

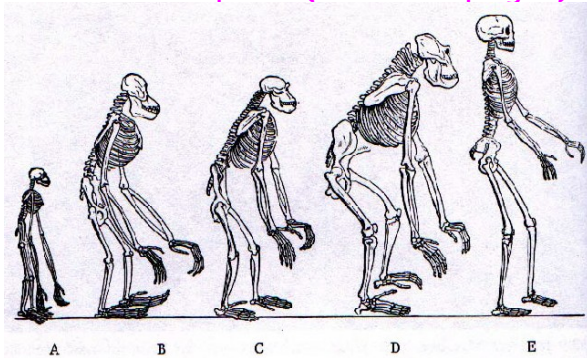
The Anthropological Answer: Human Evolution

Sam wrote this

Jill wrote this

The difference between us and animals

- Humans are bipedal (can walk upright)



- Our brains are more developed: humans can communicate in oral AND written form; they can think and problem solve

Classification of species

- Age of exploration --> during 15th and 16th century
- During that time, more animal and plant species were discovered
- Carolus Linnaeus was one of the earliest naturalists to take up the study of our origins
- First idea: classify plants and animals according to their anatomical structures
- Later on, he saw **CROSSBREEDING**



- Crossbreeding: "process whereby pollen from one plant is given to another plant species, which is then fertilized, creating a new hybrid or category of plant"
- In other words, crossbreeding: "the mating of organisms of different strains or species"

Fossils indicate proof of evolution

- Discovery of fossils proved that humanity has evolved
- French anthropologist: Jacques Boucher de Crevecoeur de Perthes
- Jacques discovered stones along the Somme River in France that appeared to have been molded or shaped into tools or weapons
- This discovery indicates an important part of humanity: our ability to produce and use tools
- There were many religious objections to the evolution theory

Charles Darwin's theory

- Charles Darwin: British scientist
- He located evidence that proved the world's vibrancy in the past and present
- His greatest discovery was in the Galapagos Islands --> observed many species unique to these islands
- Realized that in each group of plants and animals there was a variation in size or color
- He believed that environmental conditions can change a species' way of adapting
- The species that didn't adapt went extinct

Theory of Natural Selection

- Darwin's book: *On the Origin of Species*. Published in 1858
- Species are forced to adapt to the environment and evolve or face extinction
- Over centuries of adaptation, species pass on these survival characteristics
- A new stage of adaptation would begin once an imbalance between food supply/species growth occurred
- "*Survival of the fittest*"
- Darwin provided groundwork for theory but never fully proved his theory

Genetic Proof of Evolution

- Gregor Mendel began crossbreeding plants, and crossbred plants of two different colors
- He noted that the results were either one colour or the other
- One flower's dominant unit dictated the color
- Then, he bred a next generation, and found that they contained cells that were from the initial generation of plants
- So, humans inherit certain things from their parents, however keep a unique DNA code
- If this is correct, then the traits that we have inherited from our ancestors while becoming a more sophisticated species explains how we have evolved.

Human Proof of Evolution

- Most paleoanthropologists thought Africa to be the birthplace of humanity
- In 1924, Raymond Dart discovered a fossil of a child in South Africa of over two million years old
- He named the skull "Australopithecus africanus"



The Evolution of Humans

- 4.4 million years: a bipedal specimen that appeared to live in trees. (Ardipithecus ramidus)
- 4.2-3.9 million years: bipedal with upper arms similar to those of humans. (Australopithecus anamensis)
- 3.9-3 million years: ape like thumbs and face, human-like arched foot and pelvic as well as leg bones. (Australopithecus afarensis)
- 3-2 million years: slightly larger brain, jaw and teeth resembling humans. (Australopithecus africanus)
- 2.5-1.5 million years: larger brain, skull shape like humans, evidence of creation and use of their own tools. (Homo habilis)

- 1.8-300 000 years: larger build than modern humans, used fire and sophisticated tools (Homo erectus)
- 120 000 years: large brain, lived in caves, obtain and maintain fires, buried its dead. Some believe they have evolved into humans, others say they were extinct. (Homo sapiens (neanderthal))
- 500 000-200 000: variation of homo erectus (homo sapiens (archaic))
- 120 000 years: precursor of modern human, larger brain, cave art, even more sophisticated tools. (Homo sapiens (modern))

Stretching the Bounds of Humanity

- Bernard Rollin was working on an experiment where they helped raise a baby chimpanzee
- He saw a chimpanzee in a cage motioning toward him
- He read the card on the cage and understood that he had been used for experimentation and was dying
- The chimpanzee grasped his hand, met his eyes, and died
- This was taken from a book was "The Great Ape Project"
- The writers of this book want to apply the same laws of morality to the great apes as we do to human beings
- Jane Goodall says that apes can definitely feel very, very similar emotions to those of human beings
- They have some kind of self-concept



Oh my Gosh, how cute is that?!

- Christoph Anstoetz says that the mental capacity of great apes are far above the level of severely mentally handicapped human beings

- American scientists says that the use of chimpanzees for experimentation is great because they're so similar to us, yet they should also be expected to have rights due to the fact that they are so similar to humans, so that poses a contradiction.
- The authors of this book want people to see experimentation on apes as a form of murder.