

# ON INTELLIGENCE

**A Glimpse of the Diversity in Natural Intelligence**

Abhishek Naik

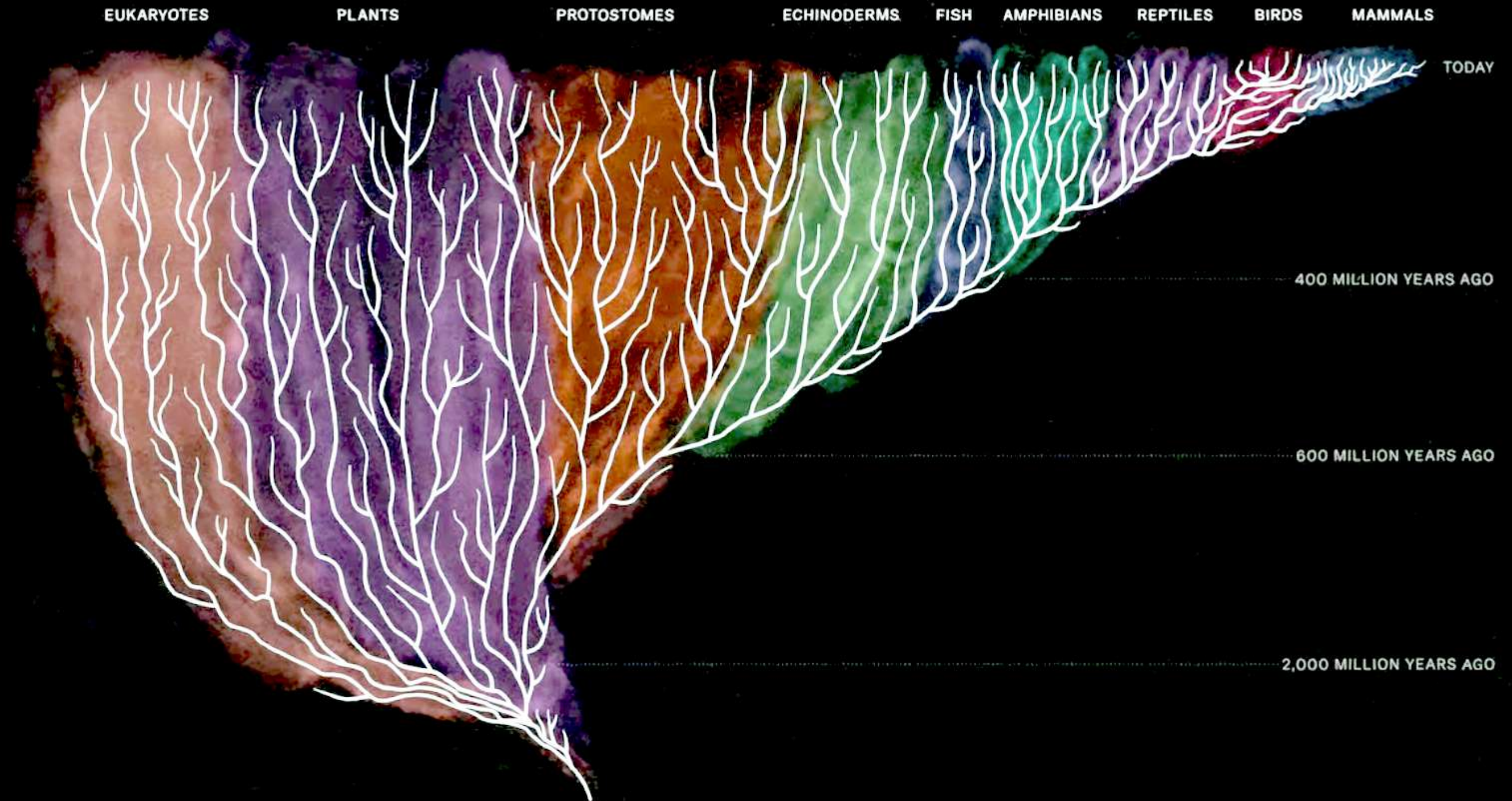
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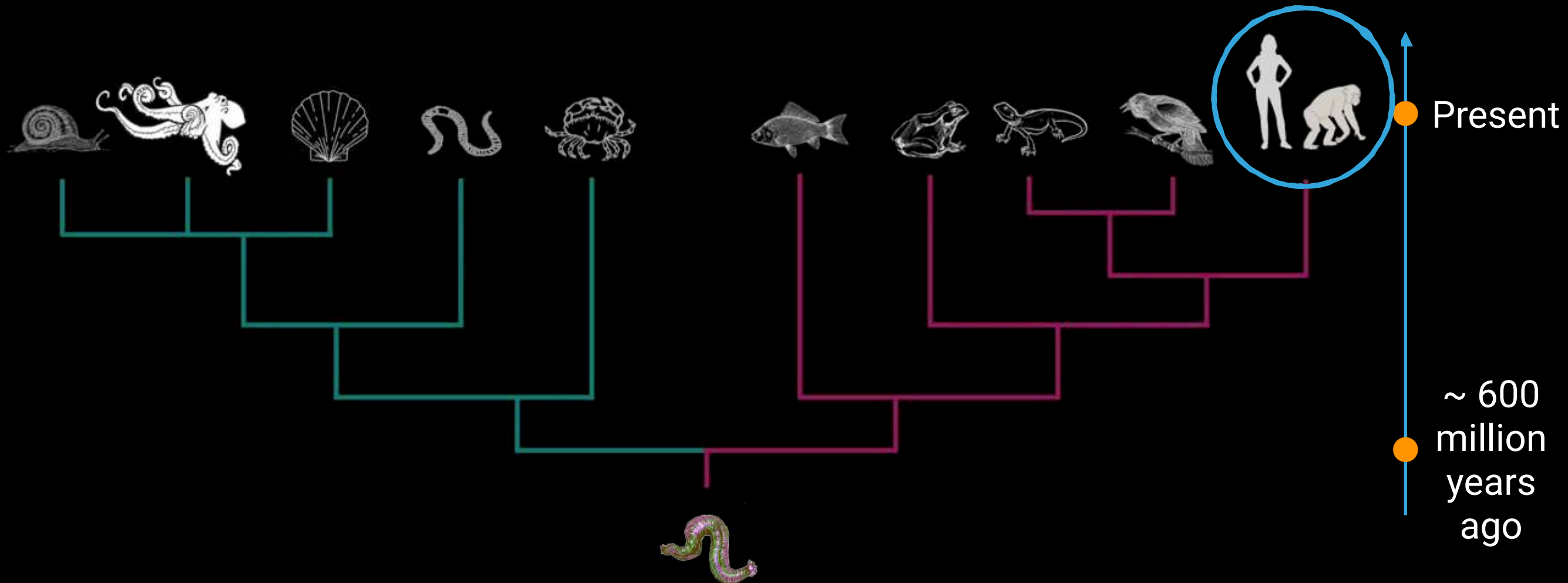
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# EVOLUTIONARY TREE



