The Incredible Wonder of Female Bird Vocalisations

The many varieties of beautiful and complex vocalisations that birds produced have historically been explained by female mate choice. Female birds only mate with males of “good” quality, and one way to assess this quality is by song. If a male bird has the physical capabilities to produce long, complex or fast paced songs, he likely has ‘good’ genes that females want to pass on to their offspring. In turn, males adapt their songs to appeal to females and sing to attract them and so, bird song has evolved into the many beautiful varieties we hear today. This theory of sexual selection acting on males as an explanation for why birds sing is correct. However, it only provides 50% of the story. For hundreds of years song in female birds was either overlooked or ignored, probably because female behaviours are much more subtle than males. Yet, as a result of a surge of research led by female scientists, we now know that song in female songbirds is very common! However, unlike males, female birds usually do not need to attract mates. Thus, the theory of sexual selection acting on males as a capture-all explanation for why birds sing is not correct. And so, we are left with fundamental questions: 1. Why do female birds sing? and 2. How did song evolve in females?

The Superb Lyrebird (Menura novaehollandiae) provides a perfect case study for how the male-biased perspective of birdsong has shaped what we know about bird vocalisations and behaviour. With their lyre shaped tails, coordinated song and dance displays, coupled with their attention-grabbing ability to mimic diverse sounds, male lyrebirds are a perfect example of sexual selection acting on males. By contrast, female lyrebirds lack the fancy tail and are much more subtle in their behaviours. These inconspicuous features, coupled with the assumption that female birds do not sing meant that the incredible vocal capabilities of female lyrebirds were almost entirely overlooked until recently. However, female lyrebirds have an incredible array of vocalisations! They use multiple alarm calls, have their own unique song, and, just like males, they are extraordinary vocal mimics! But again, female lyrebirds do not sing to attract mates, so why do they possess these vocalisations?

It appears that the unique behavioural ecology of females is likely acting as a driver of their incredible vocal capabilities. Firstly, females are the sole providers of parental care and have a very slow life history. Females lay one egg per season and from egg, to chick to fledging takes over 3 months! This long period of time spent raising and defending young has resulted in unique pressures on females that have favoured the evolution of their incredible vocalisations. For example, female lyrebirds are very territorial and will attack other females and their offspring. Such interactions are incredibly costly and so, to avoid conflict, females likely sing as a signal to other females to stay away. Additionally, predation rates of eggs and chicks are incredibly high (as much as 90% at some sites!) and females encounter predators frequently during the time it takes to raise their chick. This risk of predation provides another explanation for why female lyrebirds mimic! We have found that females use mimicry at the nest almost exclusively in the context of predators and that they have the ability to adjust the amount and type of mimicry they use depending on the predator they are faced with! Thus, these mimetic vocalisations are not merely pretty accomplishments, but play a very important role in the survival of female lyrebirds and their offspring of both sexes.

The story of female birdsong and its recent rise to fame serves as a reminder that while science should be objective, it is not immune to bias and assumption. Who we are, where we live in the world and our experiences shape the questions that we ask. Thus, the more diversity of people, questions, and experiences that we can have in the scientific landscape (bird watchers included!) the better our understanding of the natural world will be. It also serves as a reminder to never assume that something you see in nature is well known or documented! Document and talk about the behaviours you see in birds that you observe and take the time to stop and watch even subtle
behaviours. Not only are these observations incredibly important for increasing our general understanding of bird behaviour, but it is also possible to contribute knowledge previously ‘unknown’ to science. There is still so much to discover about the world of birds, and we all have something to contribute.

Dr Victoria Austin
Flinders University

Further reading


Media

Episode 3, ABC Off Track Podcast: Sex, Lyres and Audio Tape: https://www.abc.net.au/radionational/programs/offtrack/lyrebird-three/11225432


Documentary: David Attenborough’s Wonder of Song – out in the UK and US but hopefully in Australia soon!

Documentary: Wild Australia: After the Fires – ABC iview
The Galapagos Islands

Following his entertaining talk at our June Club Night, Dick Jenkin has agreed to write this article for the e-News accompanied by some of his excellent photographs. Enjoy!

Visiting the Galapagos Islands had always been on both Lynn and my bucket list from a very early age. Over the years watching various documentaries only enforced that desire to visit the islands of the birth of Darwin’s Theory of Evolution.

In May 2013, after researching the best times to visit; weatherwise, to have the best chance of seeing all the 60 resident bird species (29 endemic), the best itinerary and boat to achieve our goal, our dreams came true.

The boat we travelled on was the Tip Top IV (16px) and unbeknownst to us at the time, we were part of a Bird Quest trip, and the leaders were none other than Andy Swash and his wife, Jill. Both are professional photographers and Andy co-authored with Rob Still, the guidebook that we had bought: “Birds, Mammals, and Reptiles of the Galapagos Islands.”

We managed to see all and photograph most of the 60 resident species. The Mangrove Finch was missed as it is now believed to be extinct in the wild. The Darwinian, aka Galapagos Finches, are part of the tanager family and not related to the true finches at all. Their ancestor and closest relative is the Grassquit.

At least 13 species and many sub-species have adapted by diet and bill size to live in different niches and on different islands. Different species co-exist on some islands, they hybridise.
In fact, a new species has emerged only 6 years ago!


We mostly travelled by night and had on shore visits morning and afternoon, usually 3 hours each.

Lunch was always on the boat, and you could snorkel, swim or kayak in the down time.

The birds and reptiles were amazing and some of the highlights were:

. Spending time on Espanola, the breeding island for the Waved Albatross, and having close encounters with these magnificent birds.

. Viewing a Woodpecker Finch breaking off a twig and using it as a toll to prise out caterpillars from under the bark.

. Snorkelling and seeing 2 pairs of legs swimming in a circular motion and then discovering that they belong to a pair of Flightless Cormorants amid a courtship display.

. Blue-footed Boobies dancing.

. A male Magnificent Frigatebird with inflated red pouch.

. A close encounter with a Galapagos Tortoise.

. Masses of Marine Iguanas lazing around and snorting salt!

Dick Jenkin