Gammon, D.E. 2013. How is model selection determined in a vocal mimic?: Tests of five hypotheses. *Behaviour* 150:1375-1397

Many animal species imitate the sounds of other species, but we know little about why vocal mimics copy some species while failing to copy other species, i.e., 'model selection'. In this observational study of free-living northern mockingbirds (*Mimus polyglottos*), I tested five hypotheses of model selection: (1) Proximity hypothesis: preferential imitation of species found in close proximity to the vocal mimic, (2) Aggression hypothesis: preferential imitation of species with which the mimic interacts aggressively, (3) Passive sampling hypothesis: preferential imitation of species heard frequently by the mimic, (4) Acoustic similarity hypothesis: preferential imitation of species whose sounds are acoustically similar to the non-imitative songs of the vocal mimic and (5) Alarm hypothesis: preferential imitation of alarm-associated vocalisations. The data supported only the acoustic similarity hypothesis. Given that this hypothesis has been supported in two additional mimicking lineages, it suggests a potential non-adaptive explanation for the evolution of vocal mimicry. Species that learn vocalisations are already predisposed toward learning sounds with key acoustic characteristics. Whenever natural selection favours a widening of the auditory template that guides model selection, vocal imitation of heterospecifics becomes more likely because of 'learning mistakes'.