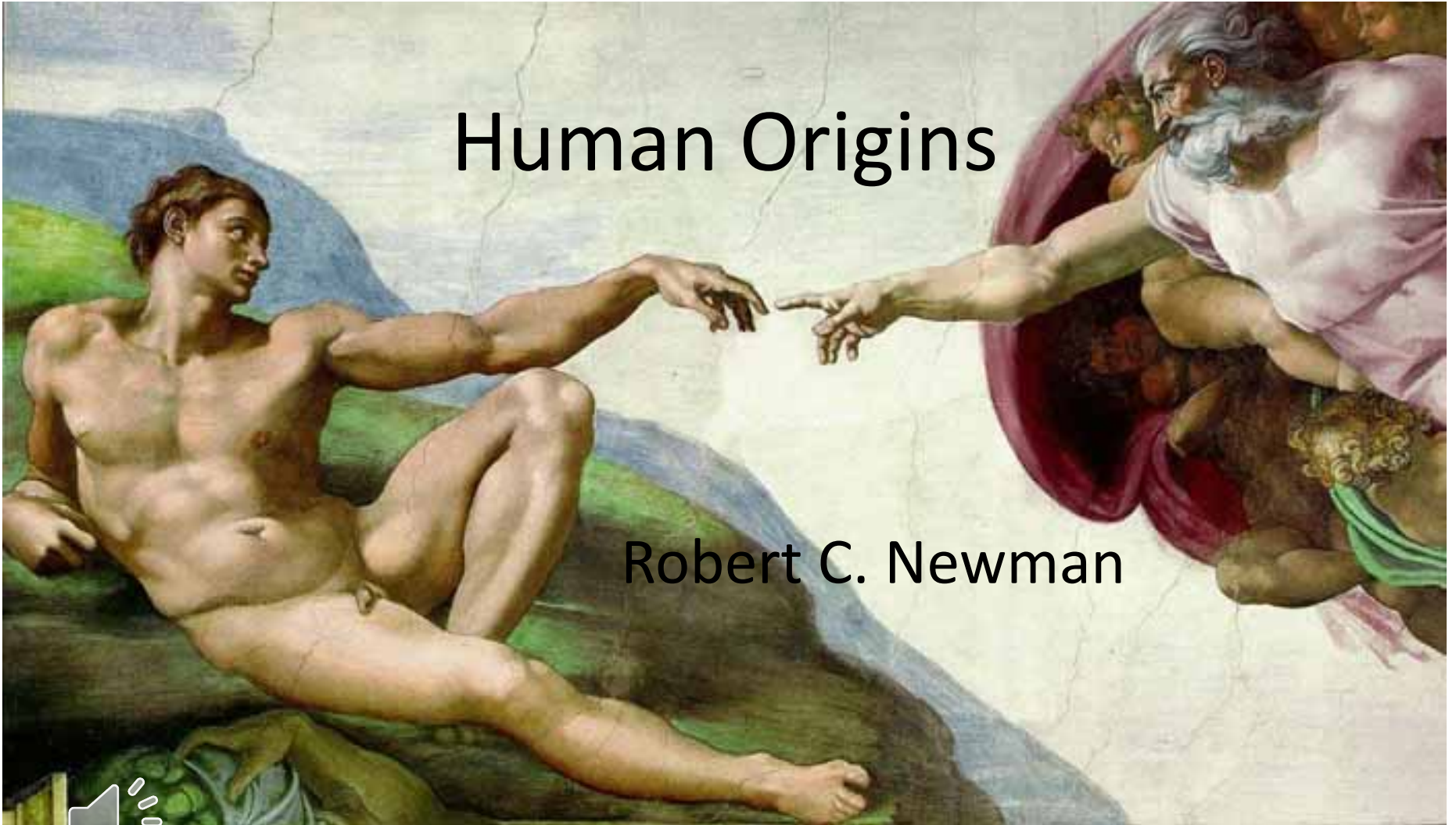


Human Origins

Robert C. Newman



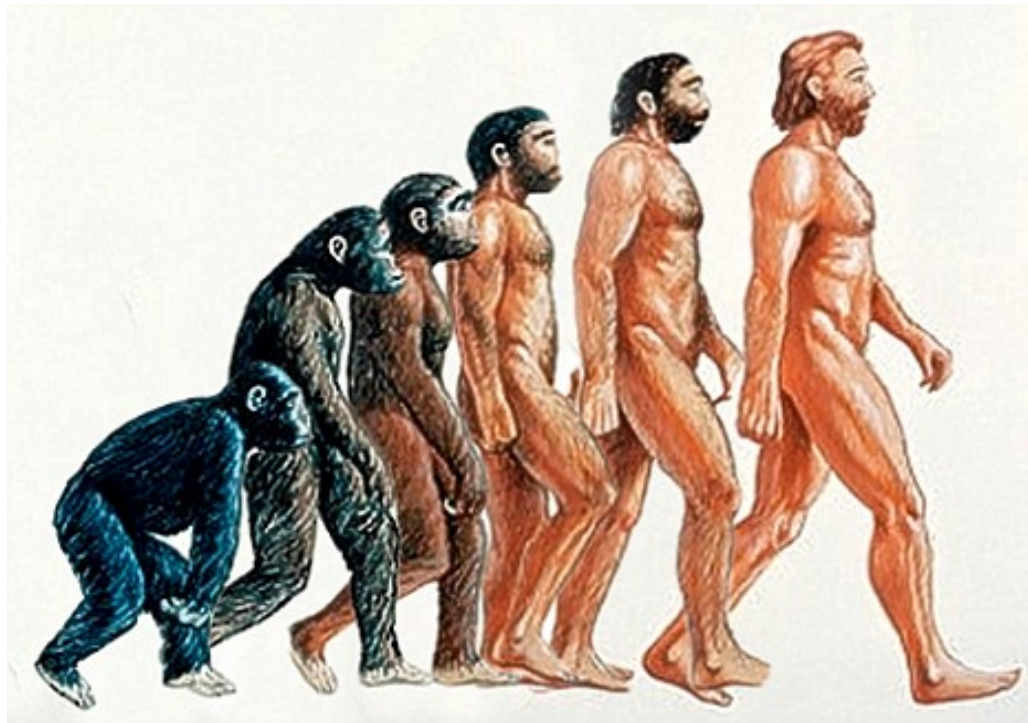
The Biblical Account

- In Genesis one, we are told that God made man, both male & female, in His own image, without any further detail.
- In Genesis two, we are told in addition that God made the human male first (from the dust of the earth), and made the female later from his side.
- This pair, though created morally good, rebelled & brought disaster to themselves & their offspring.