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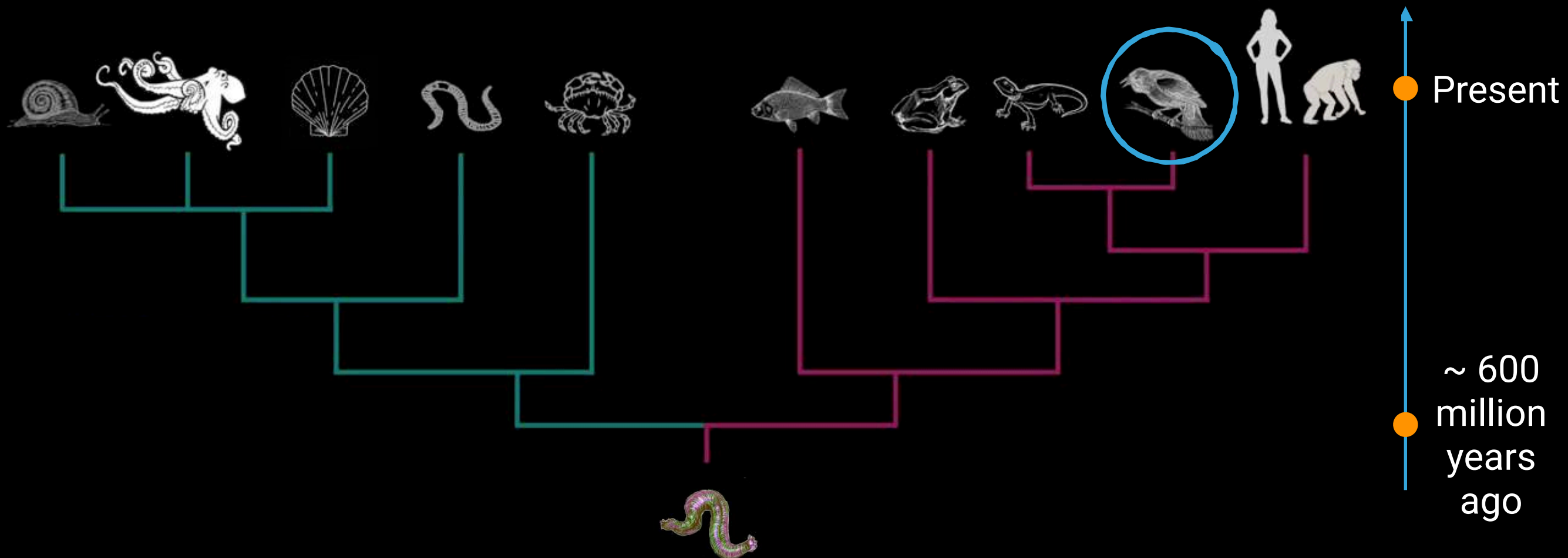
▶ Tool use (problem solving)

