

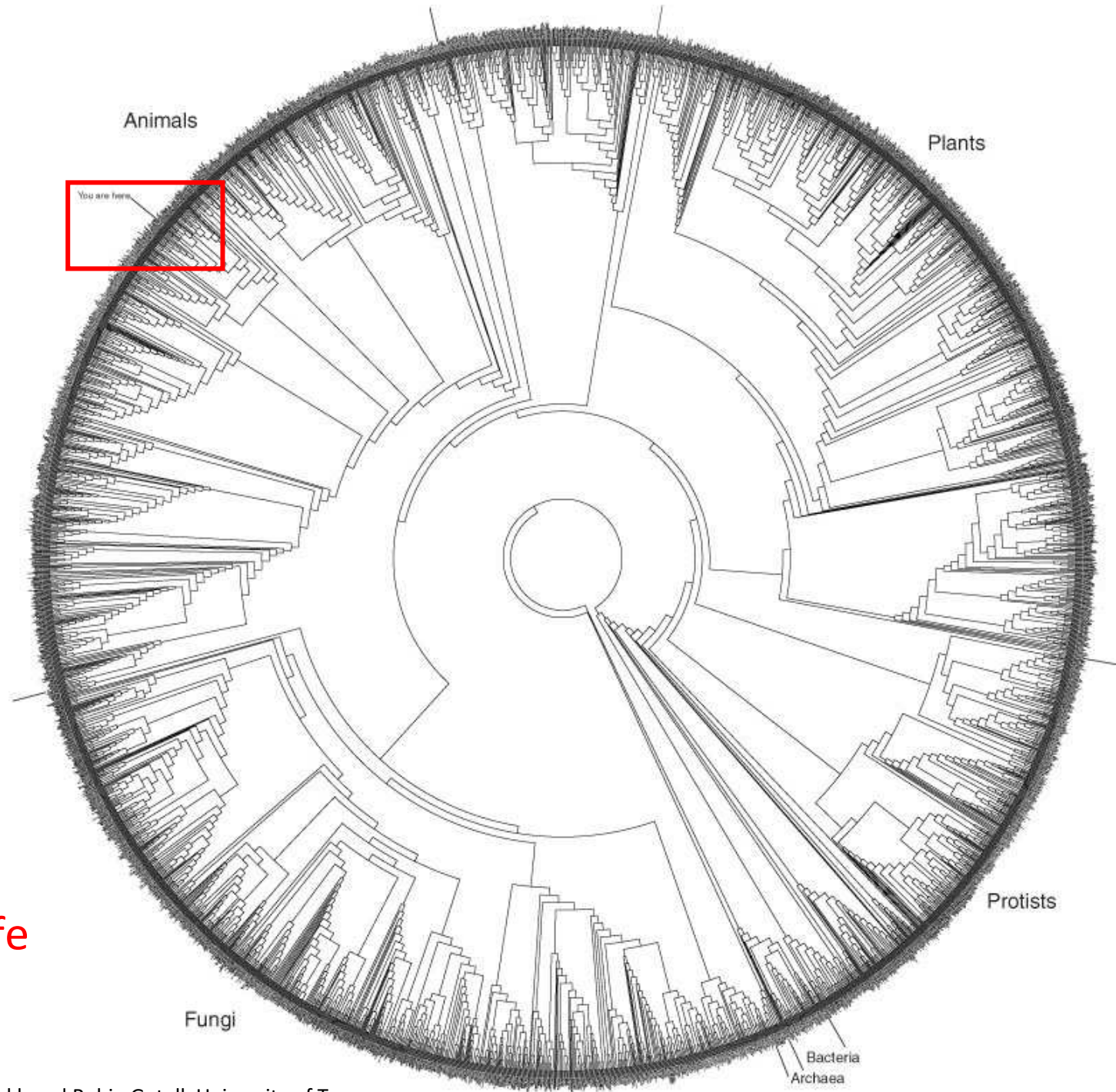
The origin and nature of humans: what science tells us

November 4, 2012

Grace Chapel

Steve Schaffner

Tree of Life



David M. Hillis, Derrick Zwickl, and Robin Gutell, University of Texas.

here

Species names listed in the tree include:

- here
- ... (many more species names follow in a similar pattern, including various genera and species names like *Myxine glutinosa*, *Amphiuma*, *Urolophus*, etc.)

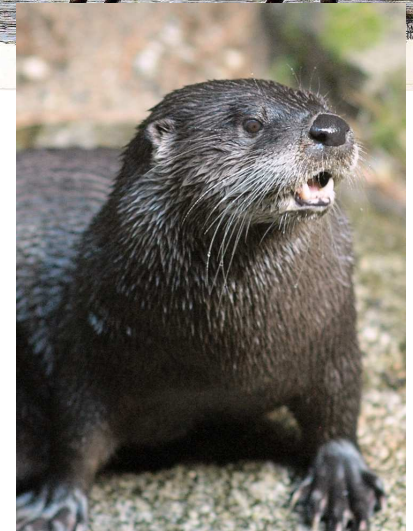
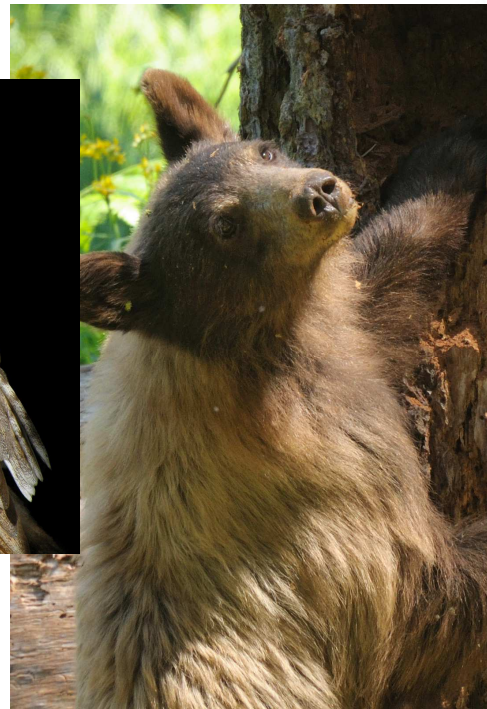
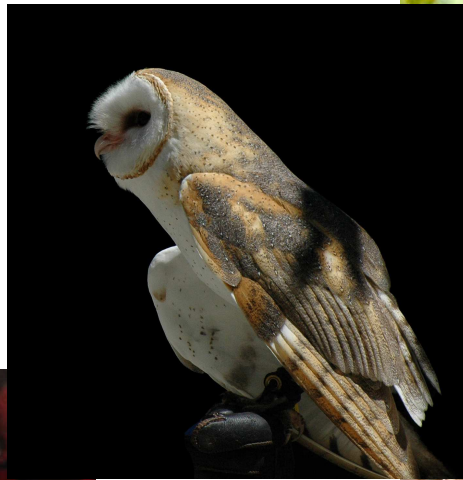
Traces of evolution in humans

Long sea voyage = scurvy

But most animals don't get scurvy



image: Boaz Arad



Why scurvy?

Primates cannot make their own vitamin C.



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Mangebay image: Flickr user law_keven

Why scurvy?