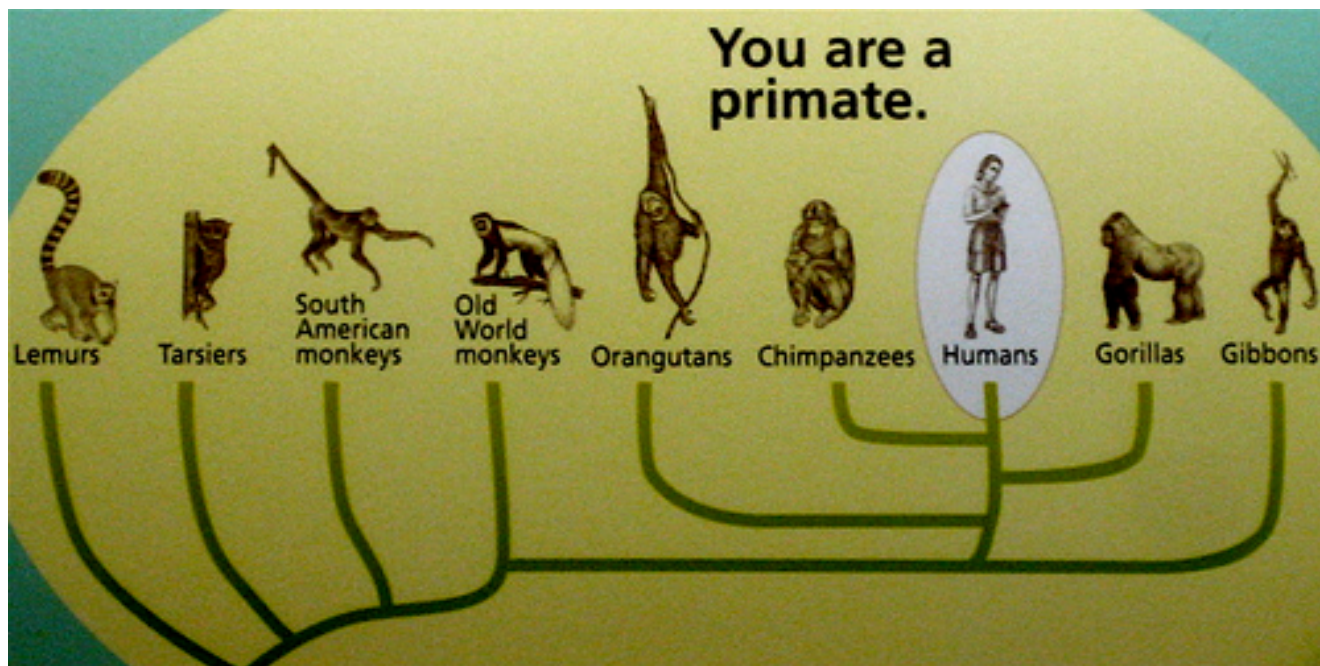
The Evolutionary Account

- The typical evolutionary picture of human origins is that mankind developed gradually from a whole population of apes over the course of millions of years.
- Thus there never was an original pair, so that the fall of humans (if such ever happened) must have been something quite different.
- This account dominates education & the media, liberal Christendom, and is beginning to have influence in evangelical circles.

