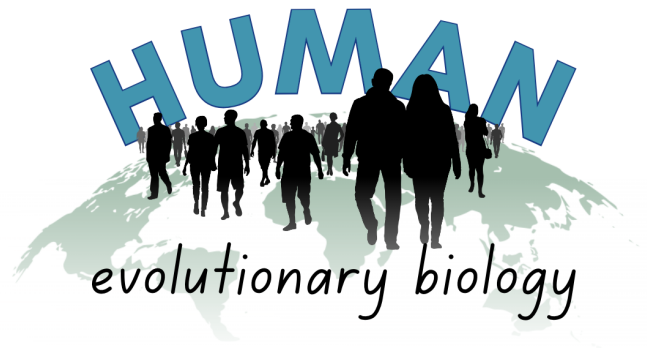


Human Evolutionary Biology

Ancestry



Part 1: Questions based on assigned reading

Instructions: Read your assigned reading and complete the corresponding activity:

Introductory

1. Read [Twins get some 'mystifying' results when they put 5 DNA ancestry kits to the test](#)
2. Summarize what happened when Charlsie and Carly had their DNA tested using multiple direct-to-consumer ancestry tests.
3. About how many of the 3 billion base pairs in the human genome do ancestry tests look at?
4. What is a reference panel? How might the reference panels each direct-to-consumer ancestry testing company uses influence the results? How might the size of the reference panels matter? Why are ancestry tests often more accurate for people with European ancestry?
5. How are regions defined in ancestry analysis? Are they based on genetic structure or something else?

Intermediate

1. Read [What is ancestry? Mathiesen and Scally \(2020\)](#).
2. What does the term “ancestry” usually mean to the general public?
3. What is genealogical ancestry?
4. What is genetic ancestry? What is the fundamental way that genetic ancestry is represented?
5. What is actually being measured in most human genetics research and commercial ancestry analysis? Why is this generally a reasonable proxy for ancestry? What are some conditions under which it might not be?
6. What are reference populations? What are some practical pitfalls in their use in ancestry analysis?

Advanced

1. Read [Genetic similarity versus genetic ancestry groups as sample descriptors in human genetics](#) Coop 2022
2. Is it biologically accurate to talk about different human “populations”? Why or why not?
3. What is the best level of granularity for describing human genetic variation? What problems does this present for “verbal descriptors” or basically geographical labels applied to “ancestry groups?”
4. What are the two major reasons that Coop sees for using labels and why?

5. ~450 years ago, how many genealogical ancestors do you have? What proportion of them did you inherit DNA from? Why is this?
6. About how long ago do all living people share all their genealogical ancestors? How can this be the case but also that different ancestors are weighted in our genetic trees differently based on where our families lived more recently?
7. How are ancestry groups defined? Is their delimitation objective or arbitrary?
8. What are some of the issues that arise from the use geographic labels/descriptors applied to ancestry groups?
9. What are some of the proposed alternatives? What does Coop argue for?