Higher primates lack an enzyme needed to make vitamin C

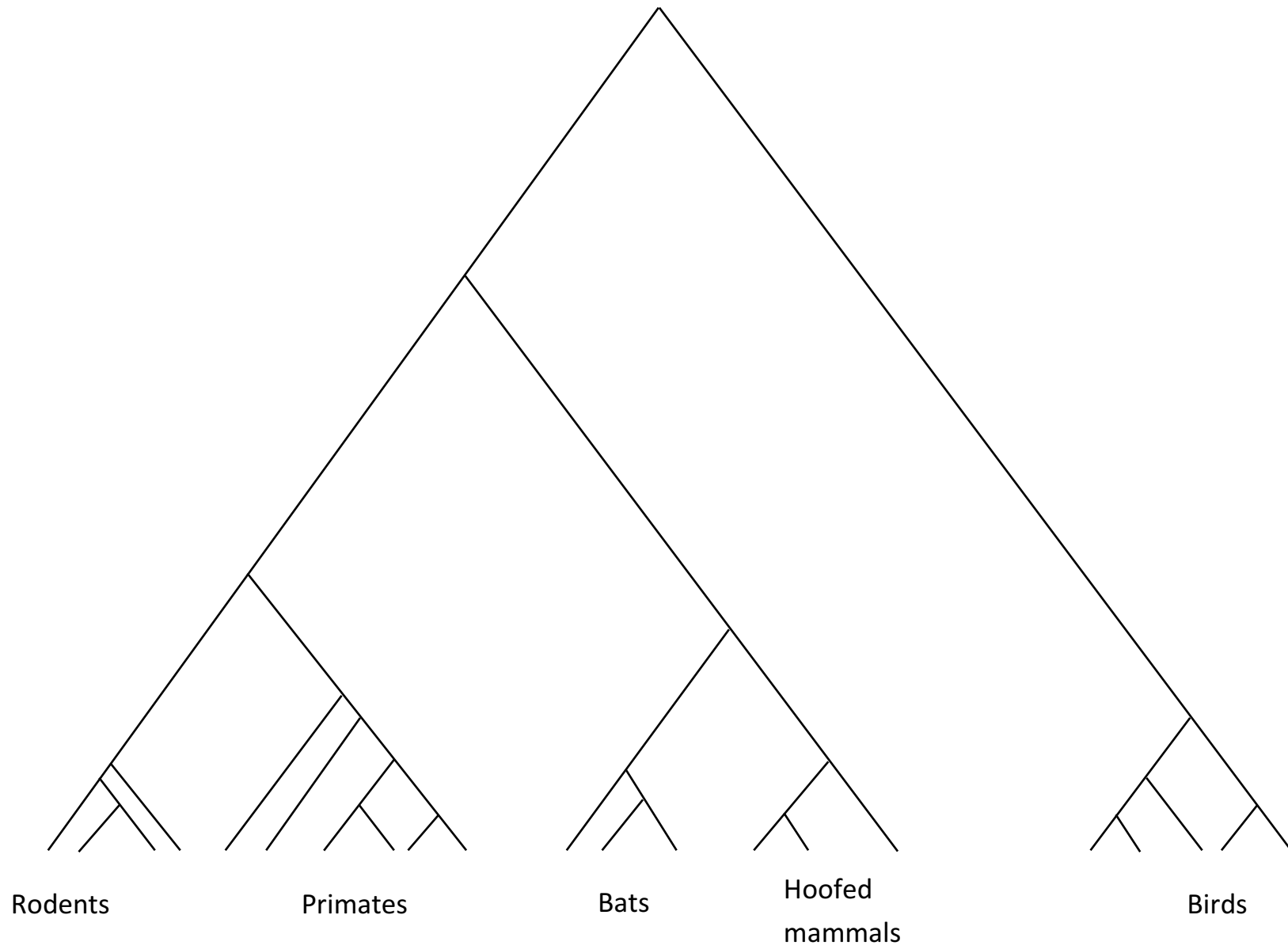
The gene for the enzyme is present, but broken

The rest of the machinery still works

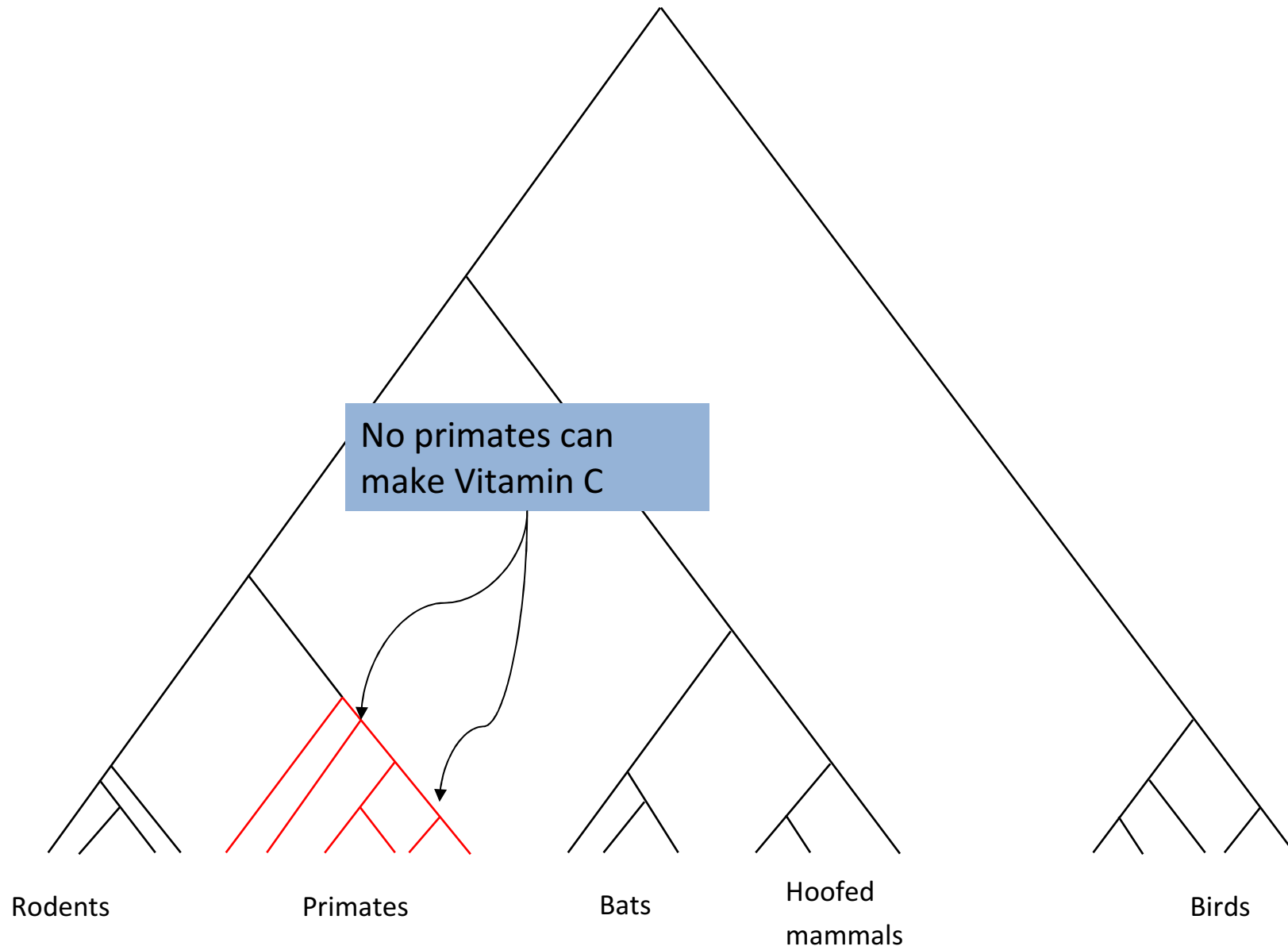
Other animals can make the enzyme

Why is it broken in these primates?