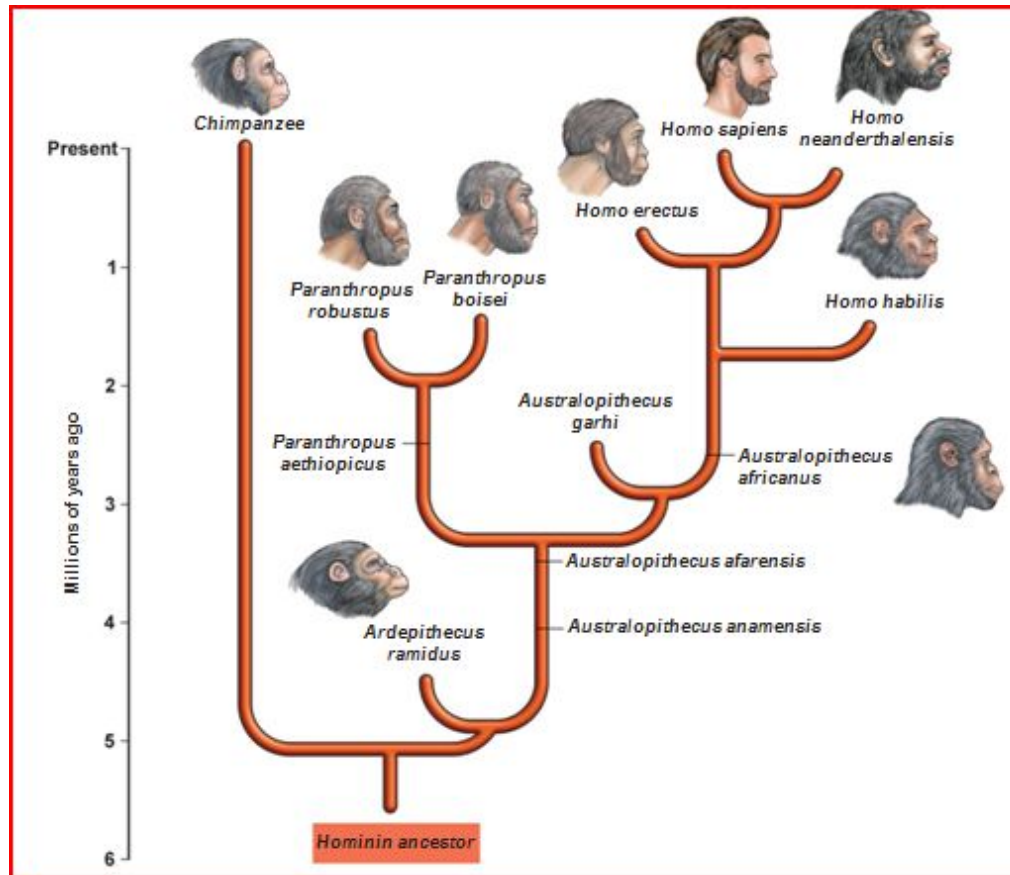
The Typical Presentation



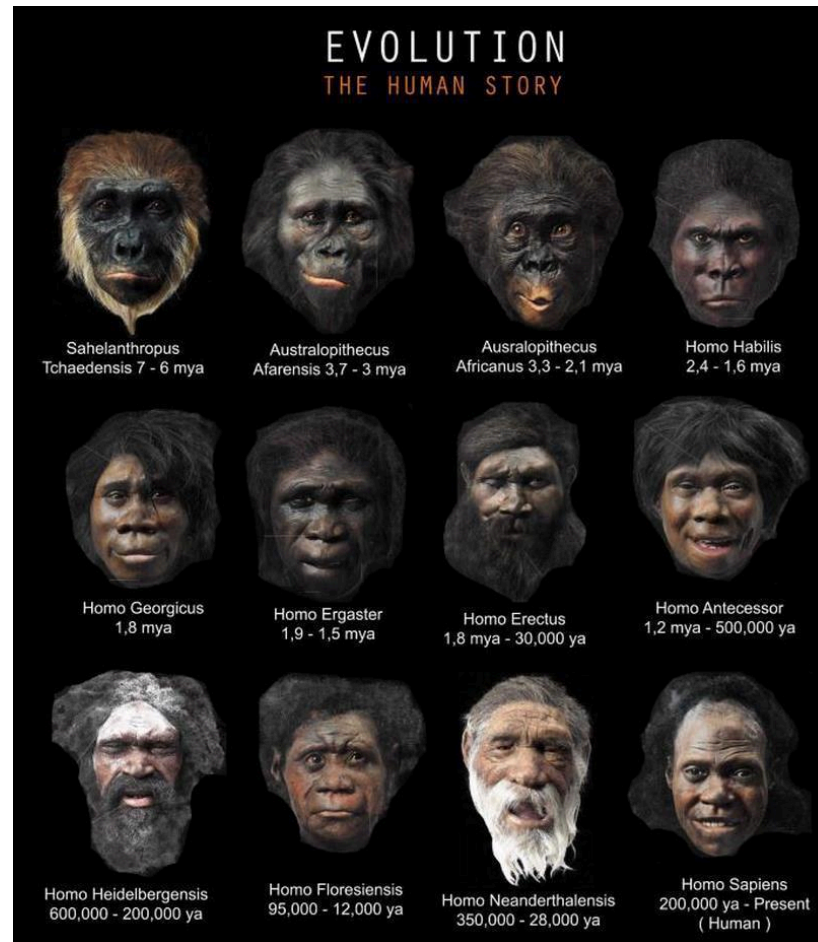
Relation of Humans to Primates



Relation to Other Hominins

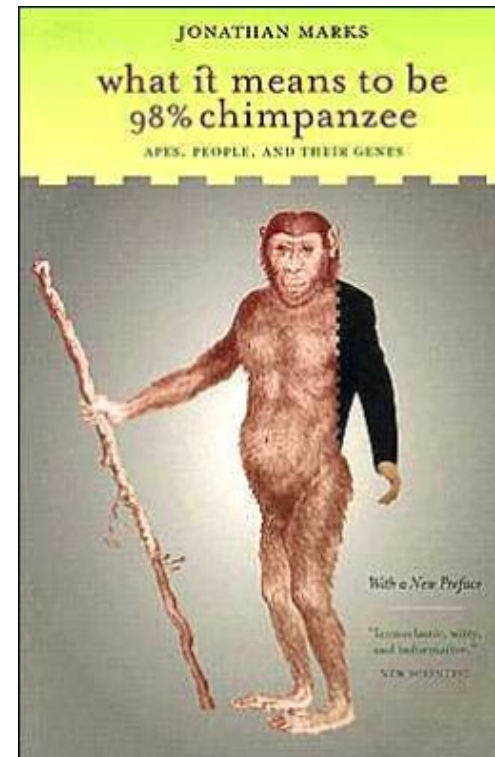


Artist's Reconstructions



