



On the road to humanity - Via Humanitatis - The main stages of the morphological and cultural evolution of Man. The emergence of the human being



The Advent of Man

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Humans share an immensely long evolutionary history with the other primates, especially their closest relatives, the chimpanzees. Extending over more than 3.5 billion years, this joint pathway has proceeded to the time, about 6-8 million years ago, when the human line separated from the chimpanzee line, to initiate what was perhaps the most momentous succession of steps in the history of life on Earth. In just a few million years, it led the new beings issued from that side branch to spread out of their remote African habitat over our entire planet, occupying almost every bit of livable space available on it, covering it with a dense network of technological innovations, and exploiting for their own benefit a major part of its resources. The main factor behind this unique, phenomenal evolutionary success has been the development of the human brain, which expanded four-fold in a time less than one-hundredth the entire duration of brain development in nonhuman primates.

According to the scant available fossil evidence, this evolution proceeded by a series of intermediates of increasing brain size, each of which produced a side branch extending in some cases over up to more than one million years until it became extinct. Remarkably, the populations involved in this development were very small, a few thousand individuals, at most, offering little opportunity for chance to produce the underlying mutations

Viewed in a Darwinian perspective, with strict mutational economy as a requirement, this astonishing progression is best explained as driven by a single dominant genetic propensity toward brain enlargement encountering a succession of obstacles that were eventually overcome by some additional genetic change, such as the acquisition of bipedalism and the freeing of hands for multiple tasks, widening of the female pelvis to allow the passage of bigger heads at delivery, and a lower degree of development of the brain at birth followed by a longer period of extra-uterine maturation (neoteny). There is little chance that this history will be again repeated. Unless something is done to curb our population expansion, we are due to disappear in a near future, the victims of our success.