



The Origins of Humans and the Concept of Race

CONTENT PRIMER

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As of 2024, close to eight billion humans currently inhabit nearly every corner of our planet, a remarkable expansion considering our species' humble beginnings. Archaeological discoveries reveal that human-like specimens, dating back as far as five to two million years ago, have been exclusively found in Africa. Among these remnants, complete skeletons resembling modern humans have been unearthed, dating from approximately 300,000 to 350,000 years ago, marking early populations of *Homo sapiens*.

A Great Migration out of Africa

The journey of human migration began in Eastern Africa, where the earliest fossil remains of *Homo sapiens* originated. Multiple waves of migration followed, initially within Africa itself before venturing beyond its borders. However, these early migrations failed to leave a genetic imprint on contemporary human populations.

Around 50,000 to 70,000 years ago, a pivotal event occurred as humans embarked on a migration out of Africa. This migration marked the beginning of a remarkable journey that saw modern humans spreading across the globe, ultimately populating every continent. (Figure 1).

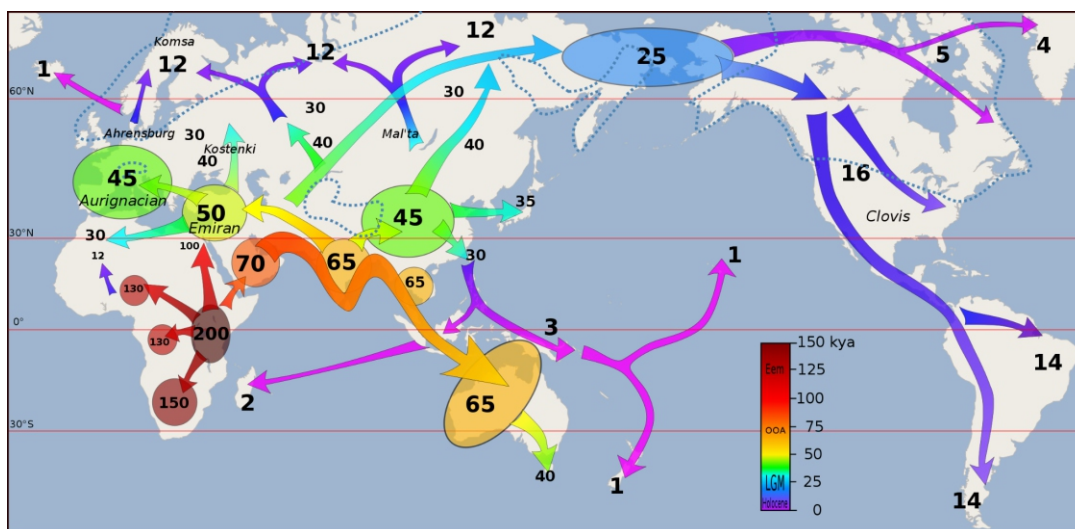


Figure 1. Archeological and genetic evidence indicates that humans migrated from Africa to the rest of the world. Numbers represent thousands of years ago; that is, a “200” equals 200,000 years ago. (Dbachmann, 2018).

Human Genetics and Ancestry

Scientists have scrutinized two genetic components to unveil human ancestry: Y-chromosome DNA haplogroups and mitochondrial haplogroups. Y-chromosome haplogroup analysis delves into mutations within non-recombining segments of the Y-chromosome, exclusive to male humans' lineage transmission. These segments, unaltered over time, offer insights into ancient paternal lineages. Studies indicate a common paternal ancestor for all present-day human populations, emerging in Africa approximately 120,000 to 156,000 years ago. Despite a multitude of male humans at that era, only one paternal lineage endured to the present, overshadowing others which became extinct.

Mitochondrial haplogroups, on the other hand, explore maternal ancestry. Mitochondrial DNA, inherited from mothers to both daughters and sons, remains distinct from nuclear DNA and undergoes no recombination. Analysis of mitochondrial haplogroups has revealed mutations across generations, pinpointing a shared maternal ancestor for all modern humans. This ancestry traces back to a single maternal progenitor in Africa around 155,000 years ago.

Human Evolution and Races

As humans dispersed across various regions, they encountered diverse environments, climates, and food sources, necessitating adaptations. This led to the emergence of distinct physical traits such as skin color, hair texture, and facial features. While some have categorized these variations into "races," it's crucial to recognize that the concept of human races is socially constructed and lacks biological basis. Genetic research demonstrates that all existing humans belong to the same species, *Homo sapiens*, sharing 99.9% genetic similarity. This supports the Biological Species Concept, indicating that all humans can interbreed and produce fertile offspring.

Analogously, the diversity among dog breeds showcases how distinct appearances can arise within a single species. Despite the striking differences in phenotypes among dog breeds, they all belong to the same species, *Canis familiaris*. Consequently, all domesticated dogs possess the ability to interbreed and produce fertile offspring.

References

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https://commons.wikimedia.org/wiki/File:Early_migrations_mercator.svg

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