▶ Language use (social intelligence)





# EVOLUTIONARY TREE





# BIRDS

- ▶ Tool use
- ▶ Navigational capabilities
- ▶ Memory





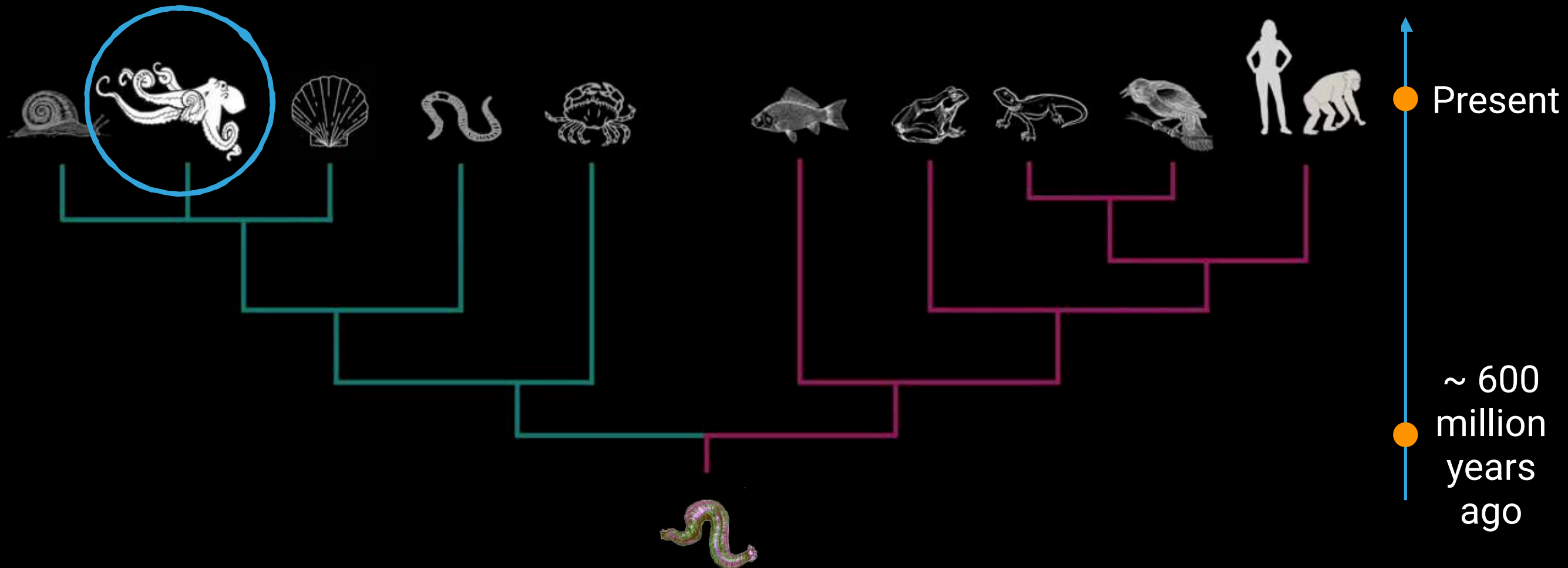
# ALEX, THE PARROT

- ▶ Language use:
  - ▶ Seemed to understand words
  - ▶ Played around with words
- ▶ Would get bored and fool around — suggestive of sophisticated cognitive processes