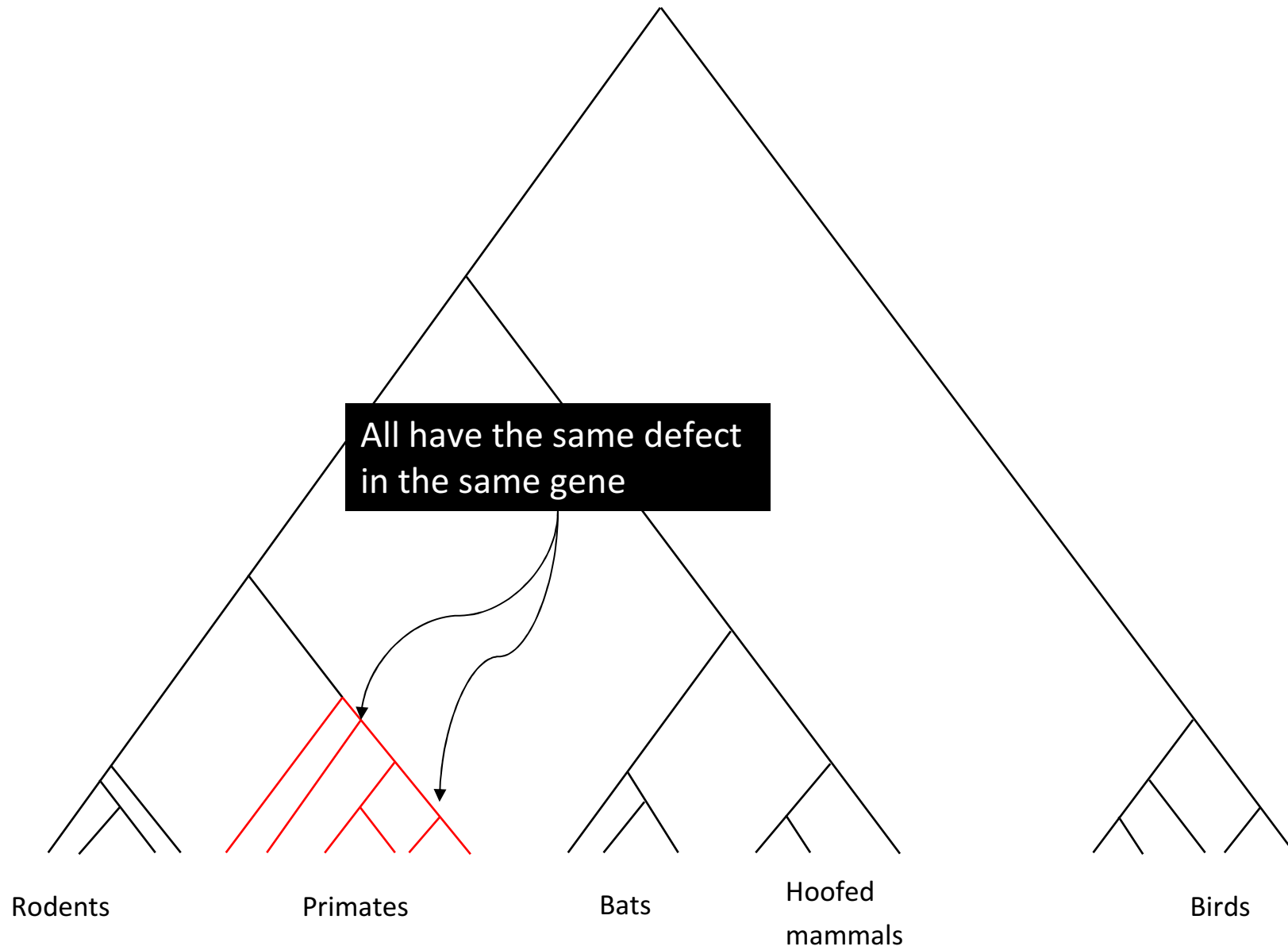
Why scurvy?



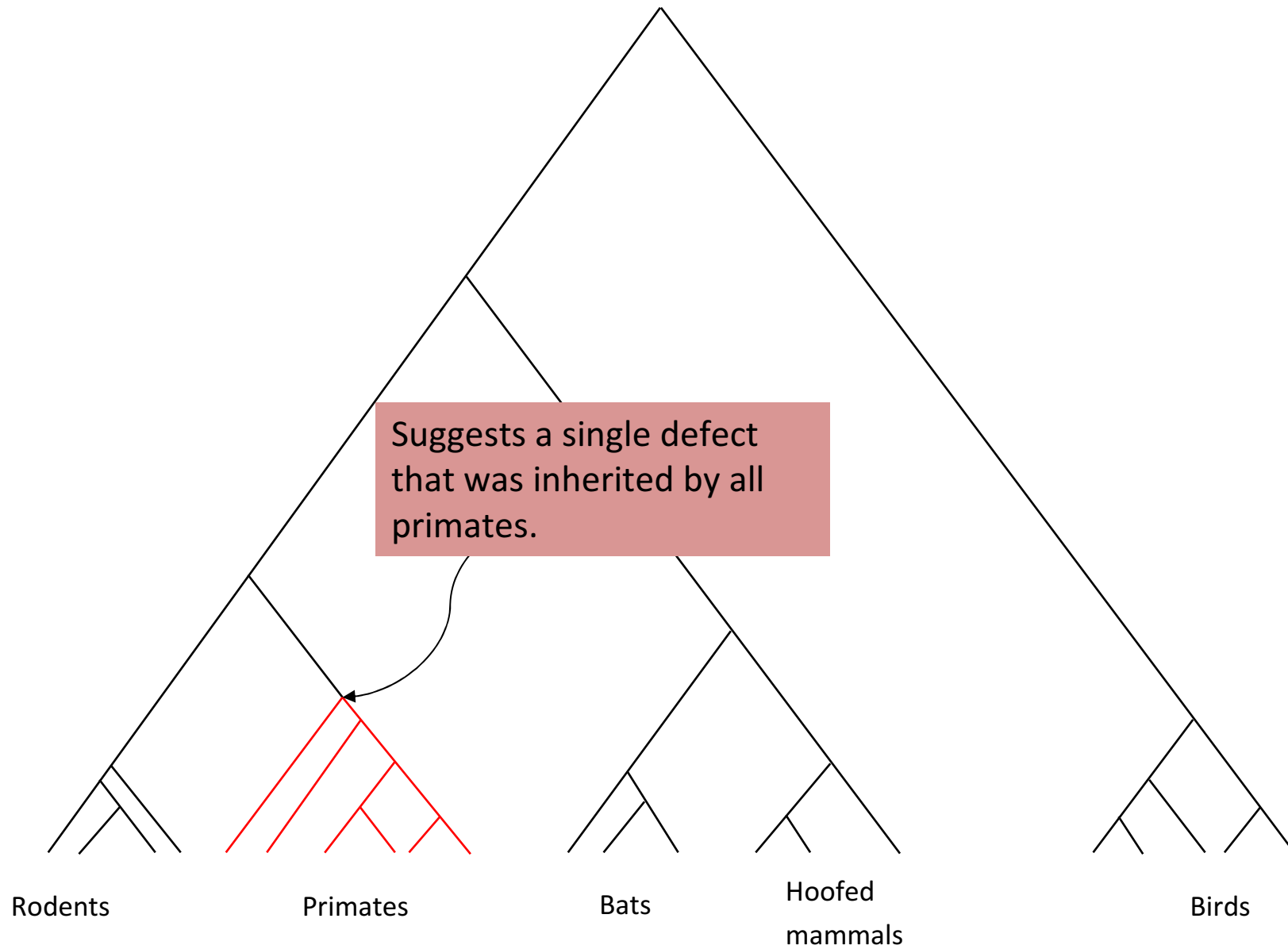
Why scurvy?



Why scurvy?



Why scurvy?



