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Abstract

The primary focus of my summer project is to combine agent-based modeling with phylogenetic methods to investigate how different modes of transmitting traits between individuals within populations affect the cultural history of the traits. Specifically, I want to investigate whether traits that individuals acquire vertically (*i.e.* from their parents), leave a stronger phylogenetic signal than traits that are acquired horizontally (*i.e.* from peers), or obliquely (*i.e.* from individuals in the parent generation who are not the biological parents). To this end, I will develop an agent-based simulation modeling the interactions between individuals and therefore the transmission of cultural traits via the different transmission modes; the simulation will be based on documented accounts of traits transmission between individuals within traditional, small-scale populations. Using size-dependent splitting events, the populations will separate and eventually form a phylogenetic tree. This will allow me to explore the effects of other factors, such as the influence of different migration rates, on the final trait distribution at the terminal branches of the phylogenetic tree. I will then apply standard methods of phylogenetic comparative analysis to assess the degree of phylogenetic signal in the different traits, using as input data the phylogenetic tree and the distribution of the traits at the tips of the tree produced by the agent-based simulation. The results of the phylogenetic comparative analyses will provide insights into the processes that shape the observed distribution of the traits, and this will likely have implications for our understanding of human cultural diversity.