

What's in a Song?

Although humans are the only primates who learn to speak and to comprehend speech, we would be in good company in the avian world: there, each of about 4,000 species of bird is able to pick up its own species' characteristic warbles. By investigating the neural basis of this example of motor learning in songbirds, UC San Francisco neuroscientist Allison Doupe and her lab members are deciphering the brain mechanisms that underlie vocal learning and what happens when those mechanisms break down.

During her TEDxCaltech talk, [Mimi Kao](#)—one of Doupe's postdoctoral fellows—described the team's research into the specialized

areas of the bird brain known collectively (and fittingly) as the song system, and how this system allows a bird to replicate the complicated song it hears others of its species sing.

Even social motivation plays a role. When Doupe's team studied a juvenile male zebra finch in the process of learning his song, they found that, left on his own, he made the expected mistakes of a young'un—stopping part way through the song or stuttering through it. In the presence of a female bird, however, the suddenly motivated finch was able to reliably produce a good



version of the song: “Like teenagers everywhere,” Kao said, “this bird knew more than he was telling us.” —*KF*