A complication to the story

Some other species can't make vitamin C either

Guinea pig



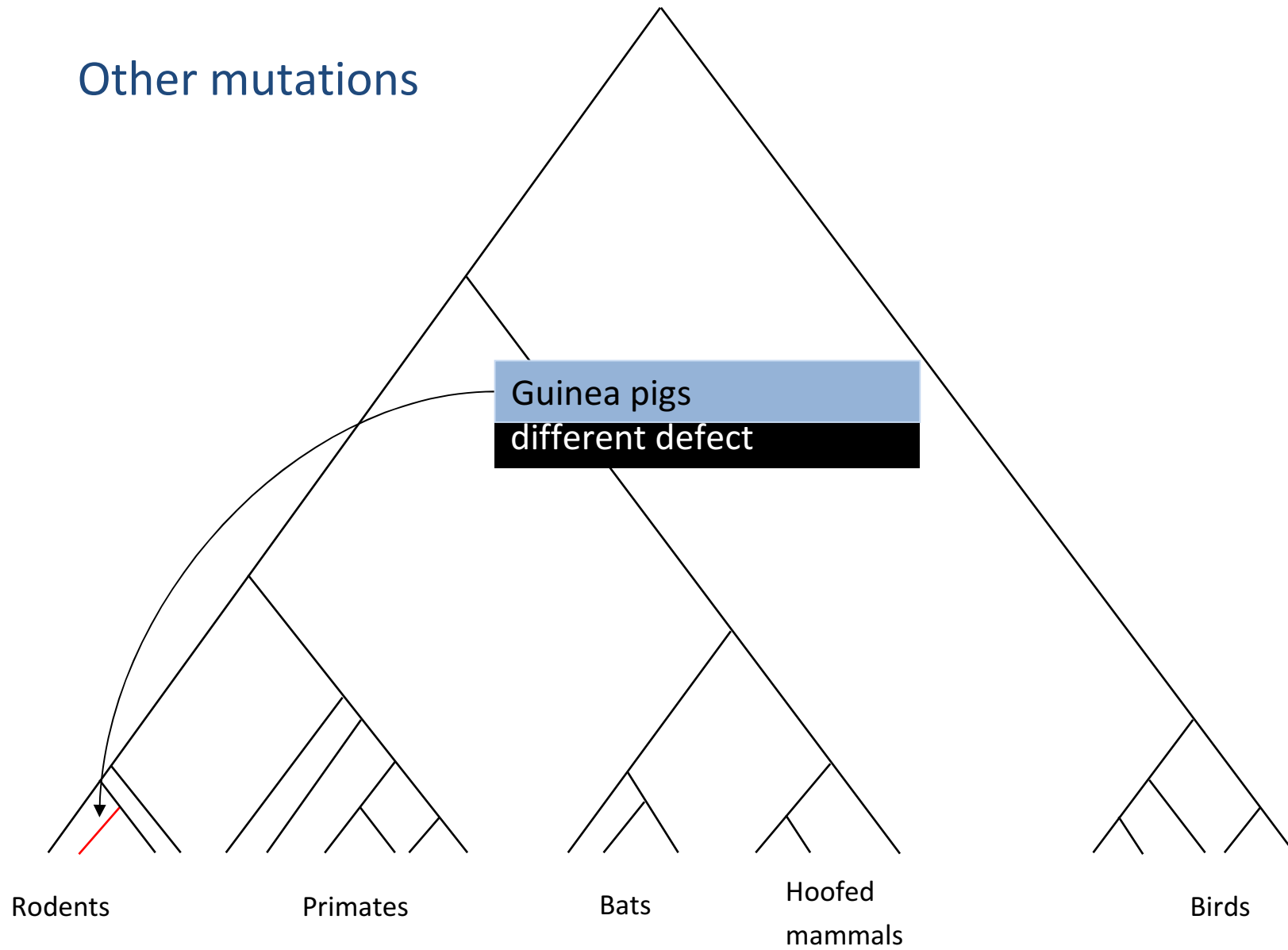
Fruit bat



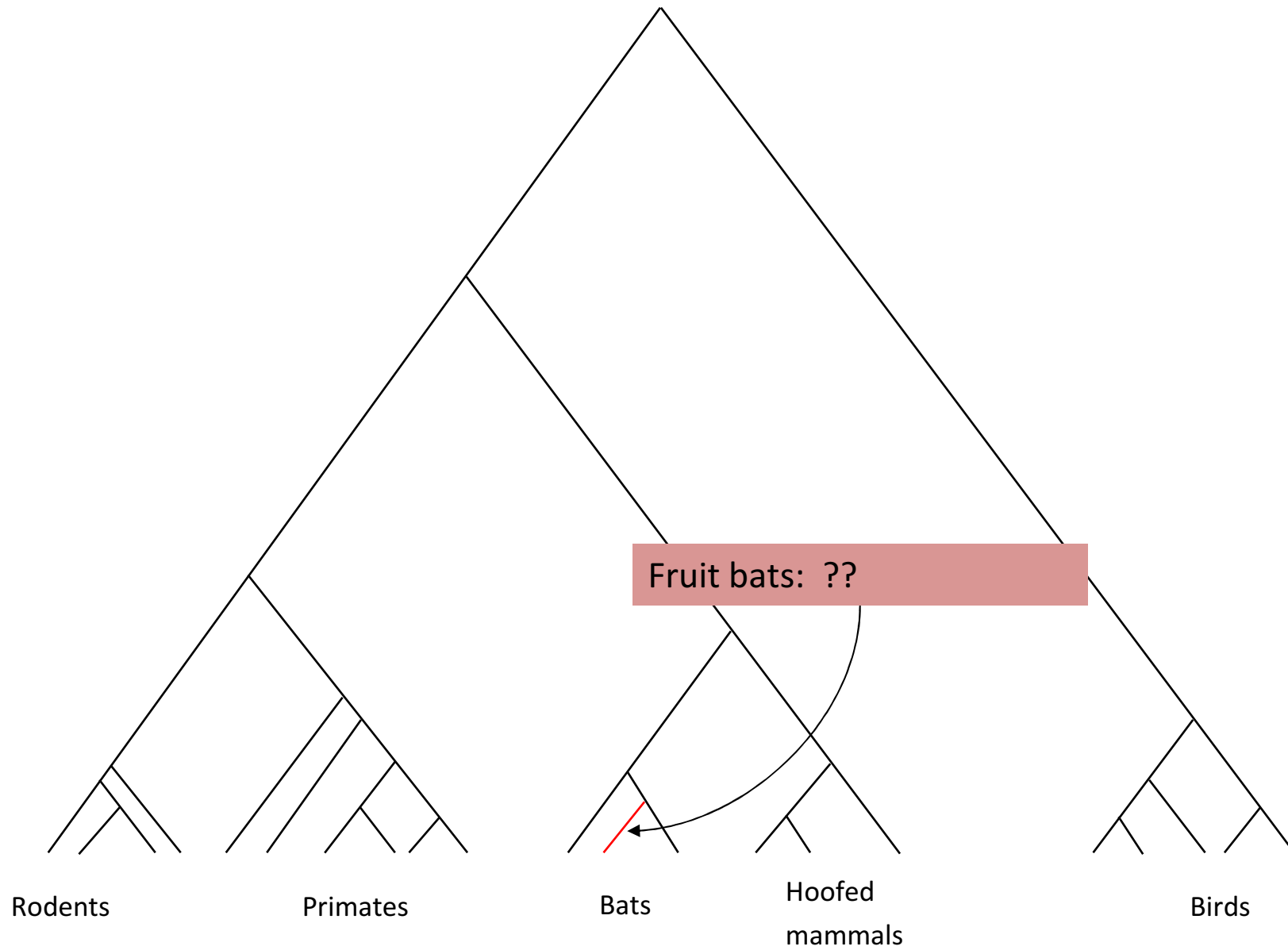
Image: Wikimedia user Anton 17

Other branches

Other mutations



Other branches



Evolutionary relics



Image: Ildar Sagdejev

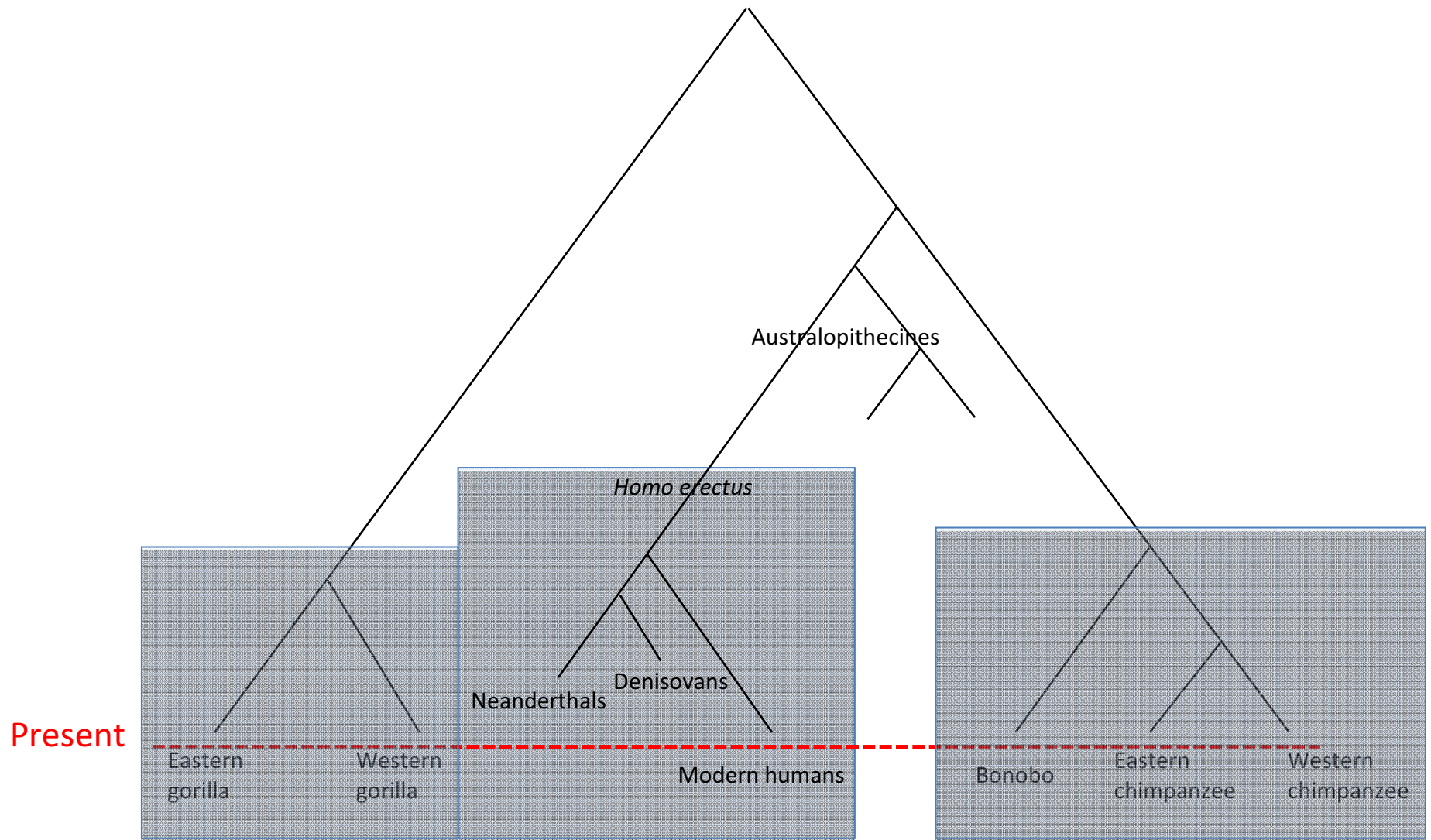
Evolutionary leftovers

Why do we get goosebumps?



