

Report on a tree full of ancestors

[Law](#), [Evidence](#)



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In all three versions of the hominid family tree, there are a number of similarities. Each tree must have an evolutionary origin and purpose and whilst the origin does seem to differ from tree to tree, the purpose seems to maintain a constant: Homo Sapiens are always the end point on each tree. Presumably, this is because our species has evolved this far to date and appears to have stayed still for about 200, 000 years (Human Origins) whereas another site states 175, 000 years (Becoming Human), and another states 100, 000 years (PBS). This dispute is commonplace as we are unable to be very specific in dates, based on artefacts that have been found. However, one firm conclusion is that Homo Sapiens are the most recent evolutionary conclusion.

Previously to Homo Sapiens, another evolutionary stage common to all three trees is Homo Habilis. Although many scientists believe that the early fragments and fossils, assigned to Homo Habilis, were too fragmented to draw any real conclusions about their relationship or species composition (PBS), all three timelines are in agreement that Homo Habilis was a real

species and evolutionary stage who lived between 2.3 to 1.6 million years ago (PBS), 2.4 to 1.4 million years ago (Human Origins), and 2.5 to 1.6 million years ago (Becoming Human). Again, these dates are bound to differ but they all point to a similar time and phase of our evolutionary history.

A third common evolutionary phase, continuing to work backwards, is *Australopithecus Afarensis*. This early phase, who were more ape than man, lived between 3.85 and 2.95 million years ago (Human Origins), 3.9 to 2.9 million years ago (Becoming Human), and 3.6 to 2.9 million years ago (PBS). This phase has a classic artefact belonging to it as evidence: the ‘Lucy’ skeleton which has “ape-like proportions to the face and braincase, strong arms with curved fingers adapted to climbing trees, but small canine teeth” and who walked upright (Human Origins).

Sahelanthropus Tchadensis

In the Human Origins and Becoming Human timelines, the origin of our species is *Sahelanthropus Tchadensis* whereas on the PBS timeline, the origin of the species is *Orrorin Tugenensis*, which is classified as the second phase on the other two timelines. The PBS timeline claims that *Orrorin Tugenensis* is consistently dated at 6 million years old, Human Origins and Becoming Human date *Sahelanthropus Tchadensis* as being 7 to 6 million years ago. The discovery of the latter was in 2001, whereas *Orrorin Tugenensis* was discovered in 2000, and so it may just be an issue of which timeline is more complete and up to date.

Ardipithecus Kadabba

Again, the PBS timeline fails to mention a species which the other two do: Ardipithecus Kadabba is placed between Orrorin Tugensis and Ardipithecus Ramidus. The reason for this controversy is due to the original belief that Ardipithecus Ramidus was actually a sub-species of Ardipithecus Kadabba. However, developments which showed A. Kadabba to have more “ primitive teeth” meant that it was elevated to its status as its own species.

Homo Floresiensis

This species lived between 95, 000 to 17, 000 years ago (Human Origins) or 100, 000 to 12, 000 years ago (Becoming Human) and does not feature on the PBS timeline. This species lived alongside humans during its entire timespan (Human Origins) but was significantly smaller than Homo Sapiens, with a brain a “ third of the size of our own” and earned itself the nickname of “ hobbit.” This species was the most recent of our genus to die out (Human Origins) and seem to originate from a very small geographical area (the island of Flores in eastern Indonesia (Becoming Human)) and so is generally considered to be a lot less significant than its Homo Sapien counterparts.

Homo Rudolfensis

This species lived for a relatively short time, as far as we can tell: 1. 9 to 1. 8 million years ago (Human Origins) and 2. 5 to 1. 8 million years ago (Becoming Human). This species was originally considered to be a part of Homo Habilis but was eventually re-classified as its own species due to its

physical differences: *H. Rudolfensis* has a larger braincase, a longer face and larger molar and premolar teeth (Human Origins).

When scientists consider evolution and our evolutionary process, a large number of differing conclusions are usually drawn. As previously discussed in this essay, different evolutionary phases are classified as their own species by some and as sub-species by others. This debate is bound to continue all the time that time travel is not invented, owing to our inability to ever know the correct answers for total certainty.

