

**Response Paper to the Video:**

**Search for the First Humans**

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In the Kapsomin region of Kenya anthropologists discovered 13 pieces of a skeleton they claimed is of a human ancestor's. This happened in the year 2000 thus the specimen became known as the Millennium Man (it was male), and its scientific name is *Orrorin tugenensis*. "Orrorin" means "original man" in the local tribal language where the specimen was found, in Tugen.

The scientists argued that this 6 million year old fossil is a hominid for two major reasons. One of them was based on the groove found at the head of the femur. The existence of the groove would suggest bipedalism. The muscles connecting the femur to the pelvis would create this groove in those animals where the relative position of these bones would cause the muscle to stretch in this direction in bipedal animals. Because the groove is there on this bone the scientist concluded this animal was bipedal. And their definition of being a human ancestor was almost solely based on being bipedal therefore the Orrorin was hominid. But a few minutes later in the video they acknowledged that there are bipedal primates that are not on the human branch of the evolutionary tree, like the orangutan (which is both arboreal and bipedal.) Thus they essentially discredited their own argument.

Staying with the femur for one more second it is unfortunate that the tubercle part of the head was missing. Its height, shape and direction would have given more information about the animal's locomotor capabilities.

The other major argument was based on the teeth. It is relatively small and covered with strong enamel like ours. Both of these features would indicate that they belong to the hominid line. The counterargument for this claim would be that tooth size increased in all African ape lineages over time. Furthermore shifts in diet are well within reason to describe a small increase and then a decrease in the line leading to modern humans.

According to the video orangutans were pre-adapted to bipedalism. If it is true and humans developed in a similar fashion it means that the well-known visualization about how humans became bipedal is wrong. In that picture, which are present in so many textbooks and the public knowledge, a series of primates are shown as it gradually stands up and at the end of the line it is an erect modern human. This video showed a different kind of animation where even the very first animal in the process was already bipedal, just the size, body hair and some other features changed as it evolved, but not its bipedal nature.

The “savannah theory” states that bipedalism developed when at the end of the Miocene epoch (5 and 8 million years ago), a drying period enveloped equatorial Africa. At this time the forest began to shrink, forcing the apes to begin to make the transition to a terrestrial way of life. They started to take long walks between trees or forests and that’s the reason their body adapted to walking on the ground.

This video slightly challenged this theory. They concluded that the particular region of Africa, where the Orrorin bones were found was partially forested. If it is the case--and I wasn’t entirely convinced based on the video whether 6 million years ago it was—that would mean that Orrorin didn’t have to walk long distances between trees. This would be in accordance with the idea that like the orangutans this hominid has pre-adapted to bipedalism.

Finally a few words about the terms: hominid, hominin and hominoid. Being a hominoid means belonging to the Hominoidea superfamily within the taxonomic system. This includes apes and humans. When the taxonomic system was created it was based on phenetic characteristics. This and the scientists’ intention to put humans on a separate branch of the tree resulted in classifying Humans as the only members of the Hominidae family and all of our closest relatives the apes to the Pongidae family. In this classification hominids are the members of the Hominidae family, or maybe I should have said it in singular. In this system apes belong to the Pongidae

family. In a cladistic system, which is based on the evolutionary tree and not on visible features, only the orangutans would be of the Pongidae family because they are more distant relatives of us than the chimps, bonobos or gorillas. Cladistically speaking they should belong to the Hominidae family. In order not to confuse our language too much scientists who follow this interpretation of the taxonomy decided to use a new term for animals belonging to this family: hominin.