

Adam and Eve

Their existence and implications from both
Science and Faith

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Traditional Understanding





Introduction

- The Biblical story of Adam and Eve has driven and charmed people throughout the ages,
- It has become a way to think about ourselves in many ways and is the subject of fanciful as well as serious thought.
- Not a day goes by without some aspect of this story being brought up
- It is the subject of any number of telling cartoons which look at human frailty.
- As such Adam and Eve are not only our spiritual parents, but also our intellectual and emotional parents, whether they existed or not.

The Problem

- The Biblical Account from Genesis of our first parents has been accepted for millenia, but with different interpretations of its meaning
- Scientific Studies both of the **fossil record** and **genetic data** have suggested that human origins were more complicated than that of simply two parents
- Believers now have to attempt to bring these two views into agreement



Extent of this Discussion

- Debra and Loren Haarsma in their book:
- *Origins: Christian Perspectives on Creation, Evolution, and Intelligent Design* make the following remark:
 - *“Concerns about human origins drive much of the debate over creation, evolution and design.”*
- Thus human origins involve discussions of the Fall, Original Sin, and the nature of the Soul
- While these are important issues (and thus are good candidates for future discussions of our group), **this presentation will be limited to the origin of humanity** and how science applies to Biblical tradition.
- In short, we need to decide if these two people existed or not and as they say: “let the chips fall as they may”, rather than decide a priori based on later theological thought that they must have existed.

Why is this important

- Does it change our concept of human nature?
- If we are “fallen”, how do we view our actions?
- If we are not “fallen” but just need to improve, is this a healthier idea of who we are?

Assumptions that We Will Test

- From Genesis there are two accounts.

First account: Genesis seems to allow for **many** original humans.

“Then God said: ‘Let us make human beings in our image after our likeness...’ Gen 1:26

Second account: This account allows only **one set** of parents

- *Assumption 1*— There were no people prior to Adam and the female came after that.

“There was no man” Gen 2:5

“Then god formed the man out of the dust of the ground...” Gen 2:7

- *Assumption 2*—The Garden of Eden was somewhere in Mesopotamia

“Then God planted a garden in Eden, in the east” Gen 2:8

- *Assumption 3*—This all happened less than 10,000 years ago.

“Abel was a herder of flocks and Cain a tiller of the ground” Gen 4:2

The Role of Science

- A basic premise of this talk will be:
- Science cannot tell us for certain what is. But it can definitely tell us **what is not!**
- Thus in thinking about interpretations of biblical stories, science can help by ruling out certain ideas.
- In the case of Adam & Eve, if science shows they could not have existed exactly as in the Genesis account, then theologians need consider other meanings freed of a literal interpretation.

Adam & Eve as progenitor of humans

Scientific constraints

- Must have been black Africans
- About 60,000 years ago if you believe Adam named the animals
- About 200,000 years ago if only Homo sapiens
- Must have occurred over 300,000 years ago or earlier if we include Neanderthals and Denisovians
- From gene studies, must have been part of a larger group—6,000-10,000 individuals
- BUT biblical chronology places them only 6,000 years ago.



Perspective

- It has been generally recognized that there is a large gap between the cognitive capabilities of humans and other apes (although this gap is more of a continuum than a specific difference).
- This gap seems so large that humans are in a class by themselves perhaps because of their spiritual souls.
- But this has not always been so. Some 50,000 years ago there were up to five different species of Homo all of whom seem to have had similar cognitive capabilities:
- Neanderthals, Denisovans, Floresians, and two other smaller populations.