Non-primate, non-mammalian

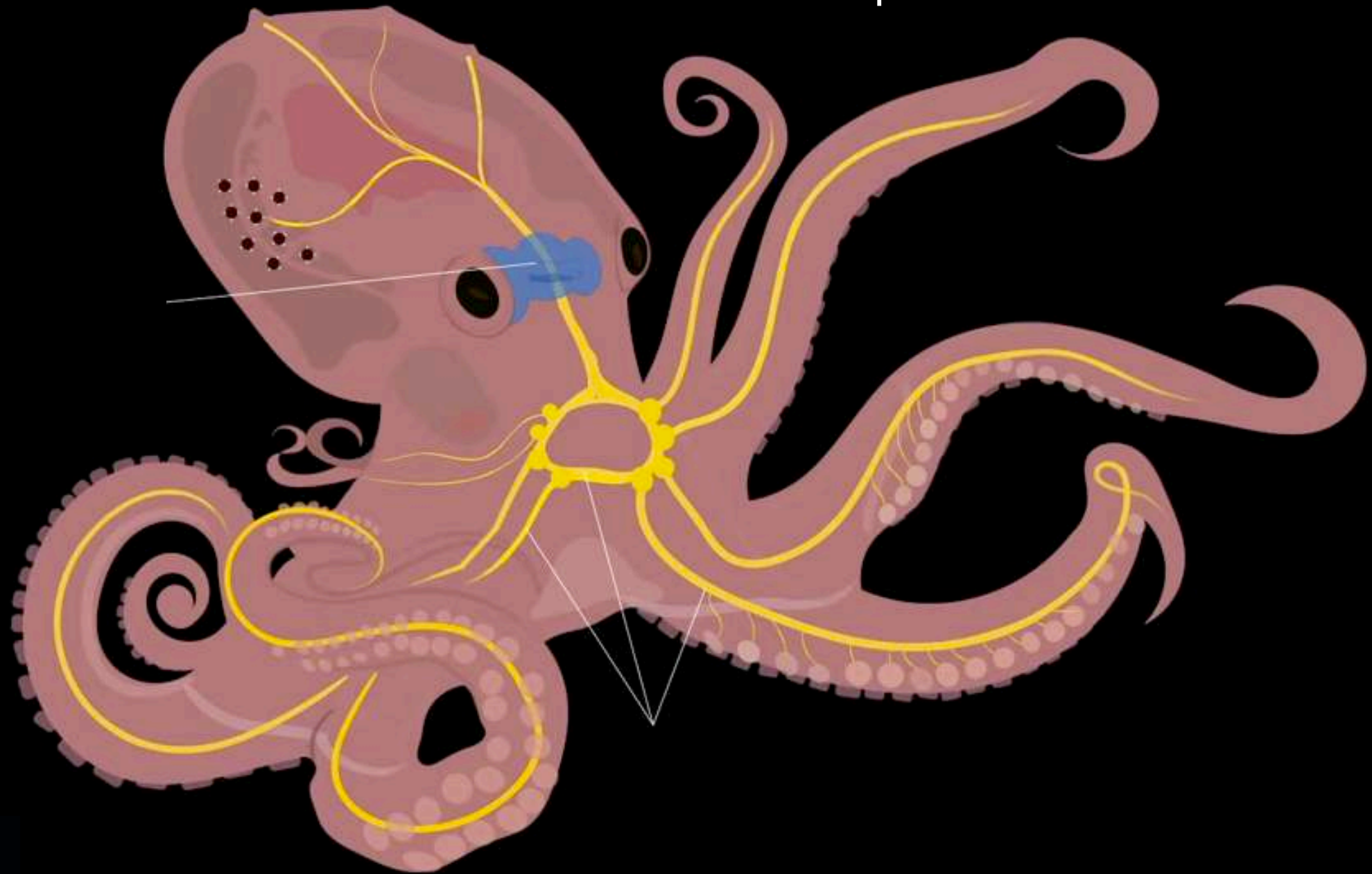
# EVOLUTIONARY TREE



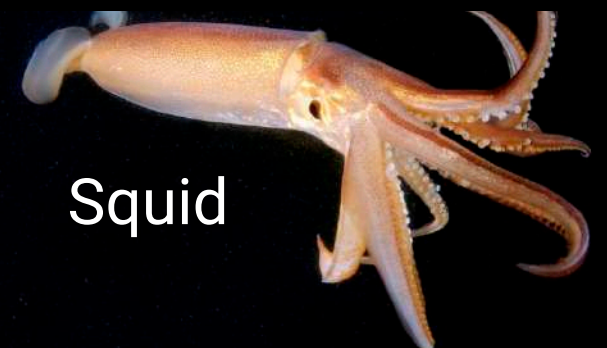


# CEPHALOPODS

Octopus



Cuttlefish

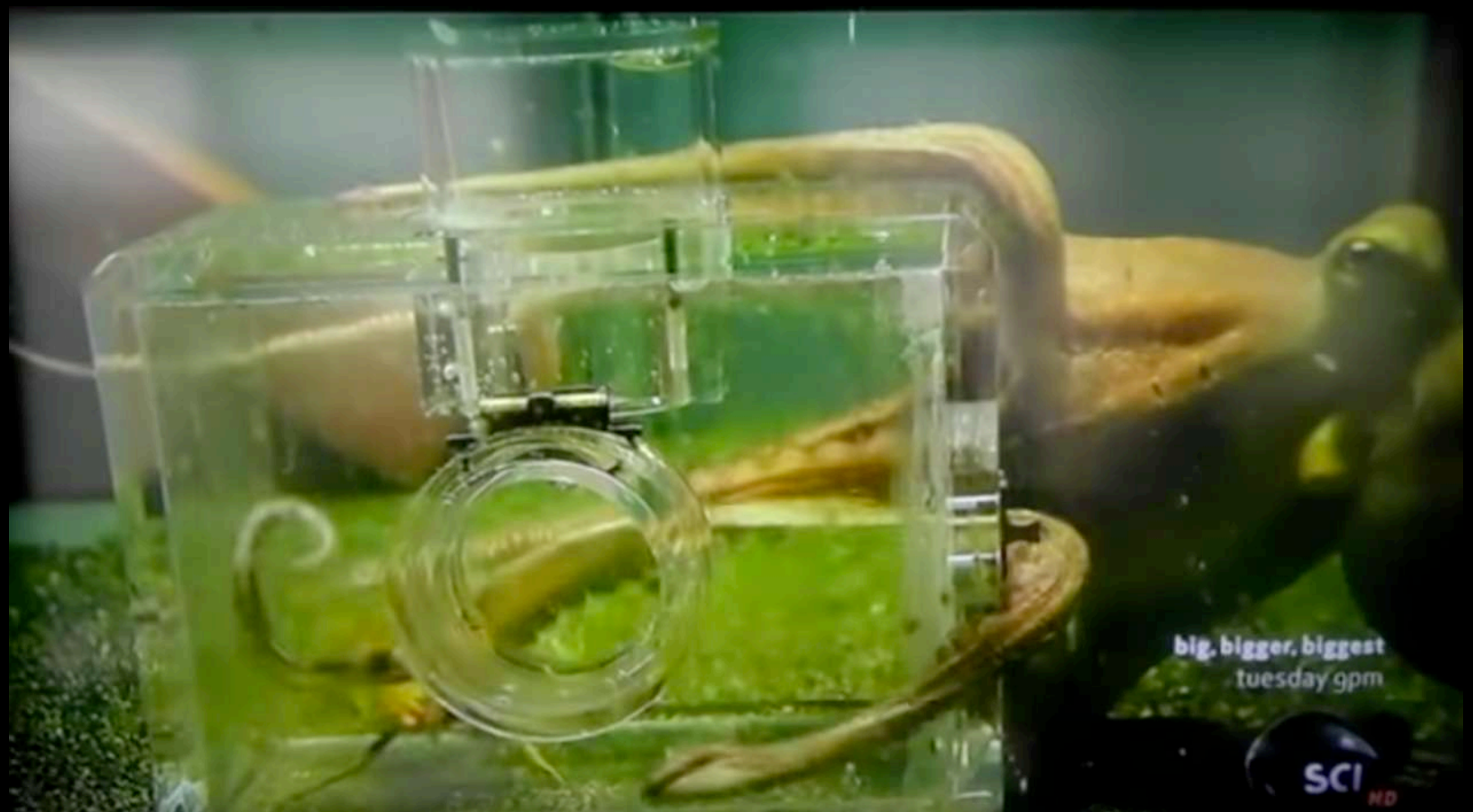


Squid

Credits: [TED](#) - Roger Hanlon, [Smithsonian](#), [MedicalNews](#)

# CEPHALOPODS

- ▶ Learning from observation
- ▶ Memory
- ▶ Sophisticated cognitive processes



Non-primate, non-mammalian, in-vertebrate



CEPHALOPODS

# TOOL USAGE



NATURE



Credits: [Nature on PBS](#)

CEPHALOPODS

# CAMOUFLAGE — SIGNALLING



Credits: [TED - Roger Hanlon](#)



