Results parrot mimicry

November 11, 2022

We scored the vocal mimicry ability of 398 species (for the full distribution see Figure 1). 137 of showed at least one mimic. [Do we want to say something about the ancestral state reconstrution depicted in Figure 1?]

We ran four models to test the total effect of longevity, relative brain size, sociality and body size on the probability that a species can mimic. All variables had a positive total effect, although the effect of relative brain size was highly uncertain (see Figure 2).

We recorded the number of unique mimics that an individual produced for 843 individuals across 136 species. We ran four models to test the total effect of longevity, relative brain size, sociality and body size on the number of unique mimics that an individual produced in a video. Longevity had no effect, relative brain size had a highly uncertain effect, while sociality and body size had a small positive effect (see Figure 3).

We also tested the influence of the four variable on the unique number of words an individual produced in a video (see Figure 4). Longevity had a clear total effect. Relative brain size had no clear effect. Sociality and body size had a small and uncertain effect.

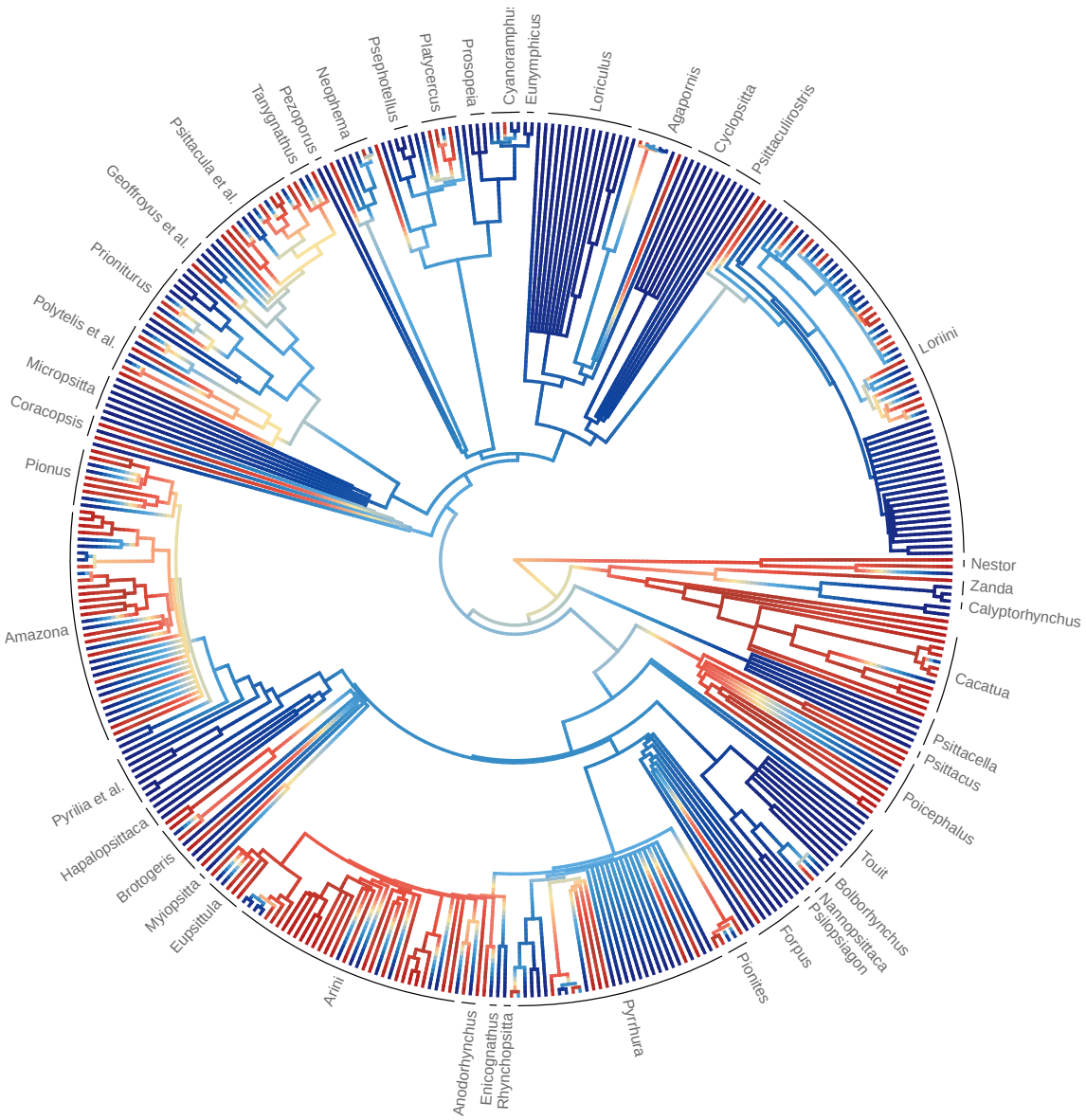

Figure 1: Phylogenetic tree of all parrots species for which vocal mimicry was assessed. Colours represent the ancestral state reconstruction of vocal mimicry ranging from blue = no vocal mimicry detected to red = vocal mimicry detected.