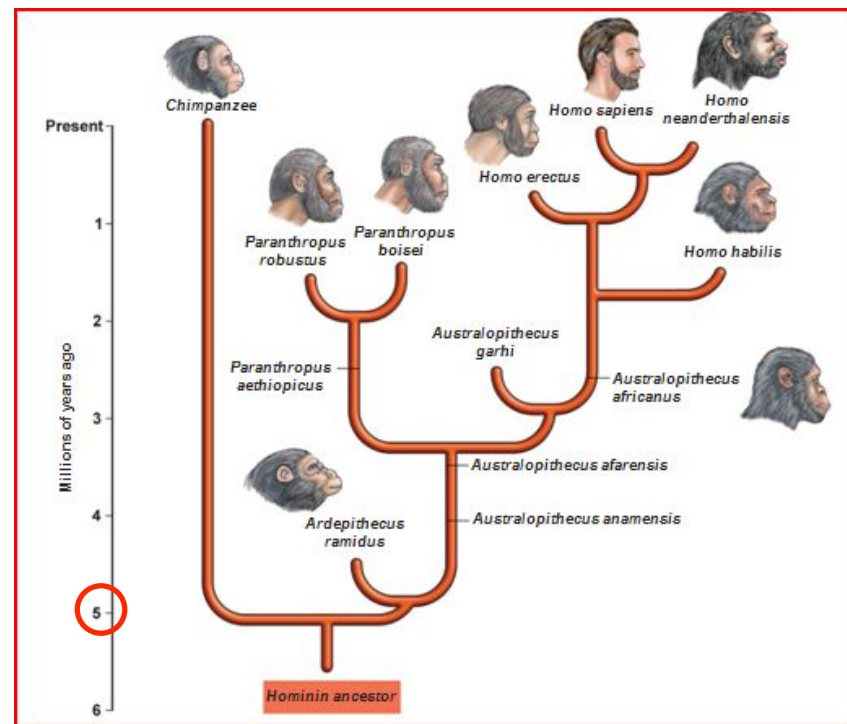
DNA: the Human Genome

- The human genome has recently been decoded, though it is not yet fully understood.
- It contains about 3 billion base-pairs.
- It is claimed to be 98% the same as that of the chimpanzee.