The dates that are assigned to individual species of human evolution are only ever estimates because they are defined by DNA testing and slotting in to the correct spaces left by other species. Our knowledge is developing all of the time and as previously discussed, this means that our evolutionary map is also constantly evolving itself. This is demonstrated by species such as *Ardipithecus Kadabba* was considered to be a sub-species of *Ardipithecus Ramidus* but following the discovery of its more primitive teeth, it was upgraded to its own species altogether (Human Origins).

Another reason why scientists often dispute results is because of new discoveries being made frequently. As our modern technology improves, so will our ability to discover new theories and stages of evolution. The controversy comes when assessing whether a new discovery is a brand new species or a sub-species and how well it fits into the pre-existing evolutionary picture. A prime example of this is *Sahelanthropus Tchadensis* which, when discovered in 2001, was classified as being the earliest form of human evolution. It enabled scientists to discover the geographical progress

of the human race too, as it was discovered in central Africa, which is an unusual place to find hominid fossils (Becoming Human). Its status and place on a particular branch is currently under discussion and cannot be fully classified until further fossils are found. This is often the case and is a major reason why the evolutionary hominid family tree often changes.

Question Four

The three timelines being examined make a number of assumptions. Arguably, scientists must make some assumptions, based on evidence, in order to establish some distinctions between species and also to create links between them to develop the hominid family tree. The main assumption, made by all three, is that the species are listed in the correct order. DNA and circumstantial evidence can give us a vaguely accurate image of how our species has evolved, but as already proven by the various alterations made to species' statuses, this information can alter our perception of the family tree very easily. The closer examination of *Ardipithecus Kadabba's* teeth showed that it was notable for its “extremely primitive canine pre-molar honing complex.” (Hardt & Henke 1798) This in turn, meant that it was elevated from sub-species status to being a species in its own right.

The assumption that the current state of our evolutionary tree is final, is a foolhardy one as discoveries are being made all of the time. This is demonstrated most strongly in the PBS timeline which omits a number of species, seemingly because they are considered to be more 'minor' species. However, its assumption that the species named *Sahelanthropus Tchadensis* should be omitted in lieu of the more established *Orrorin Tugensis*, is unfair.

S. T Chadensis was discovered more recently and the current evidence indicates that it was a species of our genus who were alive before O. Tugensis, as well have less evolved features such as its ape-like structure: “[it] had a chimpanzee sized brain, it walked upright on two legs and had smaller canines like other early humans.” (Human Origins) The evidence clearly demonstrates that it was our earliest ancestor and although it does require more fossil evidence to become more established, the current evidence indicates that its status as the first form of human is correct. PBS’ choice to omit this from their timeline makes the assumption that this species is insignificant and unimportant. This is the same with a number of other smaller, lesser-known species. This assumption is unfair because they still demonstrate our evolution both physically and geographically.

The key word to keep in mind when assessing our hominid evolutionary family tree is ‘theory.’ The word implies a certain level of guess work, assumptions and facts but that it must all be taken as a constantly evolving concept of its own. Our understanding of our evolution may never be complete but by piecing together the evidence that we do have, we are able to establish a reasonably clear idea of where we came from, albeit one which is still just a theory. The best that we can do is to make educated guesses based on the evidence we have encountered: “ these observations have led to compelling accounts of how organisms have changed over time” (National Academies Press). This quote best demonstrates our ability to interpret evolution: through observations, evidence and organisms living today.

In terms of whether we will ever fully understand our evolutionary tree or not, really depends on how much more evidence we continue to find. Arguably, the hominid family tree is currently looking quite full: when including all the sub-species too, Human Origins includes no less than nineteen species in their timeline and Becoming Human include twenty species overall. This demonstrates clearly how our tree is developing all the time and the disputes that go on between scientists to determine which species are in their own right and which are simply sub-species. With the advent of further evidence, these numbers could alter dramatically and as we progress in our current time, who is to say that we won't evolve again. In 2 million years, our descendants may be trying to assess whether we shared the planet with a shorter version of the human race, or whether they lived at a different time from us.

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