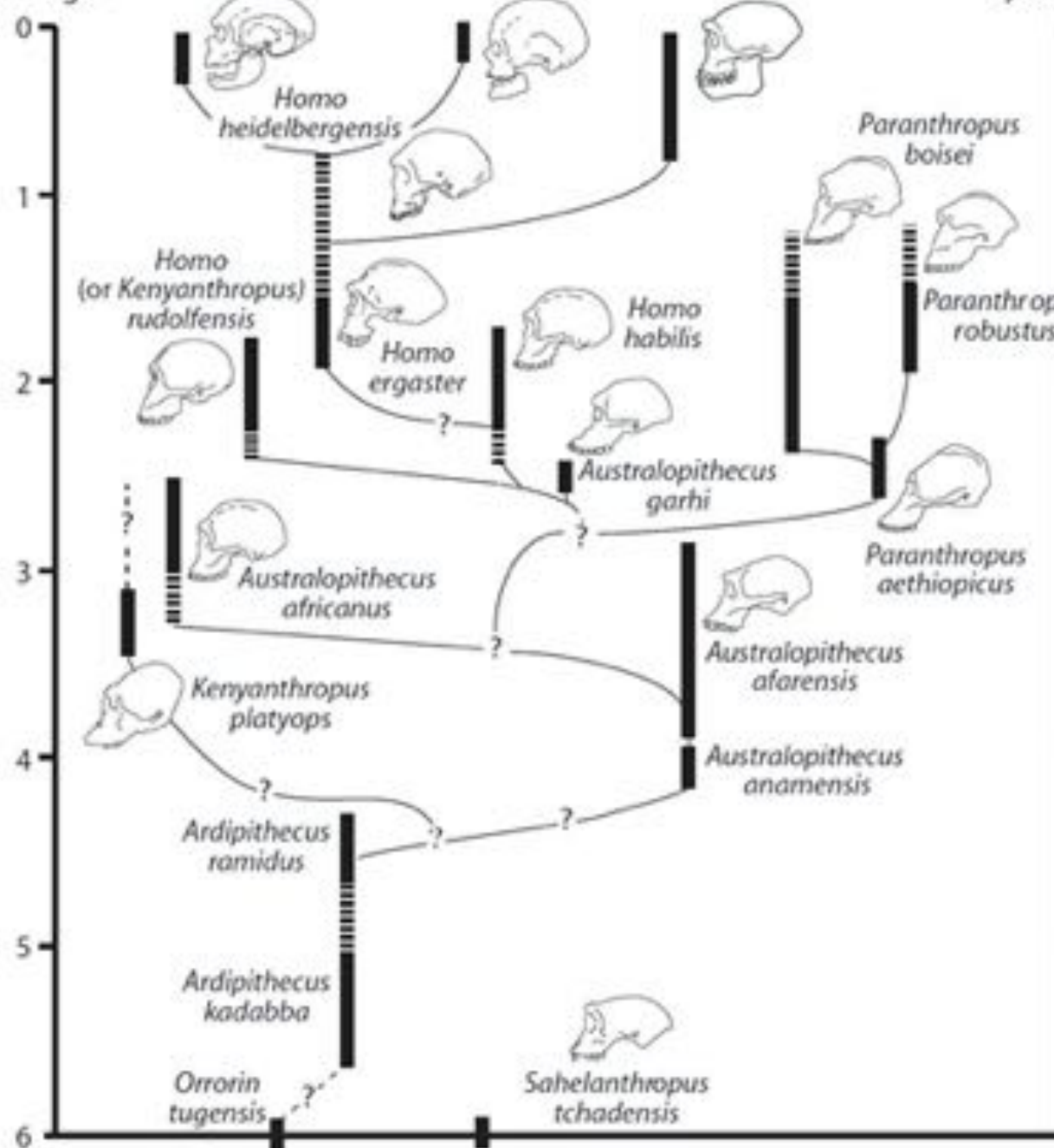
Fossil Record

- A rather continuous record of increasing brain size and abilities from fossils and accompanying material.
- *Homo Sapiens* seems to have originated from a combination of previous hominins-- in particular *Homo erectus* and *H. heidelbergensis*.
- Neanderthals seem to also have come from *H. heidelbergensis*
- Earliest records of primitive *H. sapiens* come from Africa—325,000 years ago. By 200,000 year ago they had spread throughout Africa, and they now have been found to have left Africa at least 125,000 years ago!
- *Homo erectus* has been found over most of Asia and Africa much earlier than *H. sapiens* but perhaps overlapping?

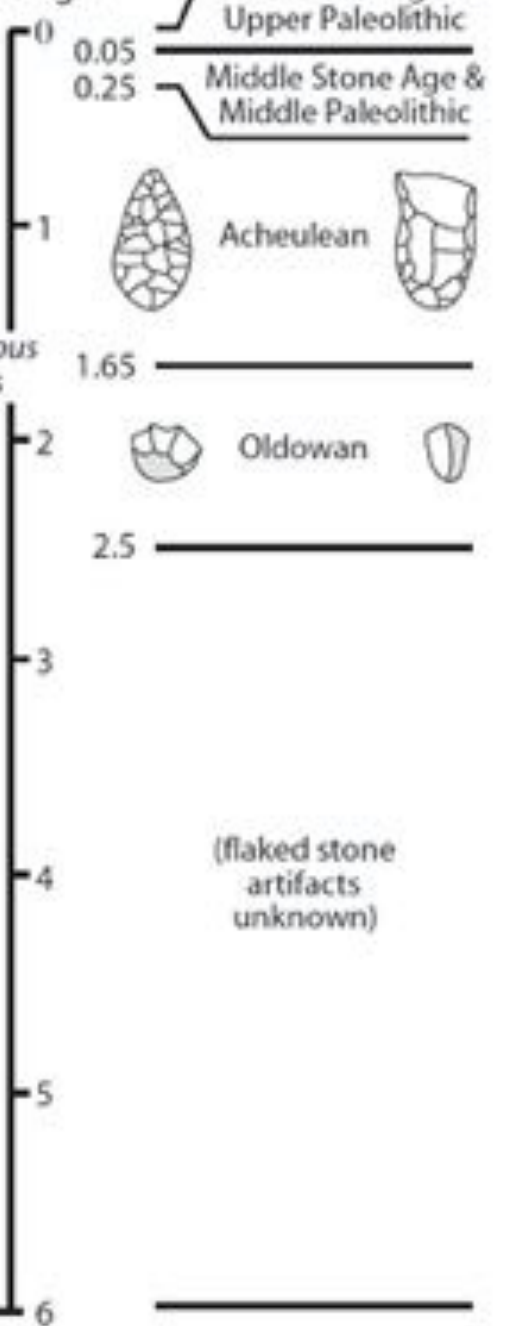
Paleo-sequence

- *Homo sapiens* descended from *heidelbergensis* about 300-200,000 years ago in Africa
- *Homo neanderthalensis* split about 400,000 years ago in Europe
- The two overlapped when sapiens entered Europe about 50,000 years ago
- Meanwhile sapiens shows up in Australia about 65,000 years ago with subsequent cave paintings.
- Sapiens and neanderthalensis interbred and apparently the latter learned culture from the former just before their extinction 40,000 years ago.