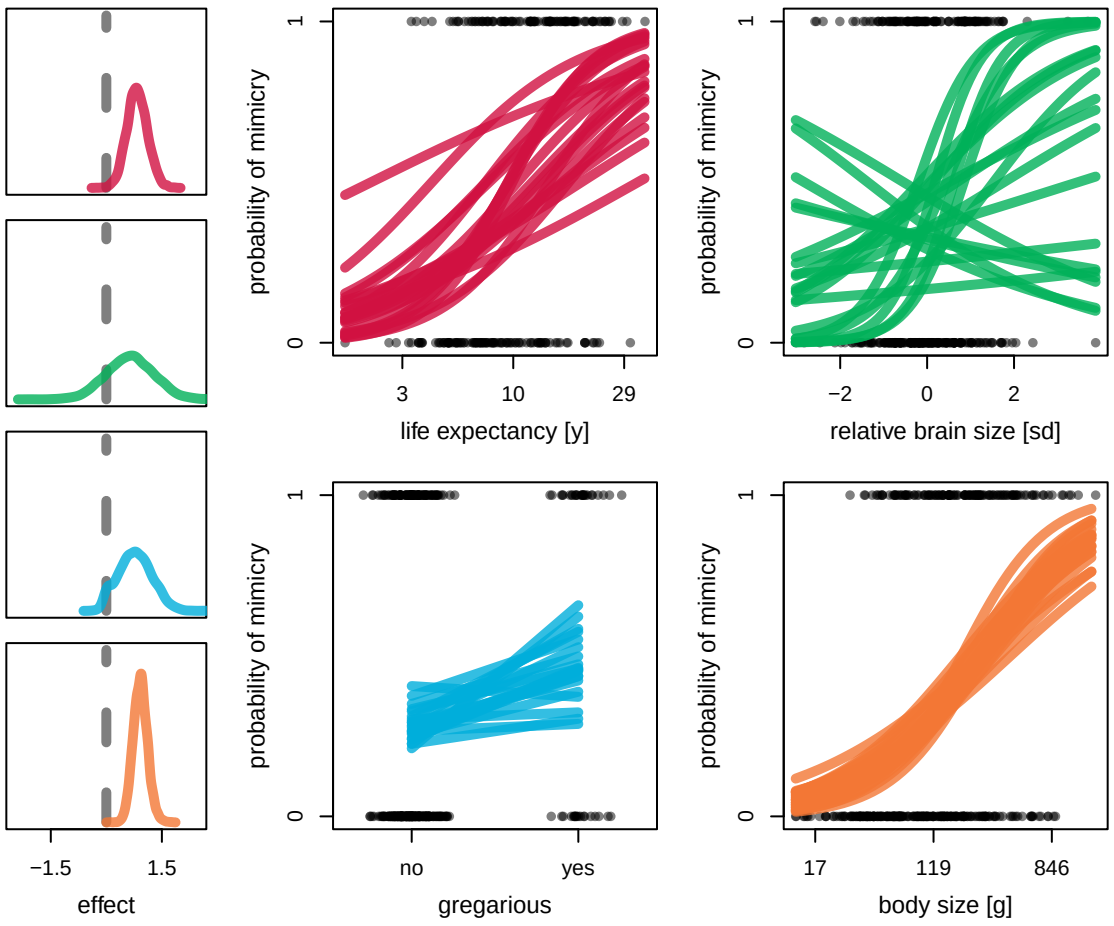

Figure 2: Variables influencing the probability of a species being able to mimic. Lefthand side: posterior densities of the effect of longevity (red), relative brain size (green), gregariousness (blue) and body size (orange). For gregariousness the contrast between a non-gregarious and a gregarious species is shown. For all other variables the slope is shown. Righthand side: scatterplots of the raw data (grey) and 20 posterior predictions (coloured lines) per variable.

