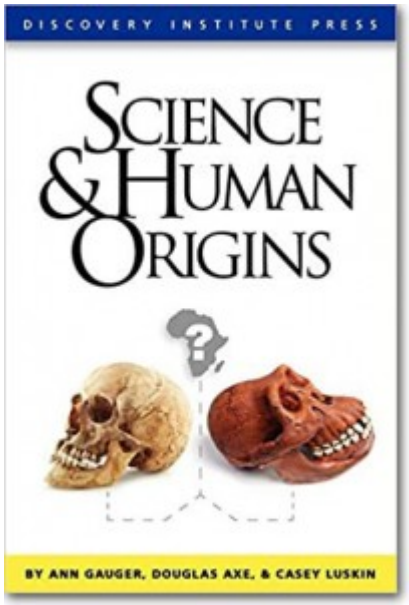
Science and Human Origins

Dr. Ray Bohlin explains how the Discovery Institute's book "Science and Human Origins" reveals why evolutionary theory cannot account for human origins.

Just What Needs to be Accomplished From Ape-like Ancestor to Humans?



In 2012 the Discovery Institute published an edited volume discussing the possibilities of human evolution from an ape-like ancestor by Darwinian evolution mechanisms. In this article I will offer an overview of the book, *Science and Human Origins*{1} and investigate the state of research into human origins from an evolutionary perspective.



First I'd like to discuss the first chapter by Ann Gauger. Ann is a research scientist with Biologic Institute with laboratory experience at Harvard and the University of Washington. Initially Ann points out two things that are necessary for there to be a link by common ancestry between humans and some ape-like ancestor. First there must be a step-wise adaptive path to follow. Neo-Darwinism depends on a slow, gradual path between two forms, genes or proteins. Rapid large jumps are likely to be too disruptive to the organism's state of being. Either survival or reproduction will be compromised.

Second, standard unguided Darwinian mechanisms such as mutation, selection, random drift and genetic recombination have to be sufficient for the task. Modern evolutionary theory is quite insistent that only natural unguided processes are necessary for evolution to occur no matter what the transition

being considered.

To better understand the problem, the book discusses the numerous types of biological changes needed to transition from a primarily arboreal monkey adjusted to life in the trees to a walking, running, hunting gathering, intelligent, talking human being. Compared to the other great apes, humans possess longer legs, shorter arms, different pelvis and rib cage, refined muscles for fingers, lips and jaw, eyes that can focus straight ahead and still see where we are walking, larger and unique brain structures, a head that sits directly on top of the spine and a spine that will support upright walking and running. Now add to that our unique capacities for language, art and abstract thought and you can easily understand that a lot needs to happen.

The usual series of fossils links together Lucy, the australopithecine closest to humans and Turkana Boy (*Homo erectus*), the first full member of our genus Homo. Lucy is said to have lived 3.2 million years ago (mya) and Turkana Boy about 1.5 mya. This is indeed a very short time span in evolutionary terms, especially considering all that must change. One recent paper from the journal *Genetics* suggested that it would take about 6 million years for a single mutation to be fixed in a primate lineage. This transition probably needs tens of mutations. If you need two mutations, forget it. That would require 216 million years.

It’s not too hard to see that standard evolutionary processes are wholly insufficient to cause the transition between australopithecines and humans.

The Earliest Fossils Leading to Humans

Now I want to discuss the evidence for human evolution from the fossils. Study into ancient humans is called paleoanthropology. Casey Luskin breaks down his discussion

into two parts, Early Hominin Fossils and Later Hominins: The Australopithecines. Let's start with the early hominins. As the story goes, humans and chimpanzees share a common ancestor about six million years ago. The fossil record of six million years ago has been pretty stingy. Not much to choose from for a human/chimp ancestor until the last twenty years.

The Toumai Skull (*Sahelanthropus tchadnesis*) was first reported in 2002 and is widely referred to as the oldest fossil in the hominin line. But when you dig a bit deeper as is always necessary when discussing human evolution, not everyone agrees. Some suggest that the Toumai Skull has far more in common with apes than anything resembling a human. All this skull really shows is how complex the evolutionary story has become.

A second fossil known as "Orrorin" (*Orrorin tugenensis*) or "original man" in a local Kenyan language was designated as the earliest human link in 2001.{2} But it was little more than a few bone fragments from an arm, thigh, lower jaw and a few teeth. As usual, there were some saying that Orrorin walked on two feet and others who said there isn't enough information to determine how this organism moved. Another fossil found on the island of Sardinia is truly an ape but had some indications that it too was bipedal. But Oreopithecus is thought to have arrived at its bipedal gait independently. This would clearly indicate that just because an ape-like fossil had bipedal adaptations doesn't mean it was ancestral to humans.

Last is the curious story of "Ardi" (*Ardipithecus ramidus*). Ardi is a 4.4 million year old fossil announced in 2009. Ardi quickly rose in fame and attention, being hailed by some as the oldest human ancestor found and the key to understanding how human bipedalism evolved. But Casey Luskin informs us that Ardi was originally found in the early 1990s. It took over a decade to piece the fossil together because it was found literally crushed and extremely brittle. How did they know how

it all really fit together? Within a year other paleontologists indicated Ardi had little to do with human evolution and was simply overhyped. That's become a familiar story. So much change to cover and so little evidence.

From "Lucy" to "Turkana Boy"

We now turn to the appearance and nature of a very important fossil category. If humans have evolved by a Darwinian process from an ape-like ancestor, then there must be some species or group of species that show clear signs of being intermediate between fossil apes and humans. For many years that position has been occupied by the "australopithecines." More specifically a particular species (*Australopithecus afarensis*) has been represented for decades as that ancestor, represented by a fossil known as "Lucy."