Image: Peretz Partensky

The human family tree



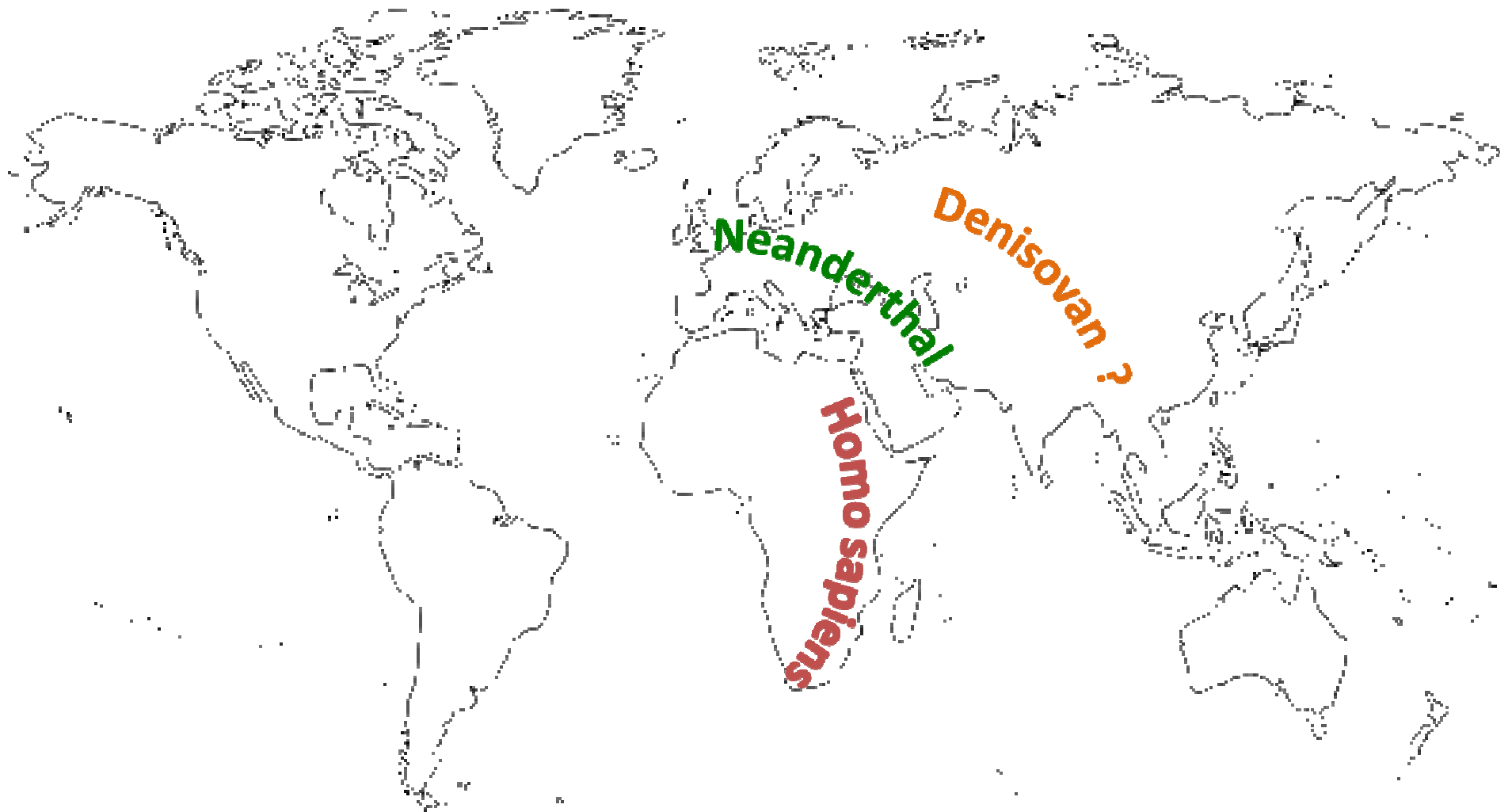
Humans and their relatives

1.5 million years ago



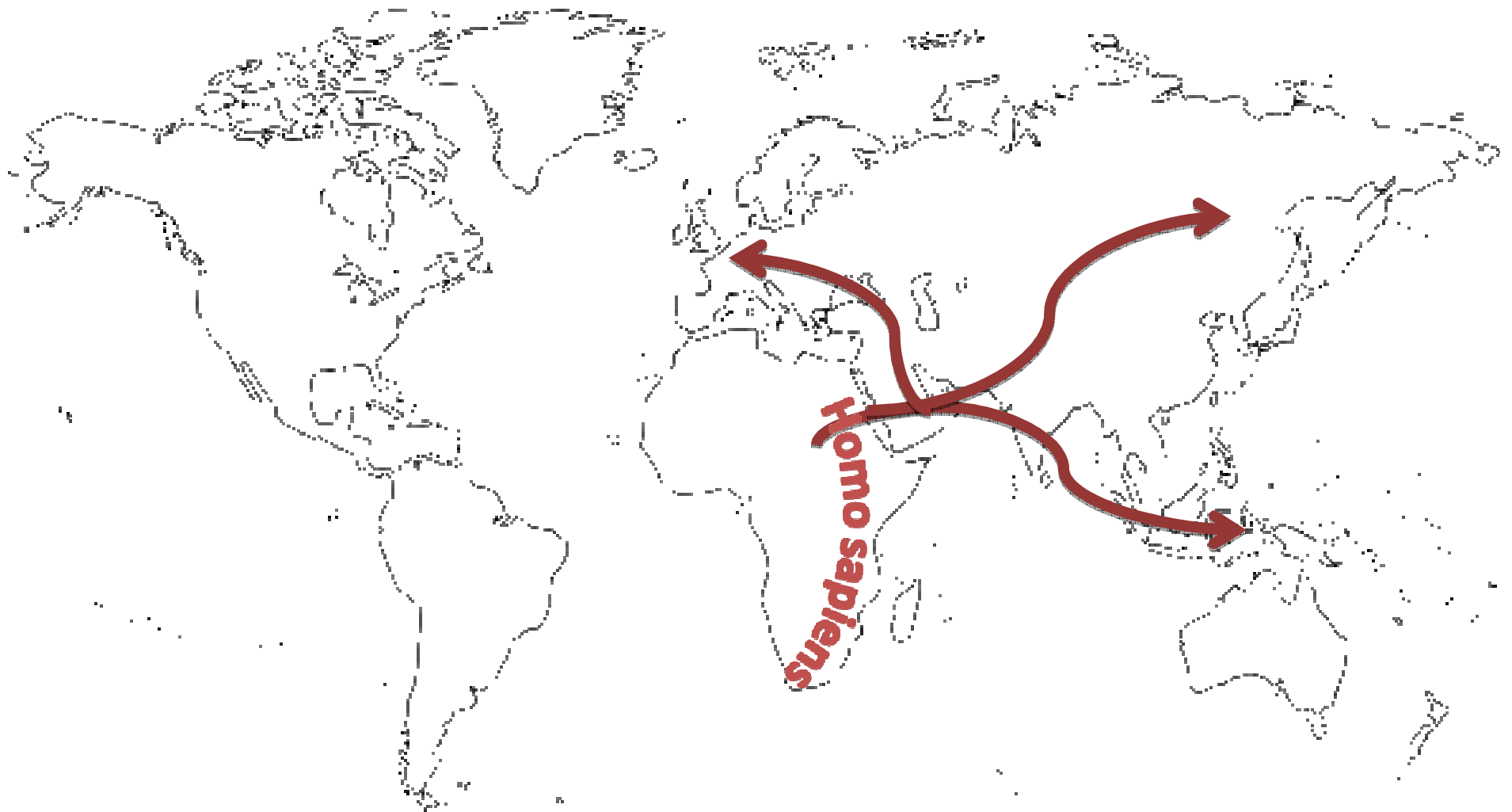
Humans and their relatives