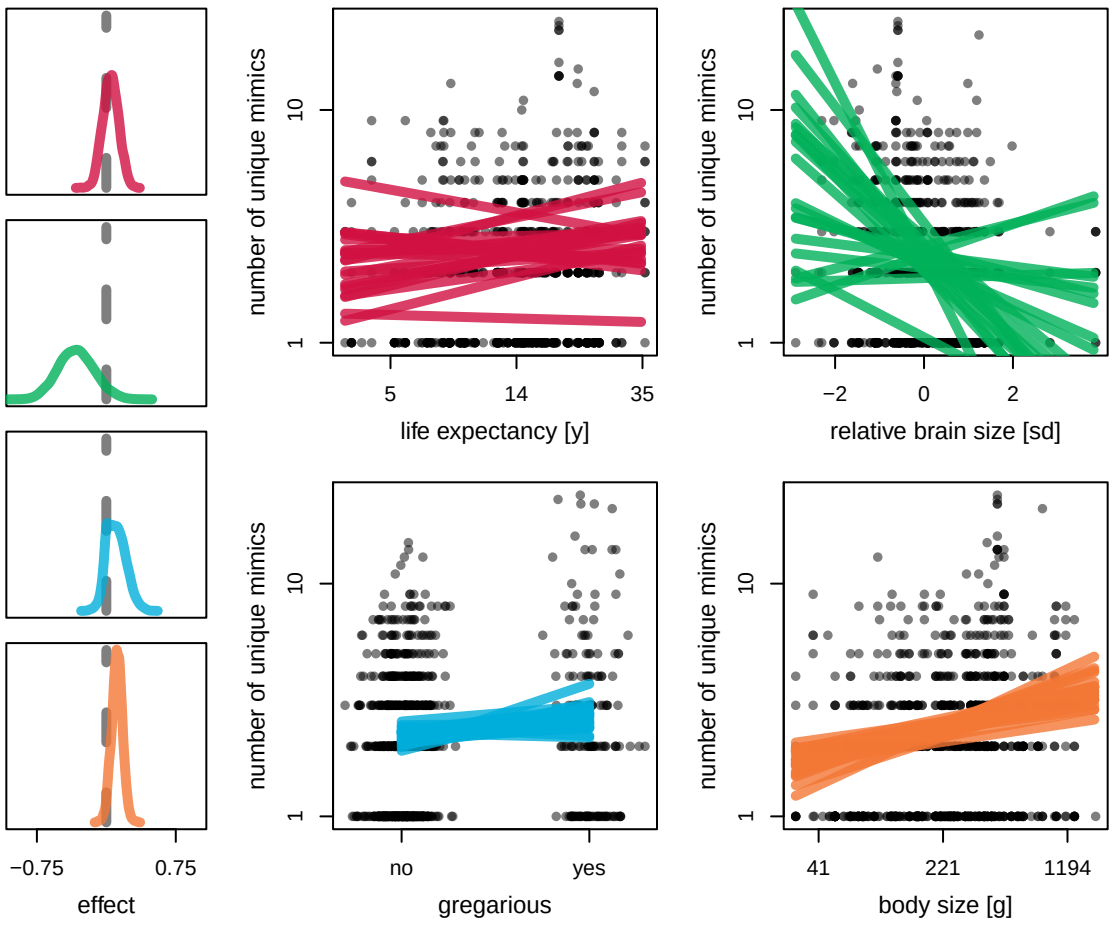

Figure 3: Variables influencing the number of mimics an individual produced in a video. Lefthand side: posterior densities of the effect of longevity (red), relative brain size (green), gregariousness (blue) and body size (orange). For gregariousness the contrast between a non-gregarious and a gregarious species is shown. For all other variables the slope is shown. Righthand side: scatterplots of the raw data (grey) and 20 posterior predictions (coloured lines) per variable.