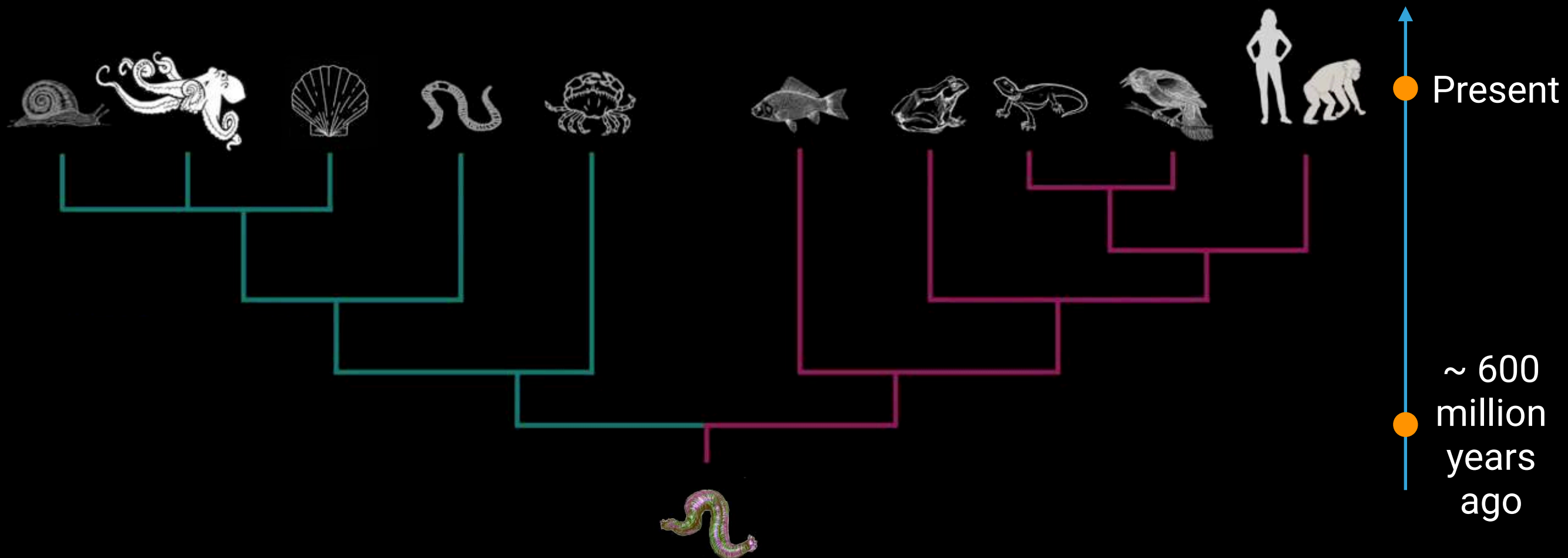
CEPHALOPODS

# CAMOUFLAGE — HIDING



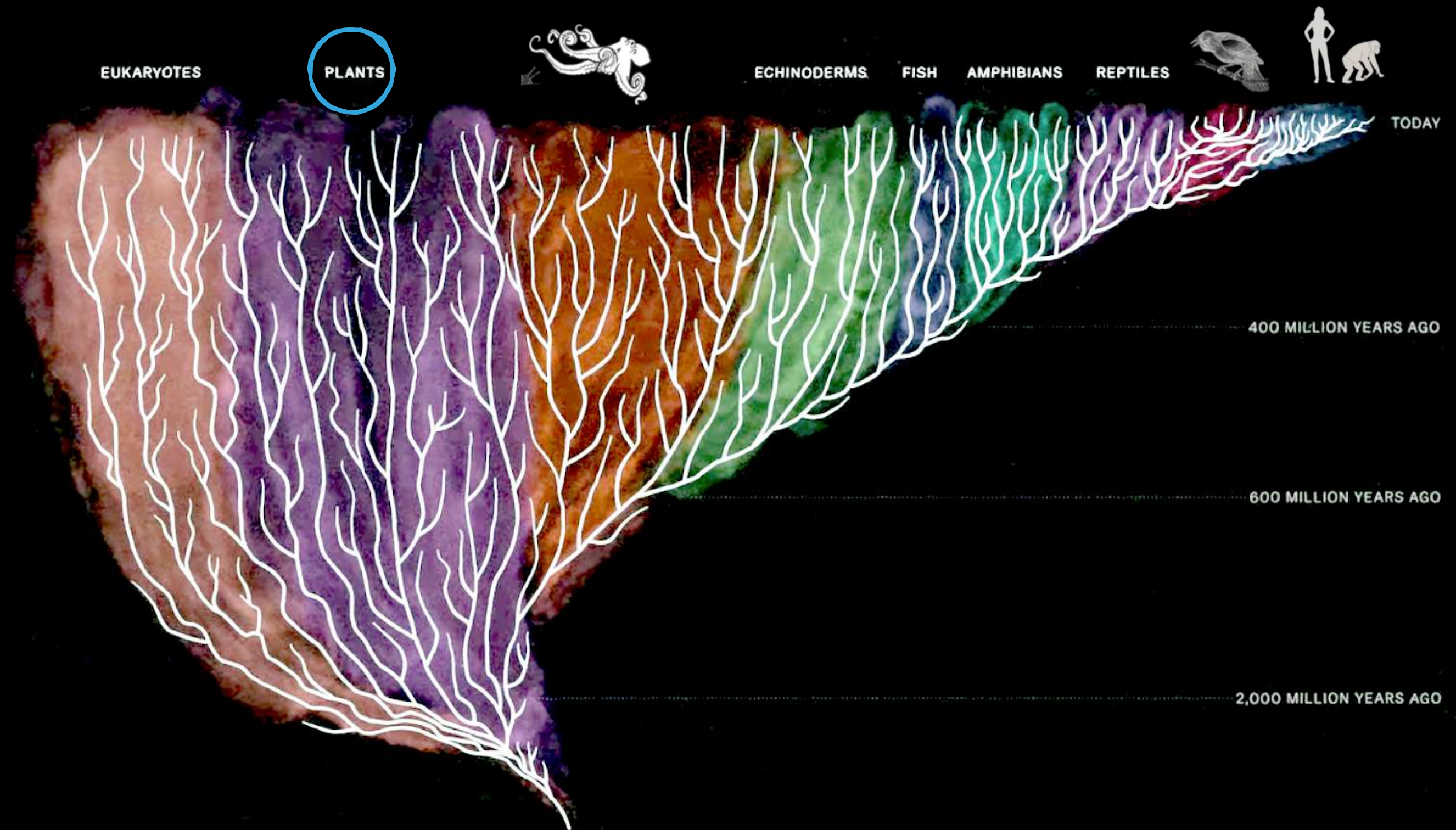
Credits: [TED - Roger Hanlon](#)