Our Response

- So what can we say? Is it evolution after all?
- Let's start with the DNA.
- Let's also suppose the 98% figure is correct.
- Then we must have 2% change in 5 million years to get from chimp to humans.



DNA Calculation

- That would be 1% change in each branch, the human and the chimp.
- One percent of 3 billion base-pairs is 30 million base-pairs.
- Divided by 5 million years, is 6 b-p per year.
- That means 6 b-p in the genome leading to humans have to be changed each year, and all these incorporated into the whole population.

DNA Calculation

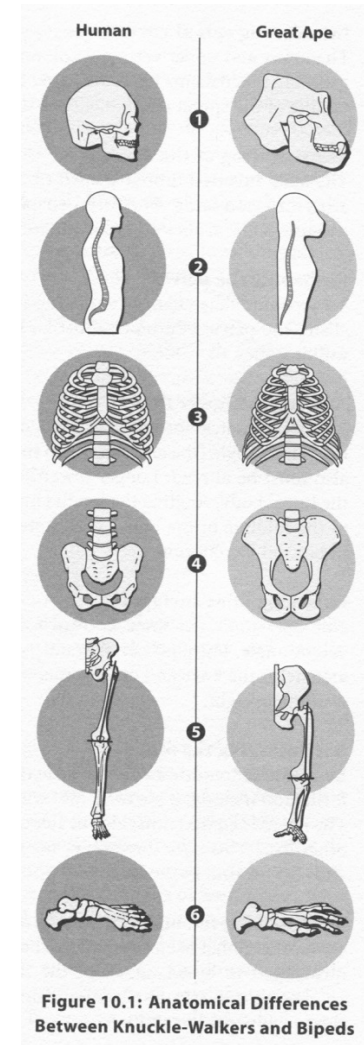
- The effective population size is about 10 thousand, the mutation rate is 10^{-8} per nucleotide per generation, the generation time is 5 to 10 years.
- So in 5 million years, we get about 3×10^{11} mutations, which sounds like enough!
- But that was scattered thru the whole population of 10 thousand individuals in each of one million generations.

DNA Calculation

- So how many of these mutations survive & spread to the whole population & thus characterize the final population of humans?
- To survive & spread, mutations typically need to be beneficial.
- If they are harmful, they tend to be eliminated.
- If they are neutral, they only spread by a random walk, a very slow process!

Distinctive Anatomical Features Distinguishing Ape & Human

- Bramble & Lieberman count 16 features that appear first in the Homo lineage.
- The picture at right illustrates six of these:
 - Relocating foramen magnum
 - Introducing spinal curvature
 - Restructuring the rib cage
 - Reshaping the pelvis
 - Altering the lower limbs
 - Restructuring the foot
- Each of these features surely required multiple mutations.



Getting Coordinated Changes

- Gauger & Axe have shown that to get 7 coordinated mutations even in a bacterial population would take 10^{27} years.
- Bacteria have populations of billions.
- They reproduce with thousands of generations per year.
- So there is no way these changes will occur in a few million years!

Do We Have 98% Similarity?

- This number is somewhat like the claim that all of Shakespeare is in the Dictionary. It ignores location & syntax.
- When one considers the DNA in chimps but not humans (& vice versa), the number drops to about 70% similarity.
- This became apparent when the whole chimp genome was deciphered.

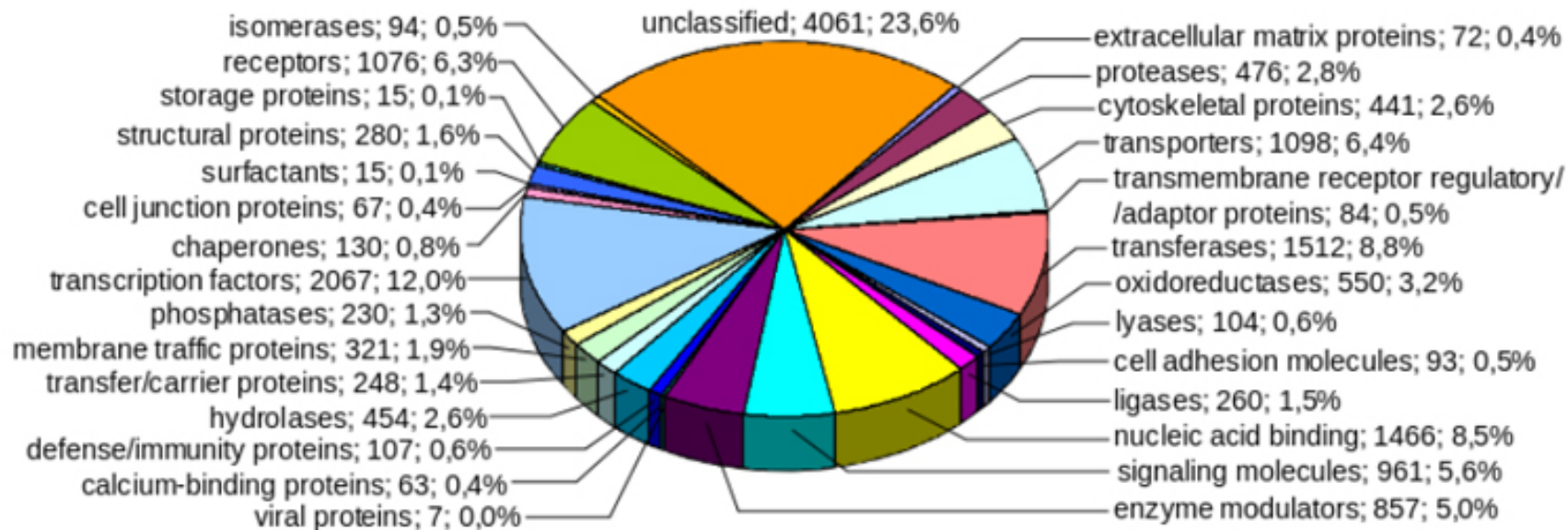
What About Junk DNA?