Millions of years ago



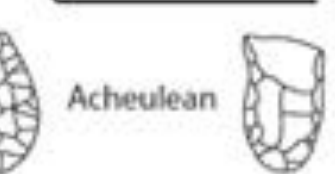
Millions of years ago



Artifact Traditions

Later Stone Age & Upper Paleolithic

Middle Stone Age & Middle Paleolithic

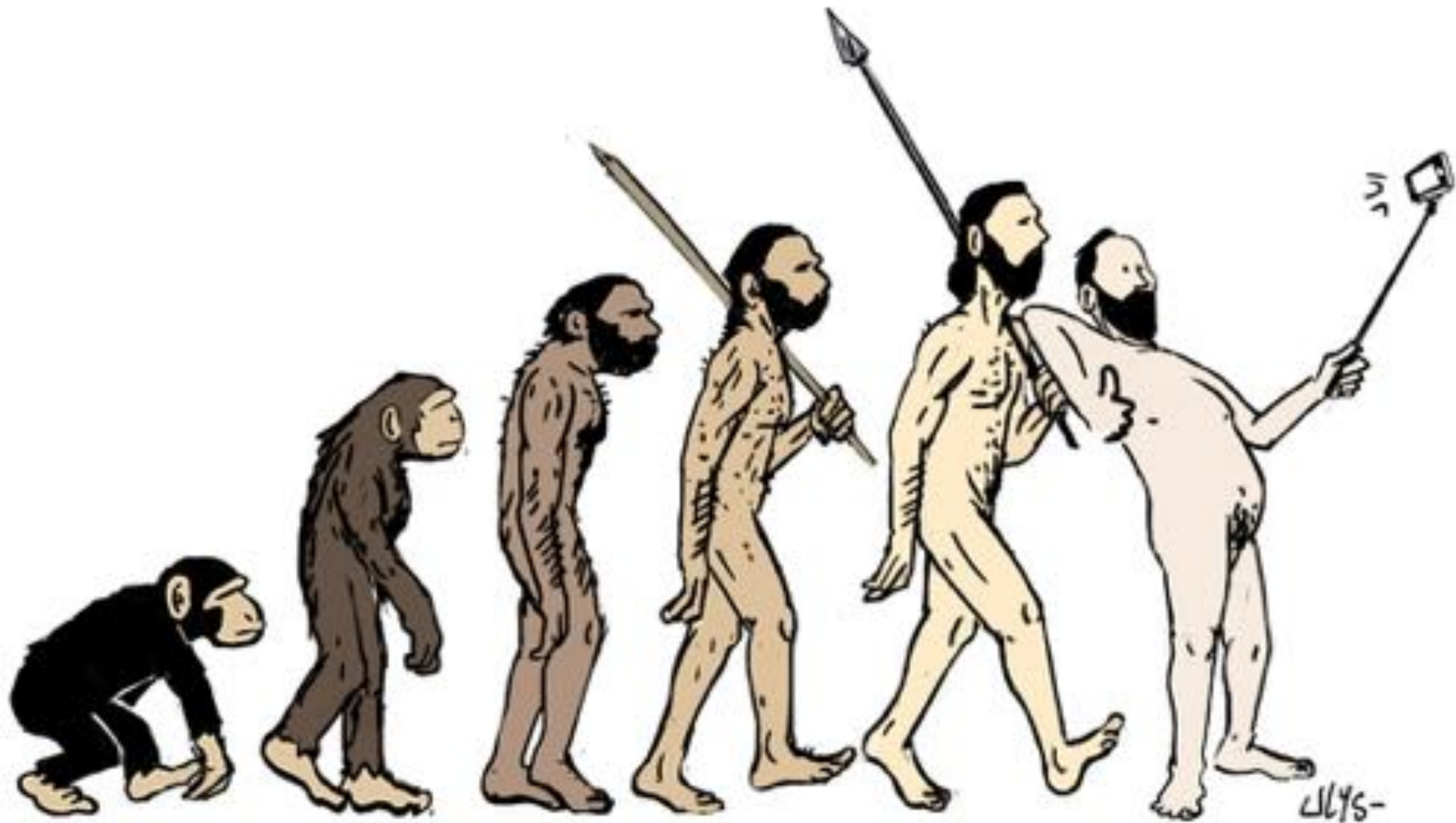


Acheulean



Oldowan

(flaked stone artifacts unknown)