# EVOLUTIONARY TREE





# EVOLUTIONARY TREE





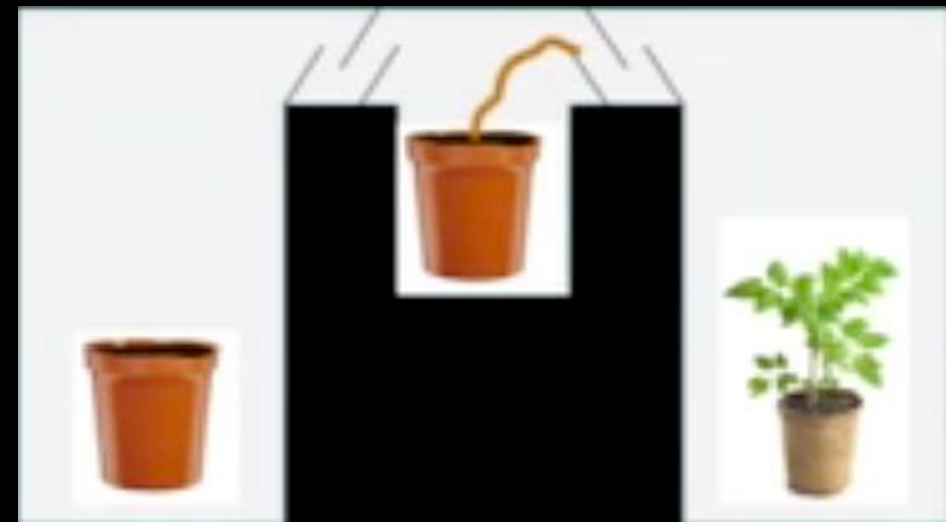
# PLANTS



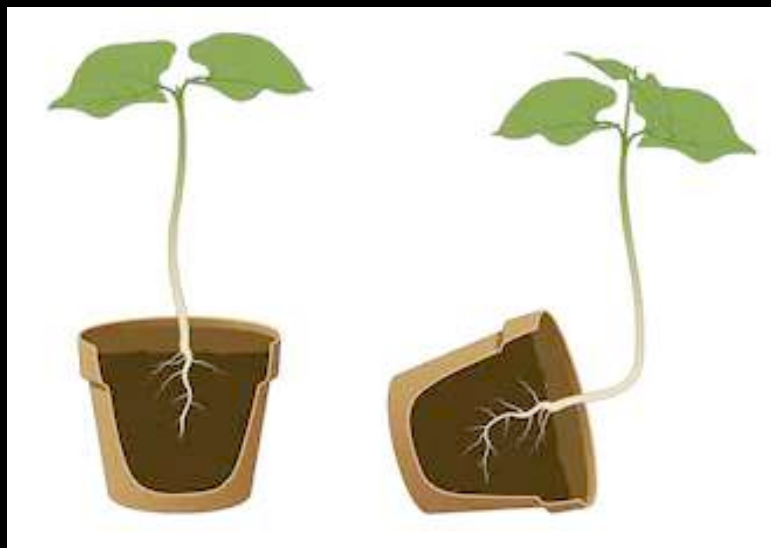
▶ Sight



▶ Smell



▶ Touch



▶ Balance

▶ Memory





# PITFALLS OF HUMAN-CENTRIC EXPERIMENTS





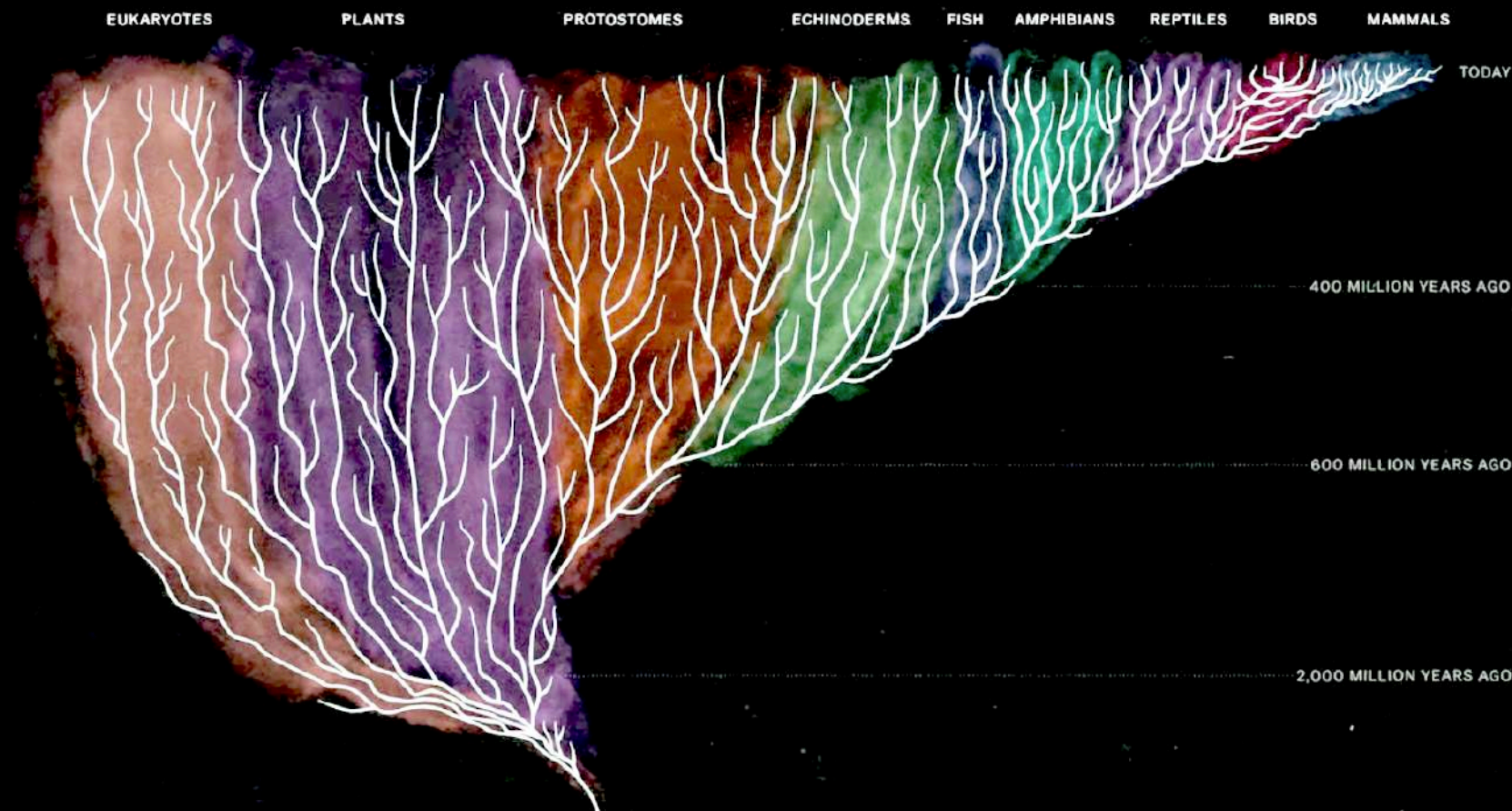
# TAKEAWAY

noble attribute of man, was quite beyond their comprehension.

**Nevertheless the difference in mind between man and the higher animals, great as it is, certainly is one of degree and not of kind.**

We have seen that the senses and intuitions, the various emotions and faculties, such as love, memory, attention,

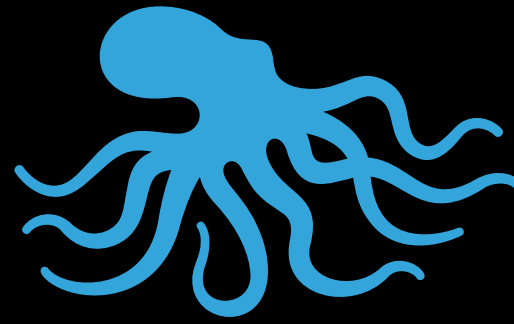
Charles Darwin, *The Descent of Man, and Selection in Relation to Sex*, 1871



Credits: [Explained - Animal Intelligence](#)



# REFERENCES



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- ▶ Godfrey-Smith, P. (2016). *Other Minds: The Octopus, the Sea, and the Deep Origins of Consciousness*. Farrar, Straus and Giroux.
- ▶ Chamovitz, D. (2012). *What a Plant Knows: A Field Guide to the Senses*. Scientific American/Farrar, Straus and Giroux.
- ▶ Vox Media (2019), *Explained: Animal Intelligence*, *Netflix*, 80216752, Season 2, Episode 3 (Accessed: 18/06/20)
- ▶ Hanlon, R. (2019), *The Amazing Brains and Morphing Skin of Octopuses and Other Cephalopods*, TED Talks, YouTube (Accessed: 18/06/20)