

# Importance of comparative perspectives

Comparison of traits, relationships, or effects across multiple populations or species provides valuable insight to the evolution of biological diversity, and is fundamental to the field of evolutionary anthropology. A comparative approach can help answer questions about human evolution by revealing some traits that are unique to *Homo sapiens*, and others that are shared via distant common ancestors, allowing us to better understand our own species and how we fit into the larger web of life on Earth. Comparative studies have seemingly infinite applications, including:

1. Investigating how sleep patterns vary between humans and other primates, and across various human cultures (Nunn & Samson 2018).
2. Contextualizing the "uniqueness" of *Homo sapiens* by identifying traits that fall within predicted boundaries based on comparison across primates (Miller et al. 2019a).
3. Investigating the evolution of the human brain through phylogenetic comparative analysis (Miller et al. 2019b).
4. Understanding relationships between parasites, vectors, and hosts through the field of evolutionary medicine (Nunn 2018).

The phylogenetic relationship between species affects patterns of traits across those species, with more closely-related species more likely to share traits. Therefore, comparative approaches rely on **phylogenetic analysis** to distinguish between relationships that are associated with phylogeny and those that have other causes.

## Resources for phylogenetic analysis:

Upham et al. 2019 provides an updated, molecular-based phylogeny of mammal species, and links to a website where trees can easily be downloaded.

Revell 2011 describes the "phytools" package for conducting phylogenetic analysis in R.

Charlie's book *The Comparative Approach in Evolutionary Anthropology and Biology* serves as an introduction to phylogenetic comparative methods.