As Casey Luskin carefully documents, Lucy is a fossil that represents about 40% of the original organism so it is very incomplete, although far more representative that any earlier fossils. He also notes that the original fossil was found scattered over a hillside and may not truly represent a single individual. But significantly, Lucy is not necessarily closely related or descended from the Toumai Skull, Orrorin, or Ardi that I discussed above. There is much about Lucy that is very ape-like, and many anthropologists even question whether Lucy can be considered as truly ancestral to humans.

Most significant about Lucy is the contention by some that she possessed a form of bipedalism that was very much or at least similar to human locomotion. But even that is highly contested by the evolutionary experts. Lucy's skull is small and quite ape-like. The chest cavity is shaped in a way that would make upright walking difficult and her arms are long like apes and her legs are short like apes. Much is made about the shape of her pelvis. But as Luskin points out, the shape may have been an error in reconstruction since that part of the skeleton was

found severely crushed.

Even more to the point, Lucy shows numerous characteristics that require significant reworking compared to the earliest human-like fossils (*Homo erectus*) usually represented by "Turkana Boy." This two-million-year-old fossil shows itself to be entirely human. Even its small brain is within the range of modern humans and the brain architecture is also entirely human and nothing like Lucy. As Luskin points out there needs to be a sort of "Big Bang" between Lucy and Turkana Boy.{3}

What we have then is a large gap between apes and Lucy, and a large gap between Lucy and humans. So even though the fossil record could be interpreted to show a modest progression from apes to humans over time, there are no true transitional forms to document how this important transition took place.

DNA Doesn't Lie

In a well-documented chapter, Casey Luskin examines the claims of evangelical scientist, Francis Collins, that there is explicit and undeniable genetic evidence that humans and chimps evolved from a common ancestor. Collins has earned a stellar reputation as a medical geneticist for first discovering the gene responsible for cystic fibrosis, leading the Human Genome Project for over a decade, and then in 2009 being named by President Obama as the head of the prestigious National Institutes of Health (NIH). In between Collins's role as head of the Human Genome Project and his current role at NIH, he founded an organization, BioLogos, dedicated to convincing the church in America that evolution is indeed is a fact and we need to adjust both our science and preaching to reflect that fact.

In preparation for BioLogos he published a book titled *The Language of God*.{4} In this book, Collins presents a two-fold line of evidence that humans and chimps evolved from a common

ancestor. First he appeals to what are known as repetitive elements in our DNA. All mammalian genomes have relatively short sequences that can be very specific to species and groups of species, spread throughout the genome. It appears as if these sequences make copies of themselves and randomly insert the copy elsewhere in the genome. These repetitive elements are frequently found in the same place in the genome in distant species such as mice and humans. These are referred to as Ancient Repetitive Elements (ARE). These AREs are assumed to have no functional significance in the organism. This renders them as what is referred to as "selfish DNA" which exists only to survive and reproduce.

Some AREs are found in the same chromosomal location in mice and humans as well as humans and chimps. This sure seems like evidence of common ancestry, as Collins claims. But the assumption I just mentioned, that these sequences have no function, has been widely disproved in just the last ten years. As a result of the Human Genome Project that Collins led, we can now search all DNA sequences for some kind of function. Relying on work published by Richard Sternberg, Luskin lists twenty newly discovered functions for different types of repetitive elements in mammalian and human genomes.{5}

The chapter discusses two other now disproven evidences for common ancestry of humans and chimps. I hope you can see that new and mounting evidence is making the common ancestry of humans and chimps even more difficult to defend.

How Many Humans at the Start?

In the final chapter of *Science and Human Origins*, Ann Gauger discusses a bit more of an academic argument for humans having evolved from an ape-like ancestor. Some evolutionary geneticists have described an argument that the level of genetic variation for particular human genes could not have

arisen from a beginning of just two people. They state that standard genetic equations indicate that the human population most likely descends from a population of around 100,000 individuals. Just two people could not have generated this much variation in 100,000 years, let alone less than 10,000 years. If their analysis is true, then the Biblical account of Adam and Eve becomes a theological story with no historical significance. So let's take a look.

Gauger investigates in detail the most variable gene in humans. This gene codes for a protein involved in the immune system. One section of this gene is what geneticists call "hypervariable." Evolutionist Francisco Ayala and others researched this gene in the mid-1990s. Ayala's conclusion was that the original human population that separated from the line that evolved into chimps contained at least 32 copies of the gene in its population. Each of us has only two copies of each gene, so 32 copies requires at least 16 people. But since, over time, different gene copies are lost, Ayala estimated a human population of at least 10,000 individuals with an average closer to 100,000.

Gauger points out that Ayala misused several assumptions. He assumed a small mutation rate and he assumed no selection. When Gauger corrects for these errors and examines the studies of others, she determines that the equations, when the proper assumptions and mutation rates are used, the original human population could have had as few as 4 copies of this gene. Let's see, two copies per person, four copies, only needs two people. How about that!

Obviously in this short article I have intentionally glossed over the technical details. Ann Gauger gives you the details as well as more non-technical summaries along the way. I strongly encourage you to purchase the book. At 122 pages, it's readable in a Saturday. Considering all I have covered this week, my doubts about human evolution have only been strengthened. It becomes even more obvious over time that

Darwinian evolutionary mechanisms are proving less and less adequate.

Notes

1. Gauger, Ann, Douglas Axe, and Casey Luskin, *Science and Human Origins* (Seattle: Discovery Institute Press, 2012).
2. Ibid., p. 51.
3. Ibid., p. 65-70.
4. Francis Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2006).
5. Gauger, Ann, et al., *Science and Human Origins*, p. 87-88.

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