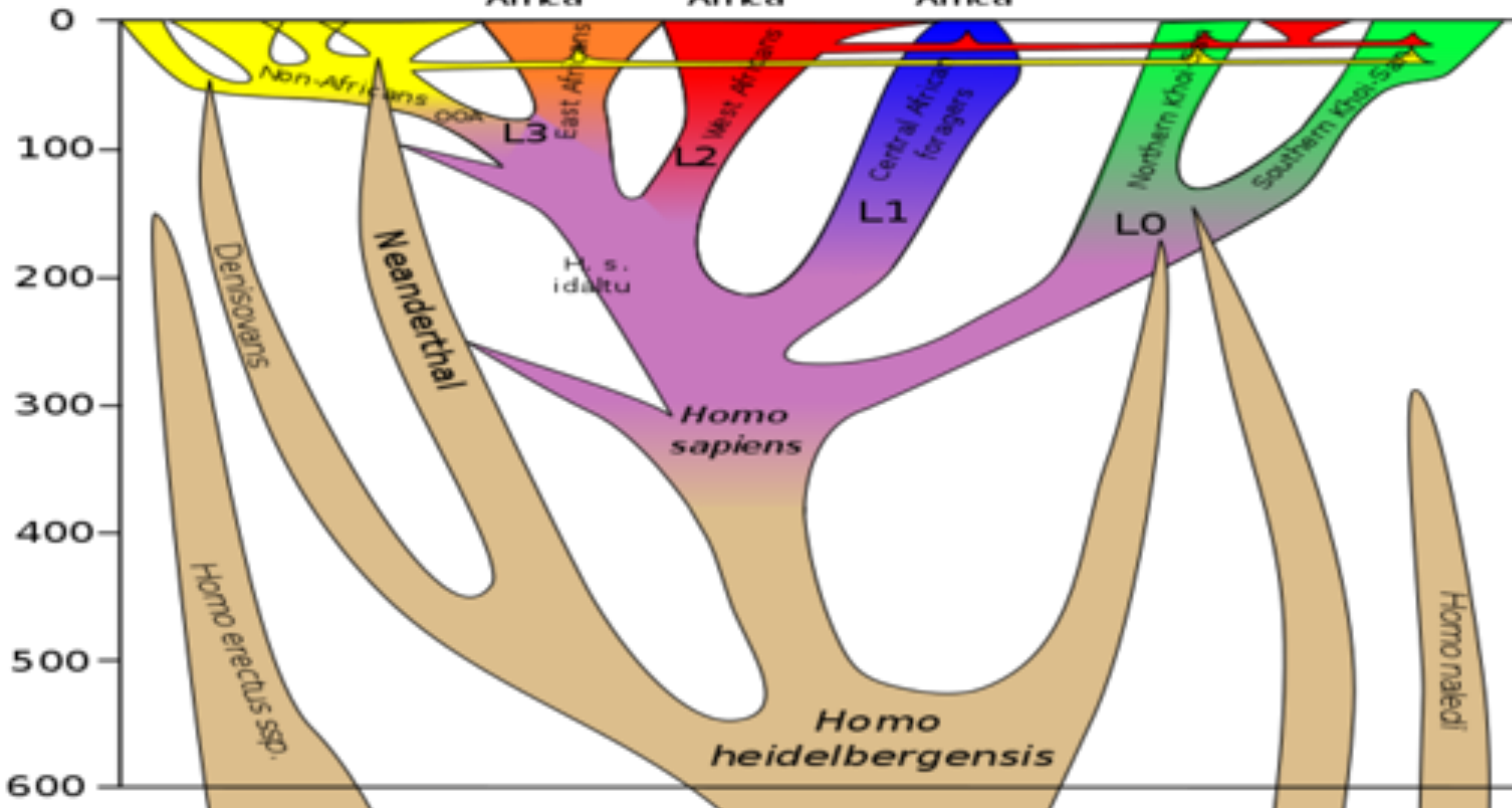
Eurasia

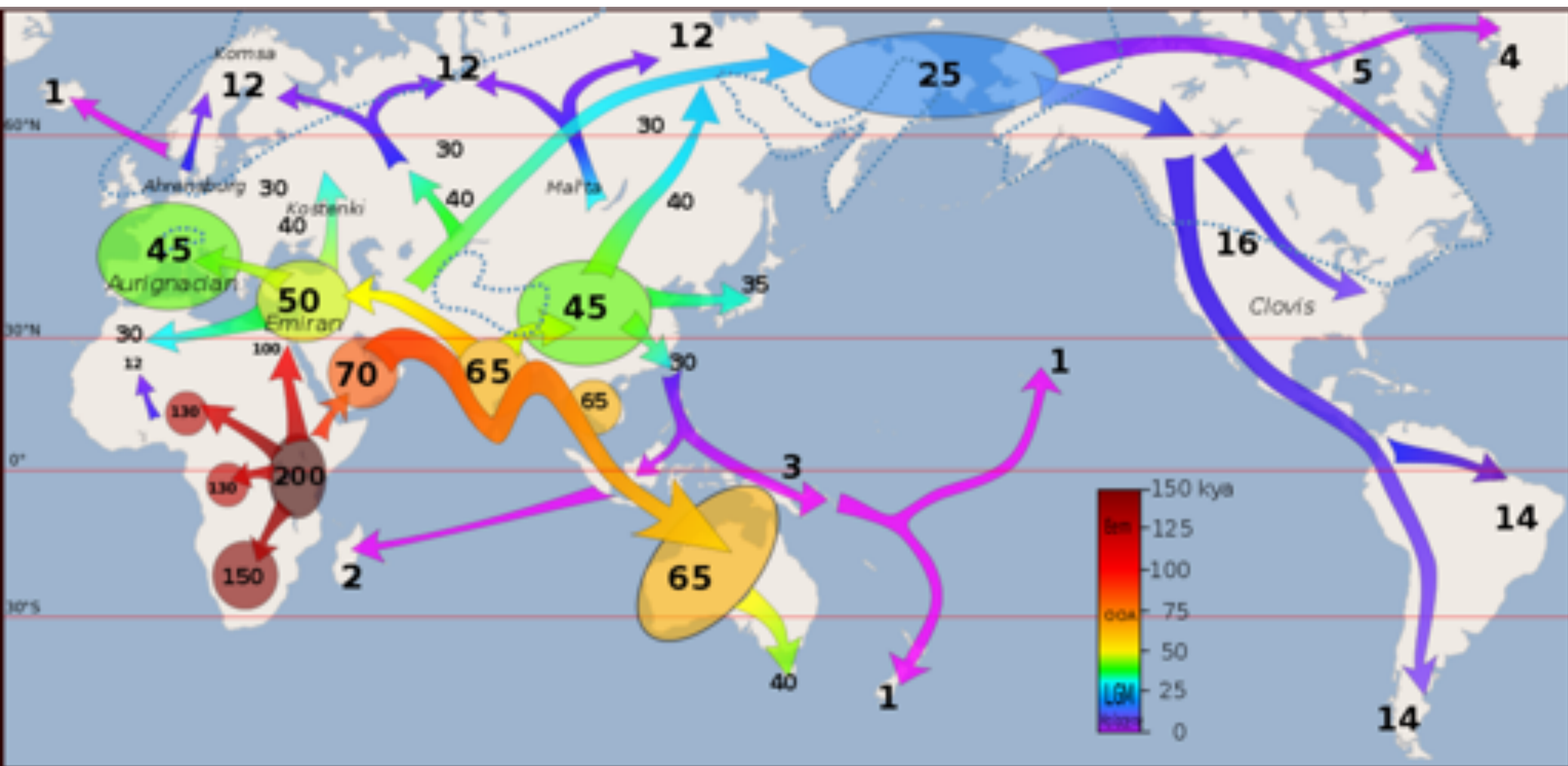
Eastern Africa

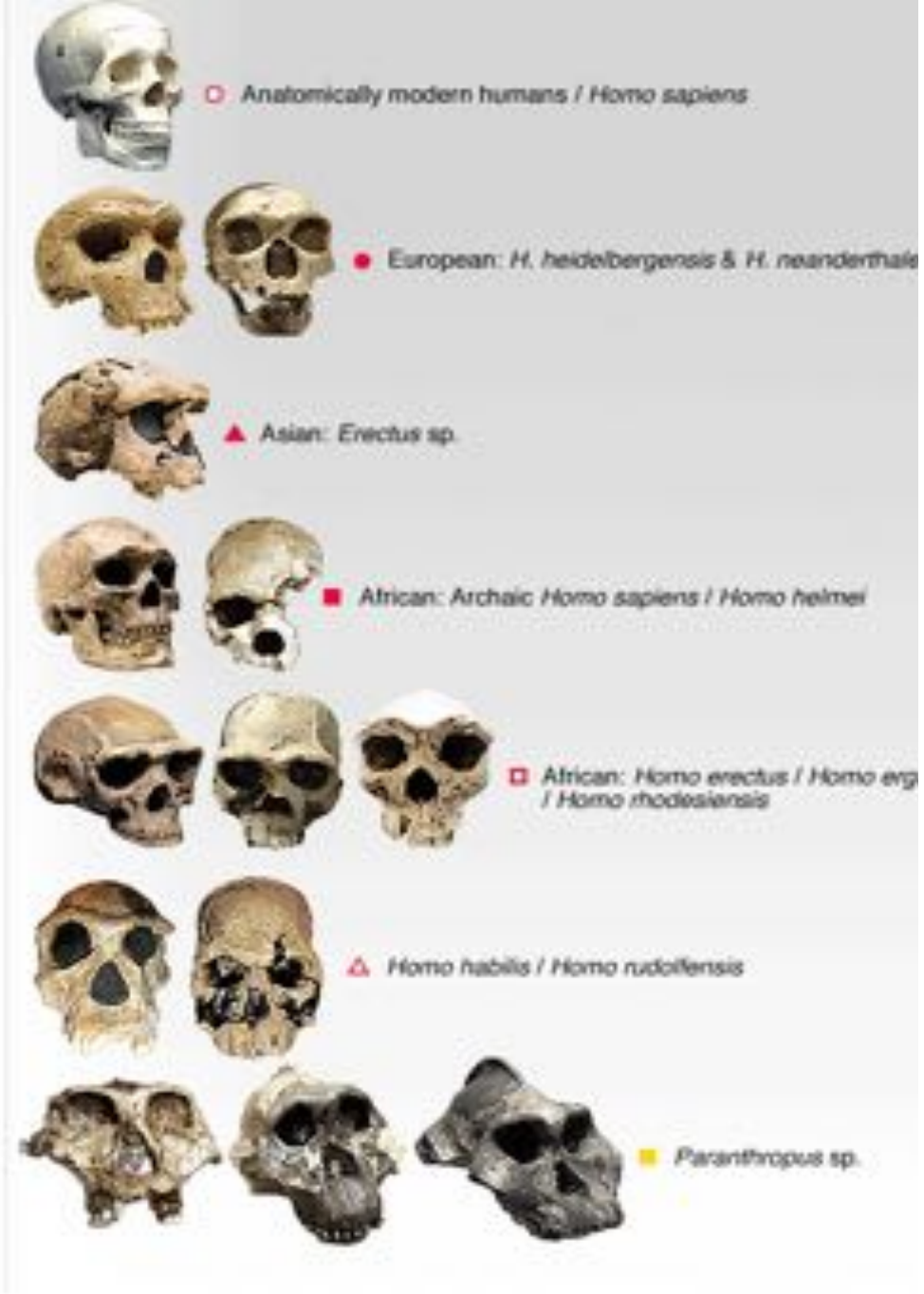
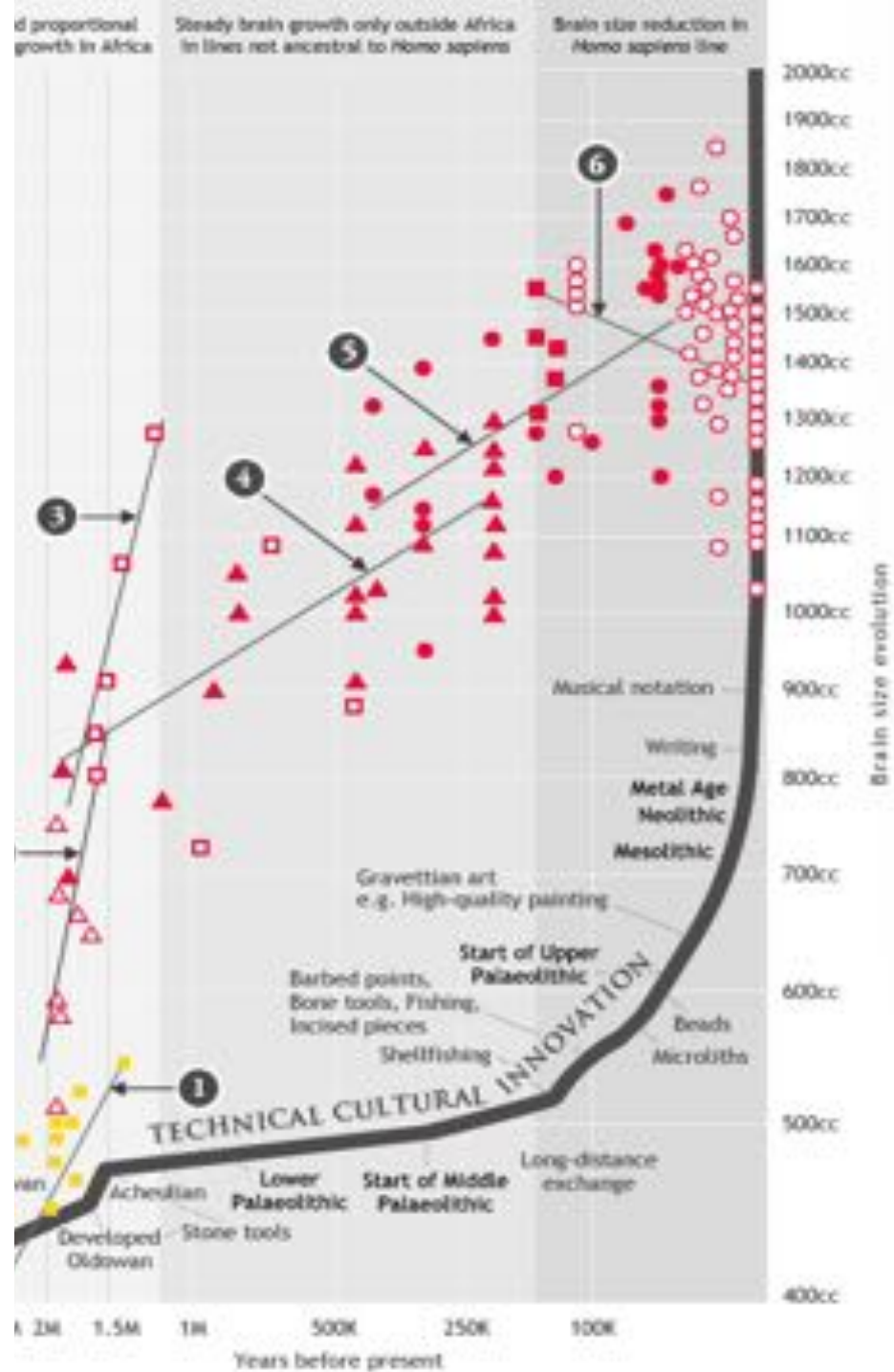
Western Africa

Central Africa

Southern Africa







LARGE NUMBER OF INVESTIGATIONS GOING ON NOW

In his 2021 book, The World Before Us, Tom Higham discusses an amazing number of current explorations that continue to inform us about our ancestors. One example is a DNA sample that shows an offspring of Denesovian and Neanderthal parents!

One can only imagine what will be found in the next decade.

The Genetic Record

- Study of our DNA, its relationship with earlier mammals and even earlier living things shows that the genus *Homo Sapiens* is a product of evolution (humans and cauliflowers share about 45% of DNA!).
- Humans and Chimpanzees share almost all genetic material.
- Our genes and their varying expressions through what are called **Alleles** point out details in this evolution

Dobzhansky emphasizes the unlikelihood of only a single human individual or couple evolving from a prehuman population:

- “Since species differ in **numerous genes**, a new species cannot arise by mutation in a single individual, born on a certain date in a certain place. Species arise gradually by the **accumulation of gene differences**, ultimately by the summation of many mutational steps which may have **taken place in different geographical locations and at different times**. And species arise not as single individuals but as diverging populations, breeding communities and races which do not reside at a geometric point but **occupy more or less extensive territories.**”

Theodosius Dobzhansky, *Mankind Evolving* (New Haven: Yale, 1962), 183.