- The presence of large amounts of DNA in the human genome which doesn't code for proteins was initially seen as junk, evidence that humans (& life itself) were not designed but the result of random changes.
- Both Francis Collins & Kenneth Miller make a great deal of this, claiming that God (who exists) did not design humans, but let chance do so.
- Richard Dawkins agrees, tho he leaves out God.

Is It Really Junk?

- Already by 2002, Richard Sternberg noted there was considerable evidence that 'junk DNA' was functioning in the cell in ways other than coding for proteins.
- These functions include numerous control activities of various sorts.
- The ENCODE project and more recent work suggest that most DNA is used in one way or another.

Junk DNA?



A Second Genetic Code

- It has been known for a long time that the cell often processes its DNA by cutting it into pieces which are then spliced together in various ways before being used.
- It now appears that there is some sort of splicing code which gives the cell great diversity of function.
- These codes differ substantially between species. How did they get there?

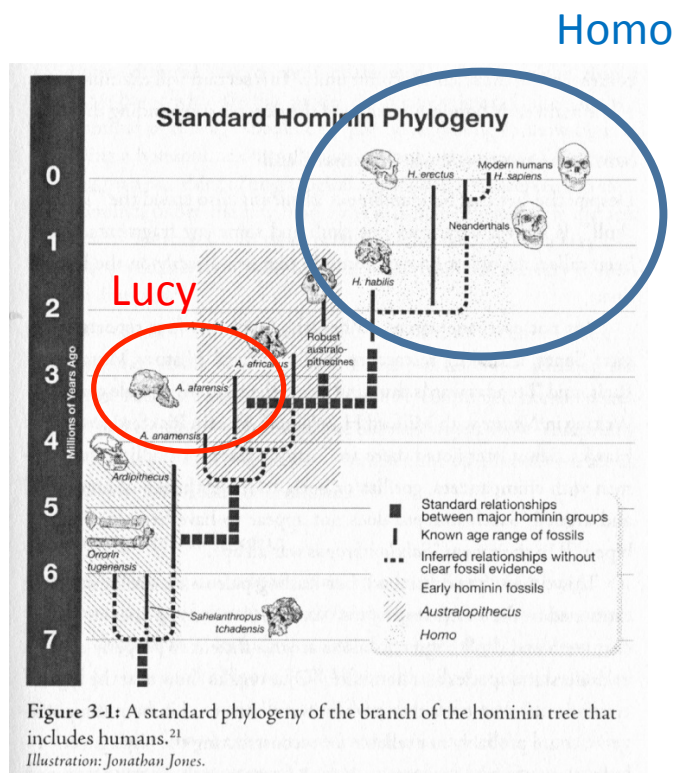
Some Conclusions

- Life in general (& humans in particular) seem to be very cleverly designed, even without taking the intellectual & spiritual differences between humans & apes into account.
- It now appears that the development of life over the history of the earth looks more like what we are learning to do in genetic engineering than it does like unguided processes.

What About Adam?

- One problem in fitting the evidence from nature with that of Scripture is the question: Where does Adam fit into the chronology of the fossil record?
- Is Adam rather recent, as young-earth creationists and some old-earth creationists say?
- Is he further back, as other old-earth creationists suggest?