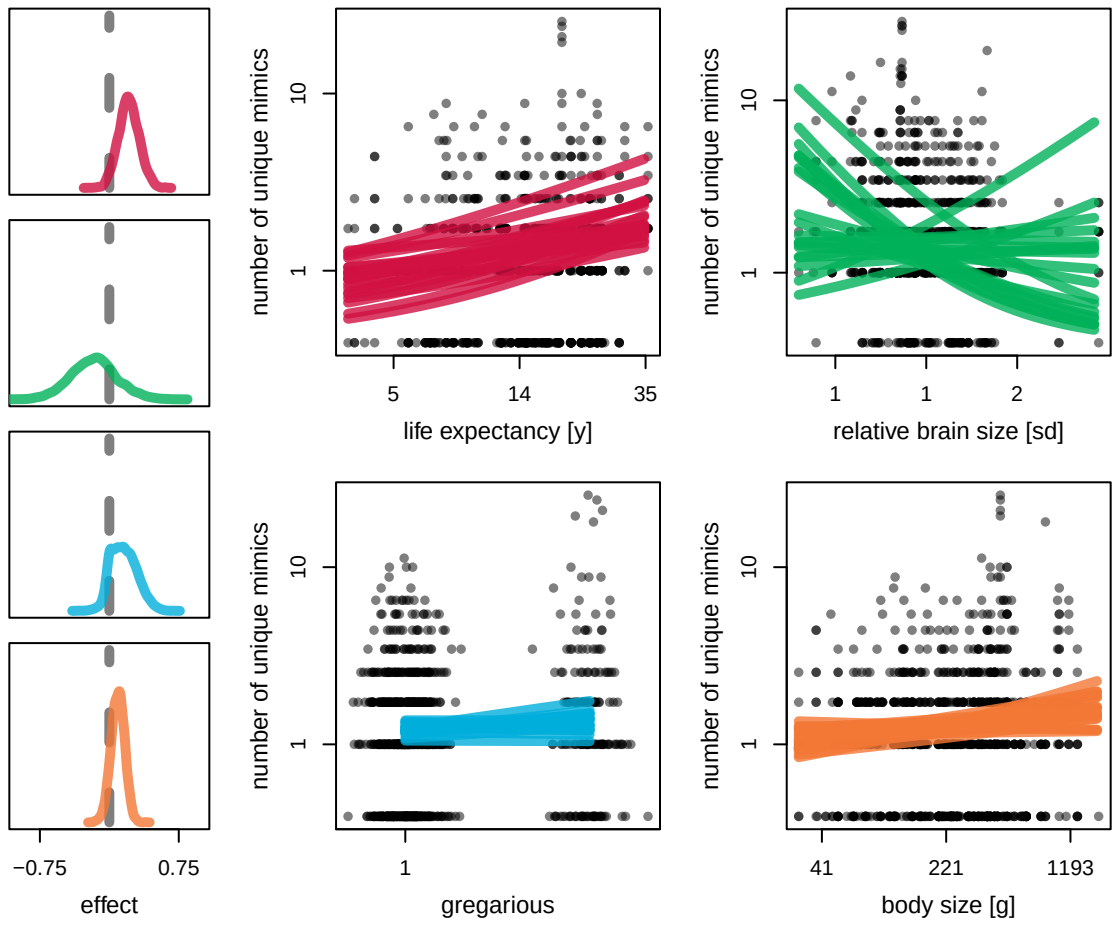

Figure 4: Variables influencing the number of words an individual produced in a video. Lefthand side: posterior densities of the effect of longevity (red), relative brain size (green), gregariousness (blue) and body size (orange). For gregariousness the contrast between a non-gregarious and a gregarious species is shown. For all other variables the slope is shown. Righthand side: scatterplots of the raw data (grey) and 20 posterior predictions (coloured lines) per variable.