150 thousand years ago



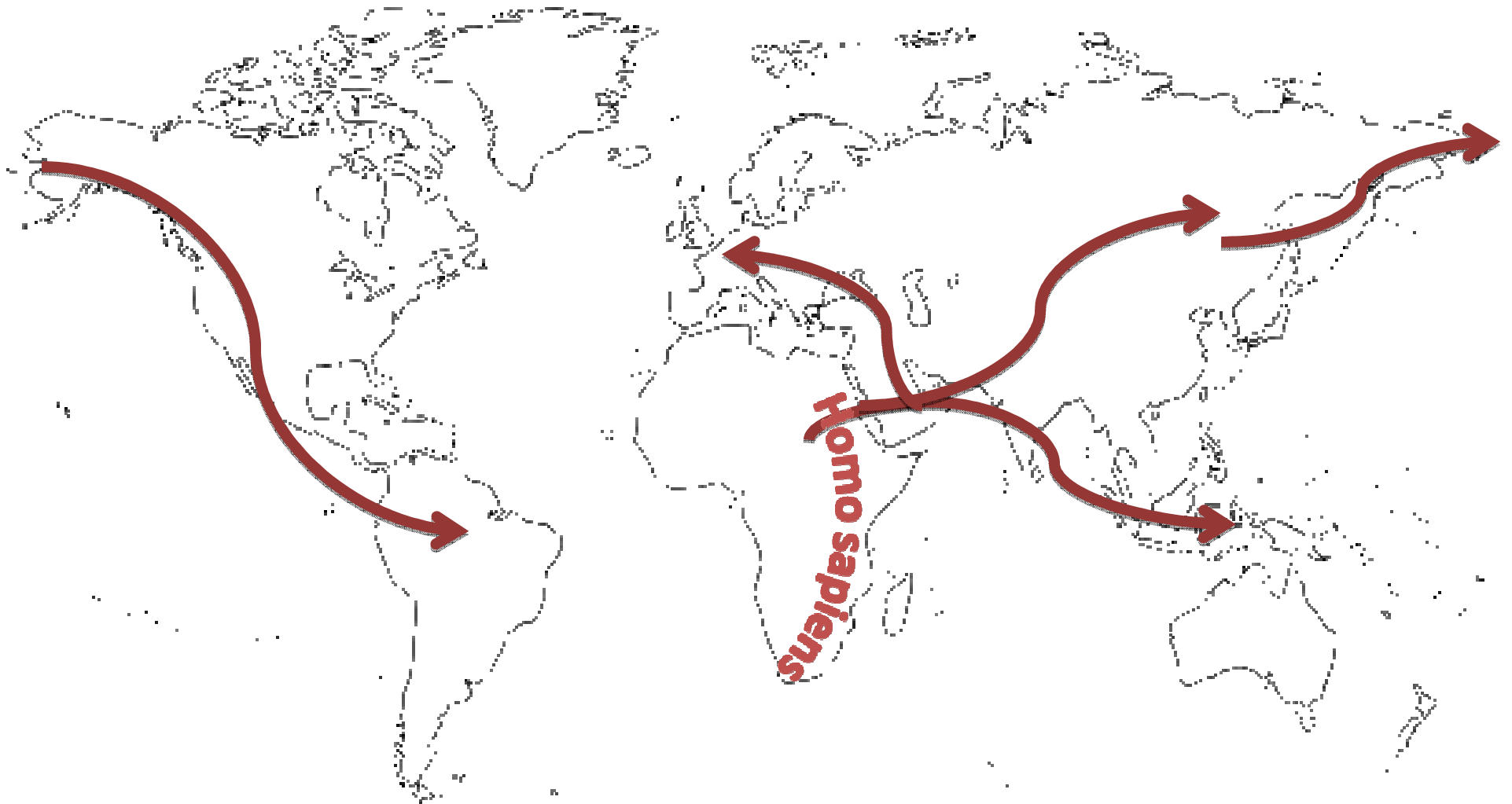
H. Sapiens leaves Africa

60 thousand years ago



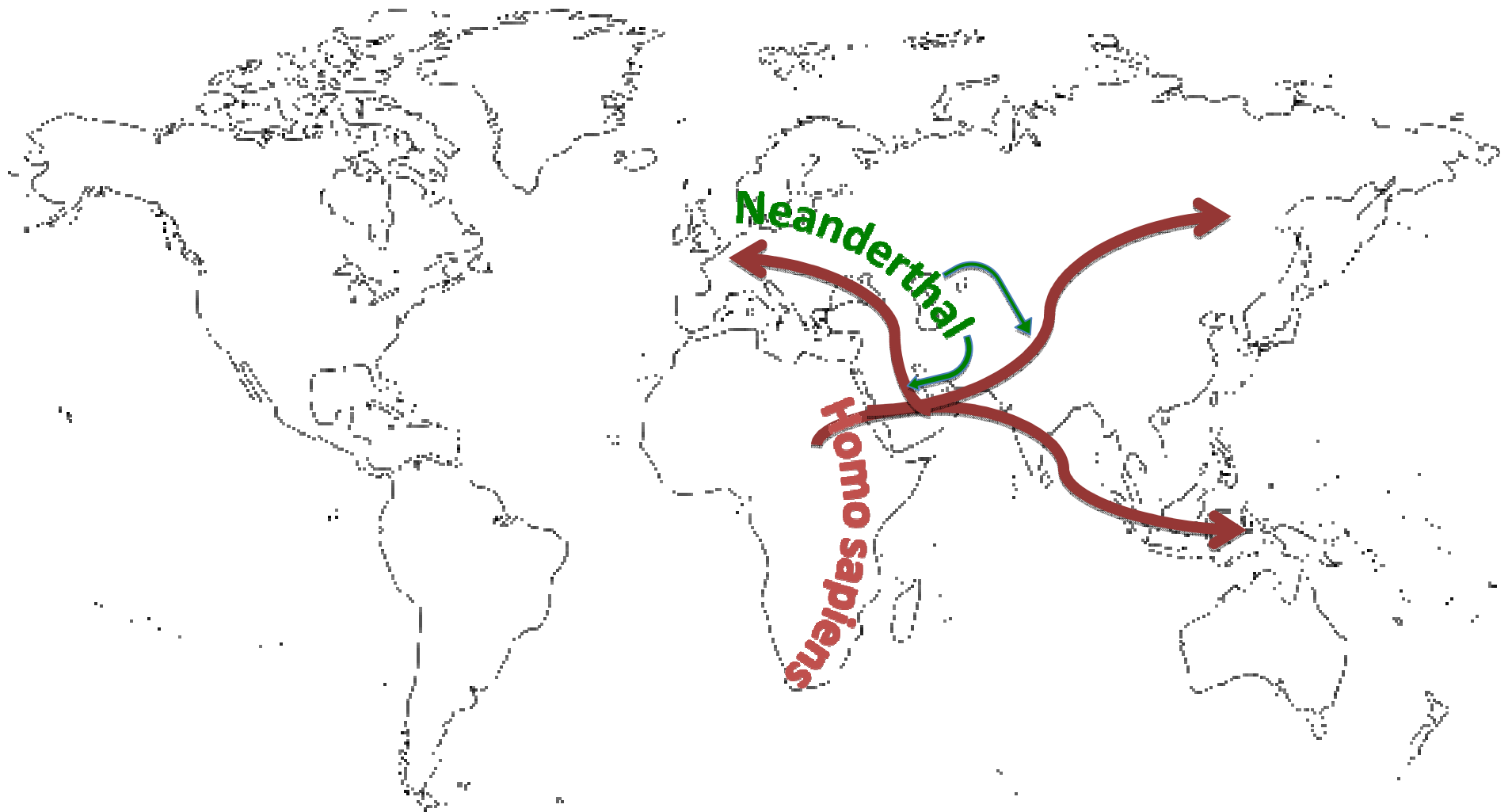
H. Sapiens leaves Africa and spreads around the world