Dennis Venema's Summary

- *Adam and the Genome: reading Scripture after Genetic Science; 2017*
Dennis R. Venema and Scot McKnight
- He points to four different and independent ways of showing that the human population was never less than 6,000-10,000.
- The four ways can be divided into two categories:
 - Large genetic diversity—different Alleles.
 - Frequency of “gene crossover” switching

Genetic Diversity

- The present large diversity in individual genes (mostly due to random mutations) seen in different **alleles** requires a very long time to have occurred—perhaps millions of years.
- A single couple could have had only a minute amount of this diversity and so there isn't enough time for their progeny to have produced today's observed diversity
- Two different ways of looking at this (given a constant mutation rate) suggest a small human population of about 6,000-10,000 individuals some 75,000 years ago

Gene Crossover Switching

- At egg fertilization genes are combined by the union of two strings of DNA
- Rarely but constantly some genetic information “crosses over” between two sets of genes (strings of DNA).
- The closer the genes are in the DNA string, the less likely a cross-over will occur.
- Examination of close genes that have not seen cross-over indicates they are very very old. Again pointing to a small population some 75,000 years ago of 6,000-10,000—an independent confirmation

Diverging species is Similar to Diversion of Languages

- Due primarily to **population isolation**, new words and different pronunciations creep in.
- When enough of these have done so, the “new” language is very different from its progenitor.
- New languages don’t start off different, they **evolve in populations**.



WELL, WE
HAD A PRETTY
GOOD RUN.

POPE:
EVOLUTION
IS REAL

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What Science won't allow

- As stated above, science can't tell us what is in detail, but it can rule out some alternatives.
- And so science has told us what we can no longer hold:
 -
- *Adam and Eve, strictly understood, **did not exist** and therefore we need look elsewhere for the **important messages** from Genesis*

What to Think?

- In view of this evidence it hard to find a place for a couple such as that described in Genesis.
- There seem two alternatives:
 1. See Genesis as making important points but not actual history,
i.e. Adam and Eve as described didn't really exist
 2. Find some way to place A&E in the actual development of humans



Proposed Alternatives

- A variety, nearly all, place A&E within a larger population:
 - A&E were **two among many**, but only they received spiritual souls.
Here we have a problem with later interbreeding and with inability to reach all humans around the world
 - A&E changed the way all humans think about God and each of them then received a spiritual soul until all had them.
similar problems—interbreeding and communication.
 - Swamidass's novel solution—the Geneological A&E
Several similar problems

Haarsma's Five Alternatives

- Adam and Eve as:
 1. Recent ancestors
 2. Recent Representatives
 3. Pair of Ancient Ancestors
 4. Group of Ancient Ancestors
 5. Group of Ancient Representatives



Critique of Proposed Alternative Interpretations

- All of these seem strained.
- Nearly all require discarding some aspects of Genesis.
- They have to interpret a **place and time** for A&E not quite as described in Genesis
- They run into difficulties especially about how this couple would have **interacted and influenced the rest of H. sapiens** spread so far apart.
- A big problem is how and when **all humans** could have gotten spiritual souls.
- And what about Neanderthals who: “were capable of symbolic thought and representation. The cave paintings in Spain have now been dated to 64,800 years ago—before *Homo sapiens* had moved into Europe. “

Swamidass' Solution

His Reasoning

- The biblical story of sin and redemption makes little sense without Adam as first human being ([Rom. 5:12–21](#); [1 Cor. 15:21–22](#)).
- The unity of the human race is rooted in Adam; although we sinned in the first Adam, God's Son came down from heaven, in human flesh, as the last Adam—and therefore, astonishingly, Jesus is Savior of *all* people ([John 4:42](#); [1 Tim. 4:10](#)).
- The biblical testimony supporting traditional monogenesis isn't easily set aside.

Swamidass' connection of all people to one specially created couple

- A novel way is separating ideas of A&E into **historical and genealogical** aspects.
- Apparently genealogical A&E allows them to appear only 6,000 years ago and thus all humans down to Christ have them as ancestors (although all humans also have other direct ancestors).
- Even though there were thousands of other *Homo Sapiens* at the time, this couple was specially created with special spiritual attributes and we are all its descendants subject to their sin.
- Perhaps Biggest objection is how to spread genealogy to humans in distant areas such as Australia, southern Africa, and the western hemisphere.

Mild-mannered Man and Ill-fitting Suit Story

- Don't the Suit fit him well?

What Alternatives We Need to Throw Out

In attempting to fit A&E into the scientifically found chronology, several descriptions in Genesis need to be disbelieved:

Chronology: Genesis is clear that A&E could not exist much earlier than about 6,000 years ago. This from its genealogy, which requires that early people lived to an age of 900 years or so and from its saying Cain and Able were farmers (no farther back than 10,000 yrs.).

Putting them farther back—60,000 to 300,000 years can't be done if we adhere strictly to Genesis.

Naming of animals—We see recognizable animals in cave paintings back to 50,000 years which indicates they had names.

