

Week 2 Lecture 0

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September 8, 2021

1 Administrative drivel

- clickers aren't working today
- You can use your favorite scientist

2 More on classification

2.1 Characteristics of *Family* Hominidae

- 3 genera, 5 species
- most of the non-human primates aren't doing so hot
- Homonids:
 - Pongo (orangutan)
 - Homo (humans)
 - Pan troglodytes (chimp)
 - pan paniscus (bonobo)
 - gorilla
 - lowland gorillas
- This list is much larger if you include the extinct genera and species

2.2 Characteristics of *Genus* homo

- even larger brains than others in the family
- Reduced face and jaw face
- increased reliance on social/cultural interactions
- use of tools and fire

- tool usage is not unique to humans, but fire is (though not all humans have done so historically)
- hands adept at complex manipulation
 - lots of mammals have fewer toes/fingers (horses walk on 1 for example)
 - 5 fingers/toes is the “ancestral condition”
 - The thing that makes human’s unique is the dexterity, fine motor coordination, opposable thumbs, etc.
- Habitually bipedal
 - never thought of being bipedal as a “habit”
 - chimps and other hominids can walk a short distance, and can knuckle walk, but aren’t habitually bipedal
 - this makes it easy to cover large distances on foot, since it frees up the hands to carry things, including young and tools, between food sources.
 - this made it advantageous to only have 1 child at a time till each child can walk on it’s own, so populations grew slowly till agriculture hit.
 - * no longer needed to be nomadic
 - * don’t have to move around, so you can have a child every year, leading to the exponential growth in human populations. (this started 8-12 thousand years ago, the next spike in reproduction rate happened in mid 1800s from industry).

2.3 classifications: know this

(Left is the human category, you should know the characteristics of them as well (see summary slide))

- domain – eukarya
- kingdom – animalia
- phylum – chordata
 - sub-phylum – vertebrata
- class – mamalia
- order – primate
- family – hominidae
- genus – homo
- species – sapiens

– subspecies – sapiens

Species name: *Homo sapiens sapiens*

- generally, (for our purposes) we say 2 animals are in the same species if they can reproduce, but this is not the full story for biologists.

Q: Are humans descended from chimpanzees? *NO!!*, however, they share a recent common ancestor.

3 Human evolutionary history

We'll mostly cover the major branches – this is not a complete coverage.

- humans have been on their own for about 6 million years

3.1 20 million years ago

- Hominidae, the Great Apes, appeared
- Evolved likely in the african savana
 - Arid and dry, but can support trees
 - trees are sparse, since large animals knock them over
 - texas was once a savana when there were mastadons there
- standing up freed hands, and made it easier to see further

3.2 7-8 million years ago

- Human-like group seperated from great apes
 - First Orangutan, then gorilla, then chimp lineages split off
- Human ancestors moved into drier areas outside of the equatorial jungles
- last common ancestor with Pan: *Ouranopithecus*