20 thousand years ago



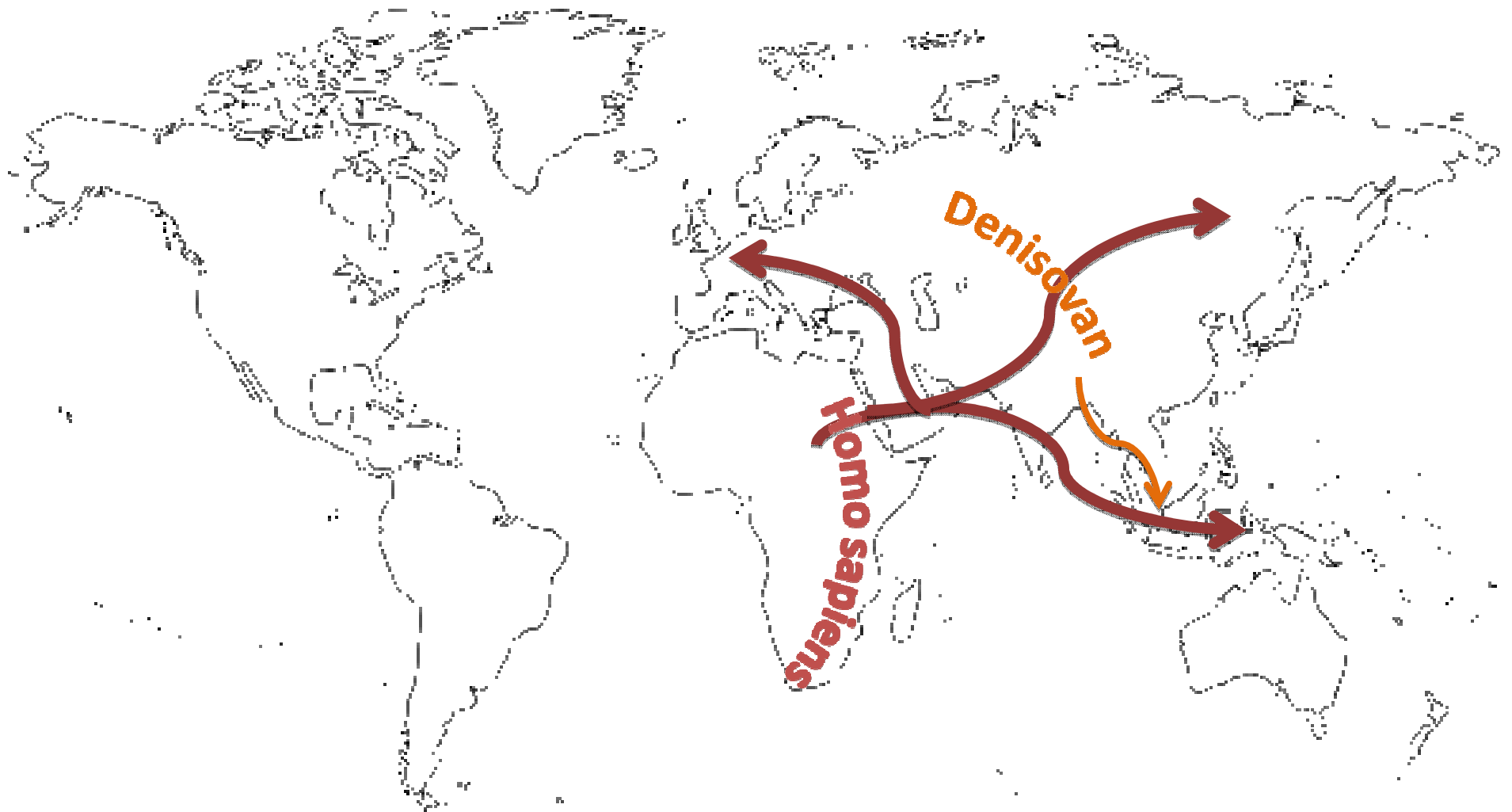
Interbreeding

60 thousand years ago



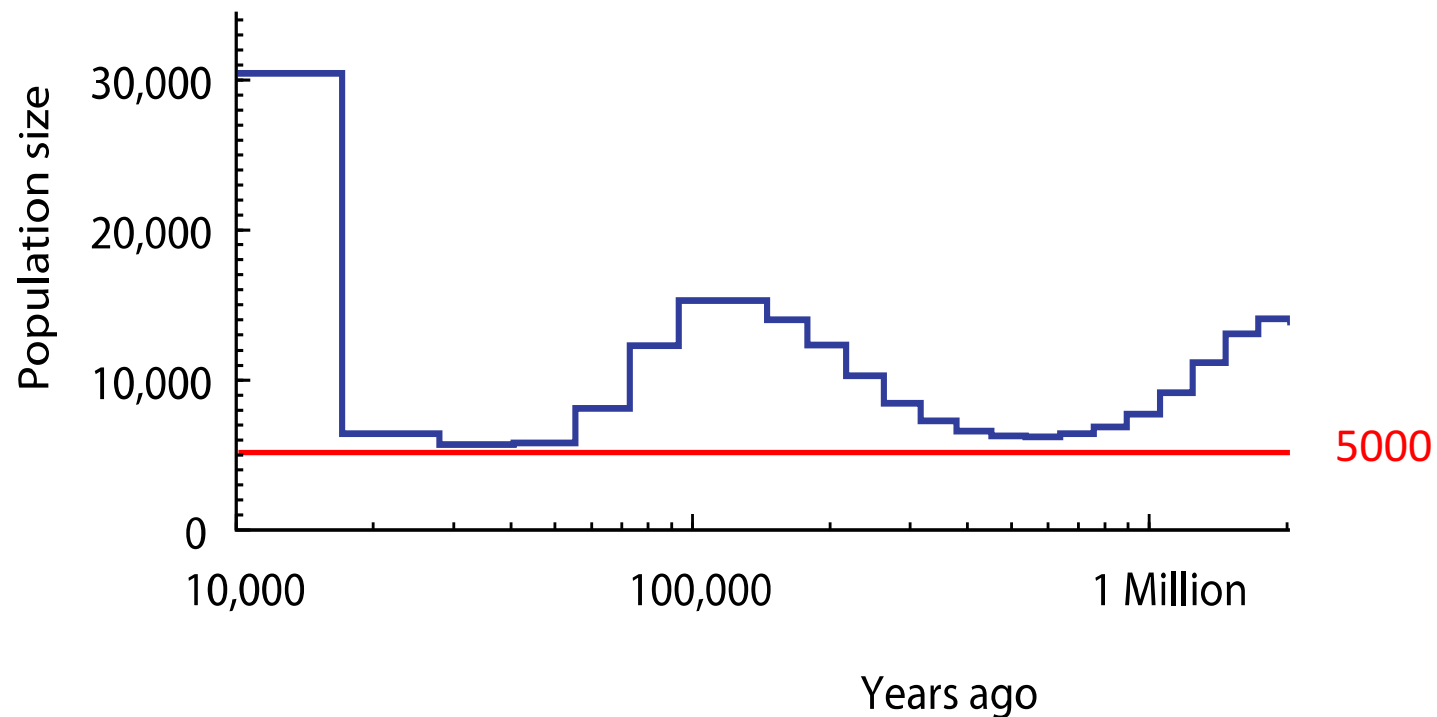
And interbreeds

60 thousand years ago



What happened to Adam and Eve?