Chauvet Cave
36,000 yrs
ago



Stories in Genesis we probably no longer believe

- The 900 year or so ages of early humans
- That bad angels bred with humans to produce giants
- That building of the tower of Babel really was the source of languages
- That Noah could have put all of the Earth's animals into the Arc
- That there is enough water to flood the entire earth
- The Garden of Eden which needed an angel to keep people out
- A tree whose fruit could give you the knowledge of good and evil
- Where that garden was--given that humans arose in Africa
- That women suddenly had pain in childbirth
- That snakes didn't crawl on the ground till then

Example: What's Up with that Serpent?

- How does a serpent talk? Must be miraculous
- Why does genesis pick a serpent? People avoid them, but they are marvelous creatures.
- Cursing the serpent to crawl on the ground? We have 95 million year old fossils of them crawling on the ground

Was the serpent the devil? Genesis does not say.

Clearly allegorical



Question & Answer

- If we have ceased to believe that so many of the Genesis stories are precisely true, but rather myths to teach, why hold so strongly to the A&E creation story?
- If not for the Christianity's attempt to explain humans' tendency to sin and the existence of evil in the world, few of us would probably believe that A&E actually existed in the strict sense.

My Solution

- There might be an analogy with very large computers a decade ago.
- Developed to solve one or two huge problems, other users didn't recognize their power and kept using them for smaller problems.
- Lab's like LANL showed others that these huge machines could solve much bigger problems.
- **Similarly**, Homo sapiens (and Neanderthals) developed huge brains capable of very complex thinking, but early humans didn't recognize that and kept acting like their ancestors.
- God walked in a "garden" with a couple and essentially told them: "You can do much more with the brain I gave **you including knowing good and evil.**"
- It didn't take long for this information to spread through the entire human race. Thus the observed **great leap in culture** forward about 50,000 yrs. ago.

Remaining Questions

- This evolutionary solution to the origins of humans encounters one large question:
- When did our ancestors become spiritual?
- When did they acquire a soul, which is commonly believed to be our spiritual part and in no way material?

A Recent Theological Perspective

- From this vantage point, one can immediately see that an *Adam* emerged in history at that moment when a human being was first capable of forming, however dimly, the thought “God.”
- **As Cardinal Ratzinger wrote**, “The first ‘thou’ that—however stammering—was said by human lips to God **marks the moment in which spirit arose in the world**. Here the Rubicon of anthropogenesis was crossed.”
- If this is true, then the theory of evolution neither invalidates nor corroborates faith. But, as Ratzinger acknowledges, “It does challenge faith to understand itself more profoundly and thus to help man to understand himself and to become increasingly what he is: the being who is supposed to say ‘thou’ to God in eternity”.

Science's Happy Gift To Revelation

- Science gives us a slightly but importantly different view of ourselves and our condition
- We apparently are not fallen due to a single sin of first parents.
- We are the result of the Creator's way of producing the "People of God" which makes us still imperfectly adapted to responding to the transcendent, but able to improve with the saving grace of Christ.

Conclusion

- Attempts to have Genesis and Scientific findings agree, run into a number of contradictions and problems most requiring disbelief in part of the Genesis account
- Thus, we are still faced with a conflict between what science says and Genesis.
- Science has given us a beautiful view of who we are—imperfect, not fallen.



Suggested Reading

1. *Origins: Christian perspectives on creation, evolution, and intelligent design-Revised Edition; 2011*

Deborah B. Haarsma & Loren D. Haarsma

2. *The World Before Us: How Science is Revealing a New Story of Our Human Origins,*
Tom Higham,

3. *Adam and the Genome: reading Scripture after Genetic Science; 2017*

Dennis R. Venema and Scot McKnight

4. *Saving Adam: Evolution and Original Sin*

John Farrell, [Commonweal](#), July 6

5. 2018 <https://www.thegospelcoalition.org/reviews/genealogical-adam-eve-swamidass/>

Questions

- Should we include scientific findings in our understanding of human genesis?
- Are there ways around the conclusions from scientific findings?
- Can we continue to cherish the Genesis account without believing it is historically accurate but rather a way of teaching?
- Does the scientific account make life a little less beautiful and full of meaning?

Humans inside the Garden and outside it

- As Adam and Eve's descendants mix with those outside the Garden, their fallen nature infects all of mankind.
- All of the earth is inhabited by people who have Adam and Eve in their genealogical history,
- **The genealogical hypothesis itself is still dissonant with the biblical Adam and Eve.**
- Swamidass defines all those outside the garden as *biologically* but not *textually* human.
- **How could A&E's progeny have reached Micronesia/Australia, the Western Hemisphere?**

A Recent Study shows how humans evolved

- The origin of *Homo sapiens* remains a matter of debate.
- The extent and geographic patterning of morphological diversity among African hominins around 130,000 years ago is largely unknown, thus precluding the definition of boundaries of variability in early *H. sapiens* and the interpretation of individual fossils.
- But, using a **phylogenetic modelling method** to predict possible morphologies of a **last common ancestor** of all modern humans combined with the available fossils, ***H. sapiens* appears to have originated from the coalescence of South and, possibly, East-African source populations**, while North-African fossils may represent a population which introgressed into Neanderthals some 150,000 years ago.
 - Deciphering African late middle Pleistocene hominin diversity and the origin of our species, Nature Communications,
 - https://www.academia.edu/40938580/Deciphering_African_late_middle_Pleistocene_hominin_diversity_and_the_origin_of_our_species?email_work_card=thumbnail
 - Phylogenetic modelling explained https://en.wikipedia.org/wiki/Phylogenetic_comparative_methods