The Standard Scheme for Hominins



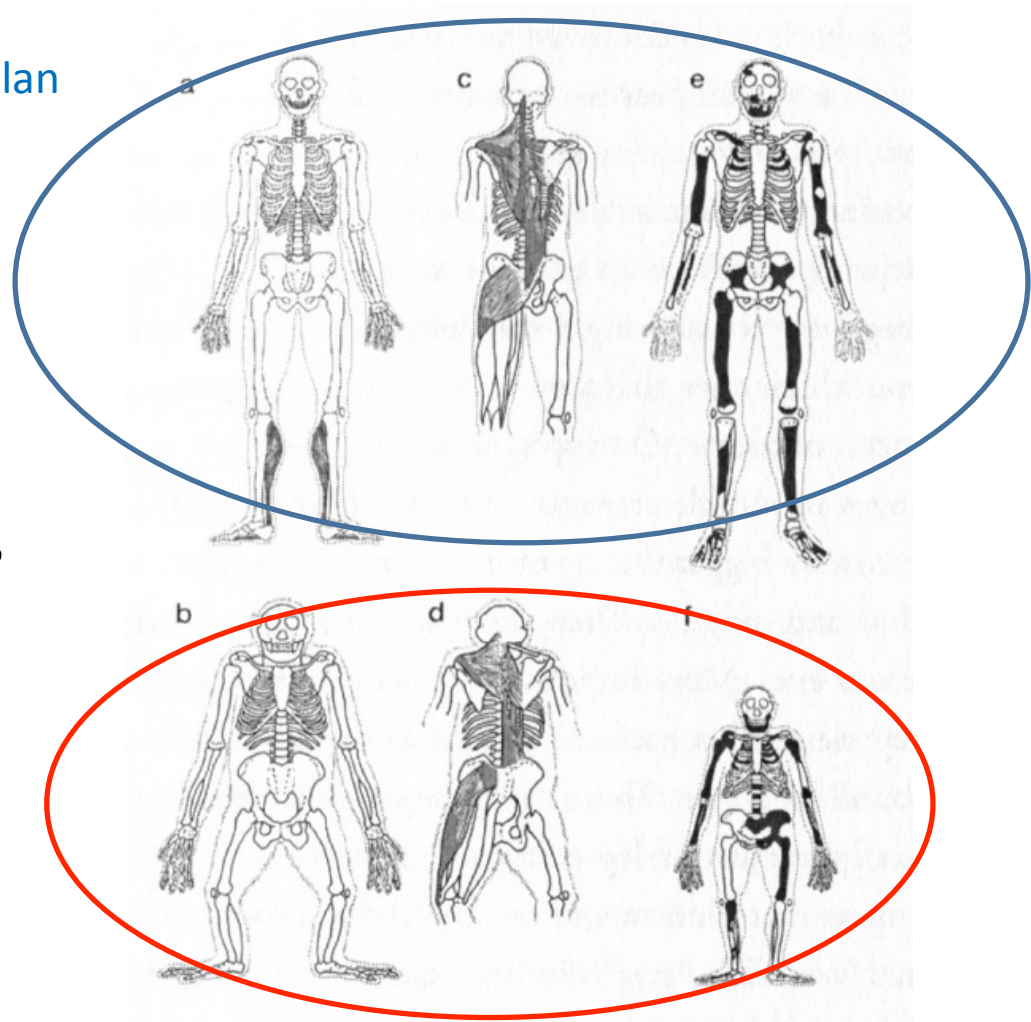
- One old-earth creationist I know puts Adam back at 5 million years, with the appearance of the Australopithecines.
- Another puts Adam up at about 5000 BC, just before the historical period begins.