We can estimate how big the human population size was from genetic data



How do Christians handle this evidence?

Concordist views (Genesis 1-11 is historical)

- Adam and Eve were a real couple
 - chosen from a larger group
 - given the image of God and the chance to know him
 - rejected God

We all inherit their guilt.

- Adam and Eve represent all early humans
 - Gradually developed spiritual awareness
 - Repeatedly chose to turn away from God

We all inherit their tendency to sin

How do Christians handle this evidence?

Nonconcordist views (Genesis 1-11 is not history)

Theological/symbolic interpretation

- Genesis describes the spiritual state of every human (“Adam” = “man”)
- Everyone chooses to turn away from God.
- We all choose to try to be like gods.
- We are all in a state of exile from the presence of God.

Explains why there are so many symbolic-sounding elements.

A third approach

“I don’t know”

Common ground

All of these positions are united in the essentials of the faith

- We are all sinners.
- We all stand in need of Gods mercy.
- God entered his creation in his son, Jesus, and redeemed us through his death and resurrection.

How (and when) *did* humans become human?

Simple stone tools



Image: José-Manuel Benito Álvarez

Complex stone tools



Image: Museum of Toulouse

show

brain

Fire

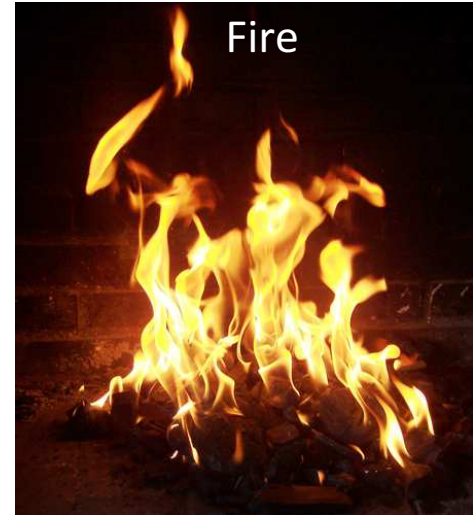
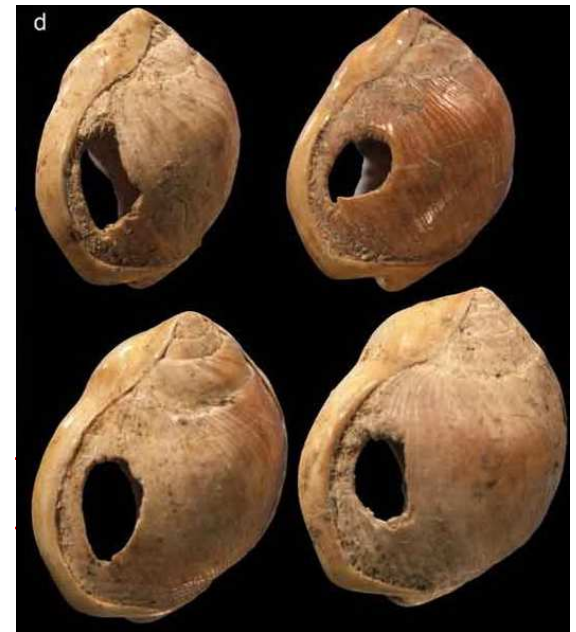
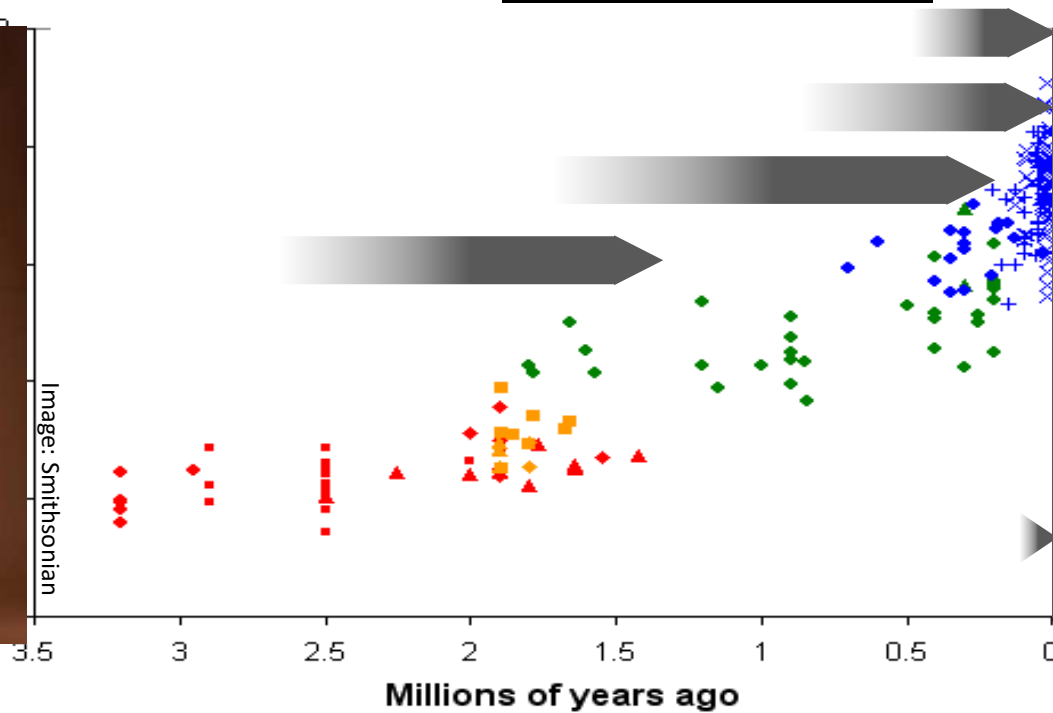


Image: Smithsonian

Spears



Jewelry

When did spiritual life start?

Possible clues

Burial of dead: 100,000 years ago

Jewelry: 70,000 years ago

Dramatic increase ~40,000 years ago

- Cave painting
- Carved figures
- Musical instruments

Most notable in Europe

25,000 years old



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When did spiritual life start?

Should we focus on the gradual development of culture . . .
or the sudden change?

What kind of change was it?

- Genetic
- Environmental
- Cultural
- Spiritual

The soul (or spirit)

Was this when humans acquired a soul?

What is a soul, anyway?

The immaterial essence of who we are

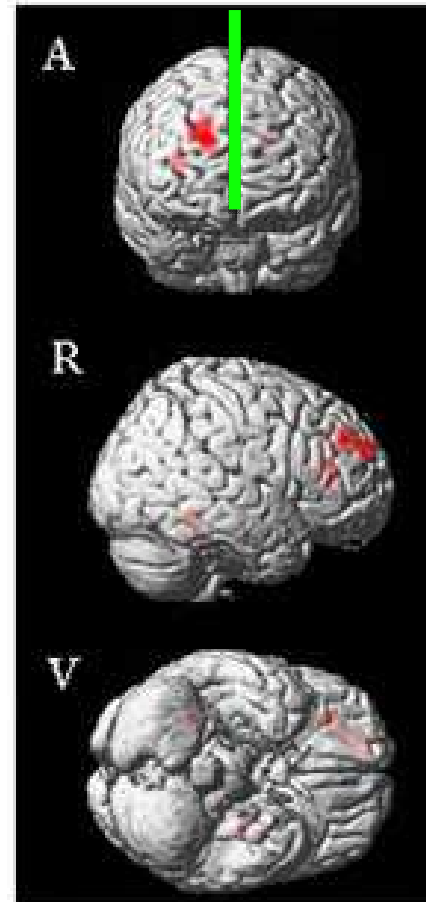
What does it do?

How does it work?

The soul as science

Since the ancient Greeks, the soul was a scientific explanation. It explained

- Memory
- Movement
- Sensation
- Reasoning
- Morality
- Will
- Consciousness



The brain has largely taken over as an explanation for all of them.

Christian responses

- Our spiritual nature, our ability to relate to God, arise directly from our brains. Nancey Murphy, Fuller Seminary
- Brain and spirit are different things, but interact in subtle and mysterious ways.
- Our mental life arises from the brain, but is an expression of deeper spiritual realities
-

Reflections on brains and souls

We should take “Do not judge” very seriously.

We are deeply connected to the physical world.

The Christian hope lies in resurrection, not in liberation from our bodies.

