the world, or different populations independently evolved from homo erectus to homo sapiens in different areas.

The Cambridge researchers studied genetic diversity of human populations around the world and measurements of over 6,000 skulls from across the globe in academic collections. Their research knocks down one of the last arguments in favour of multiple origins. The new findings show that a loss in genetic diversity the further a population is from Africa is mirrored by a loss in variation in physical attributes.

Lead researcher, Dr Andrea Manica from the University's Department of Zoology, explained: "The origin of anatomically modern humans has been the focus of much heated debate. Our genetic research shows the further modern humans have migrated from Africa the more genetic diversity has been lost within a population.

"However, some have used skull data to argue that modern humans

originated in multiple spots around the world. We have combined our genetic data with new measurements of a large sample of skulls to show definitively that modern humans originated from a single area in Sub-Saharan Africa."

The research team found that genetic diversity decreased in populations the further away from Africa they were - a result of 'bottlenecks' or events that temporarily reduced populations during human migration. They then studied an exceptionally large sample of human skulls. Taking a set of measurements across all the skulls the team showed that not only was variation highest amongst the sample from south eastern Africa but that it did decrease at the same rate as the genetic data the further the skull was away from Africa.

To ensure the validity of their single origin evidence the researchers attempted to use their data to find non-African origins for modern humans. Research Dr Francois Balloux explains: "To test the alternative theory for the origin of modern humans we tried to find an additional, non-African origin. We found this just did not work. Our findings show that humans originated in a single area in Sub-Saharan Africa."

Source: Biotechnology and Biological Sciences Research Council

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