Homo vs pre-Homo

Human-like body plan

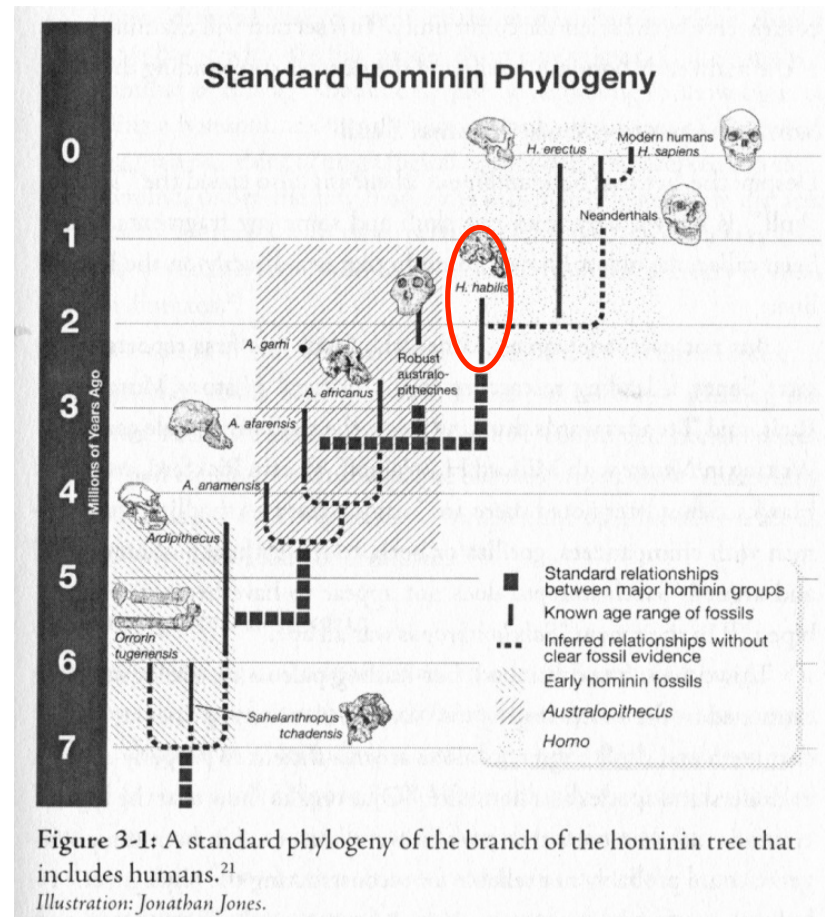
- a,c: human
- b,d: chimp
- e: Homo erectus
- f: Australopithecus afarensis (Lucy)

Ape-like body plan



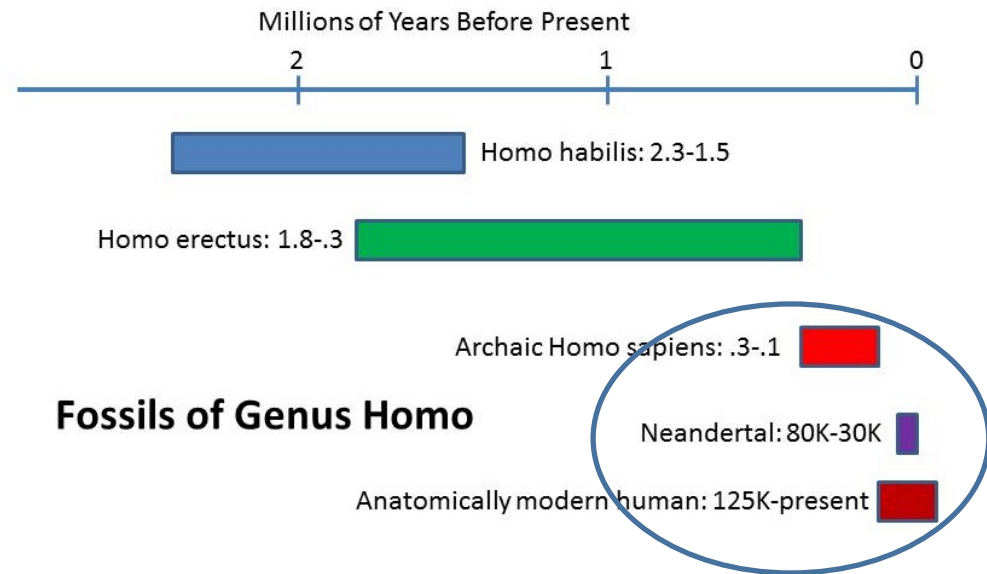
What About Adam?

- It seems to me Adam would have had a human-like body plan, rather than ape-like.
- But if Adam is *Homo habilis*, he could still go back 2.5 million years.
- This seems much too far back to be consistent with the Genesis genealogies.



What About Adam?

- The same problem faces *Homo erectus* @ some 2 million years ago.
- This leaves Neanderthal and *H. sapiens*, which range from 10 to 100+ thousand years.
- This is where most evangelicals place Adam.



More on Adam

- Within these parameters, there are two abrupt changes:
 - 130,000 yrs BP: the appearance of anatomically modern humans
 - 40,000 yrs BP: the explosion of culture
- Others have suggested even more recent dates, but these face the problem of pre-Adamite humans.

Pre-Adamites

- But in any case, we have something that looks rather human, that was able to construct tools and even used fire before these dates.
- On a genetic engineering view of the development of life, this would suggest that God (or his angels) made preparatory models before God put his image in humans.

Conclusions

- That's where we are at this point.
- It looks to me like God inserted an individual that looked rather like beings already living at that time, but that God put His image in this being and he became the progenitor of the human race.

For Further Reading

- John Bloom, "On Human Origins: A Survey," *Christian Scholar's Review* 27 (1997), 181-203.
- Ann Gauger, Douglas Axe & Casey Luskin, *Science & Human Origins* (Discovery Institute, 2012).
- Fazale Rana with Hugh Ross, *Who Was Adam?* (NavPress, 2005).

The End ... So Far

