My voice is my identity
Imitator Bird

Sanket Raut

Photo: J M Garg

Figure1*: Picture of an oriental magpie Robin clicked in Kolkata*

It was the month of April when I was woken up by the sound of chicks of a hen. Now, since I live in a village, you might think there is nothing surprising about this. But, in fact, it was quite astonishing. The sound of the chicks was coming from the upper part of the large tamarind tree near my house. It is impossible for chicks to reach such a height. Upon closer observation, I realized that the sound was actually a mimicry of chick calls by a male bird of the Oriental Magpie-Robin species. I continued to listen to this sound for the next few days.

You might be surprised to learn about this bird capable of mimicry, but the act of mimicry is quite common in the animal world. In one of my previous articles 'Dhokebaaz Titliyaan' (Sandarbh, Issue 131, November-December 2020), I wrote about butterflies that mimic the colours and habits of other species to deceive. At the end of that article, I mentioned that the series of mimicry does not end there. By extending the same in this article, we are highlighting the expertise of birds in mimicking different sounds. In this way, we are going to add a

dimension of sound into the world of mimicry.

In birdwatching, sounds play a very important role because birds are often heard more than they are seen. Whether in dense forests or open fields, the far-reaching calls of birds indicate their presence. Therefore, having knowledge of bird calls and being able to identify birds by their sounds is essential for birdwatching. While observing, one also gets to witness many fascinating behaviours, especially from species that are known for mimicry.

Drongo Misleads

Similar to the Oriental Magpie-Robin, the Black Drongo, which is also commonly found around us, is a bird that mimics sounds. In India, there are nine species in the Drongo family (Dicruridae), including the Ashy Drongo and the White-bellied Drongo, which are observed in our surroundings. All these species are skilled at imitating sounds. One species of this family, the Greater Racket-tailed Drongo, is particularly famous for perfectly mimicking the calls of other birds. A detailed study conducted in the forests of southern India focused on this talent of the Greater Racket-tailed Drongo. In this study, the drongo was observed imitating the calls of nearly 40 bird species and some other animals. This bird is found throughout India, except for the north western region. Generally, it inhabits dense trees. During one bird survey, in which I also participated, a Greater Racket-tailed Drongo attempted to mislead us by mimicking the call of a Common Iora.

The Rise of a Voice

Acoustic signals are genetically encoded in organisms. However, some organisms, in order to learn the voice articulation of their own species, must first absorb the acoustic information (patterns or templates of voices) and then practice them. Along with mammals such as humans, bats, whales, and elephants, a few birds are also organisms that learn to produce sounds by adopting acoustic templates. In these species, voice articulation is a learned behaviour. In many bird species, the chicks listen to the voices of their parents, that is, they acquire the acoustic templates of their parents and, through practice, try to imitate those sounds. If you have chickens around your house, you might notice 3–4 month-old male chicks trying to crow like adult roosters. Watching their clumsy attempts may make you laugh, but after some days of practice, they soon master it.

While acquiring the acoustic templates of their parents' voices, birds are also listening to the calls of other species around them. Many species are chirping in the surroundings. Along with some mammals and humans, birds also hear the acoustic templates of artificial sounds created by us. Because of this, some birds, apart from imitating their parents' voices, also attempt to reproduce other surrounding sounds. This means that for a drongo living near your home, the likelihood of it producing the sound of a penguin is very low, because acquiring the acoustic template of a penguin is almost impossible for it. However, due to the diversity of sounds in the environment, the imitations made by members of the same bird species may also show variations. For example, it is possible that among two racket-tailed drongos living in the same forest, one may mimic the call of a crow, while the other may reproduce the call of a common iora. For birds like the drongo, learning to produce different sounds is like a playful activity.

The structure of the vocal organ of birds is slightly different from that of mammals. Most birds have a special organ for producing sound located below the trachea (wind pipe), called the syrinx. Using the complexity of special vocal membranes present in it, birds can easily produce some complex sounds. All birds produce sounds through the syrinx, but even then, the bird species capable of mimicry are limited. Moreover, in these species, a special structure (neuron cluster) of groups of neurons is present in the brain of birds. Because of this, these birds are able to grasp sound patterns in a better way and practice mimicking as many sounds as possible.

***Figure** 2: A racket-tailed drongo sitting on a tree branch. These birds are experts at imitating the calls of many other bird species.*

Classification of Mimicry

The mimicry performed by bird species can be divided into two groups — flexible mimicry and incidental mimicry. Species that perform flexible mimicry are those which often mimic different kinds of sounds and continue to learn new sounds for a long time, such as the drongo. Generally, the birds of such species are naturally and instinctively found to mimic the calls of many other species. On the other hand, species that mimic sounds only in specific situations and in a limited range of calls are categorized as species performing incidental mimicry. For example, brood parasitic species like the koel (which lay their eggs in the nests of other birds) mimic only the calls of their host species.

Why Mimicry?

Research is still ongoing on why birds mimic sounds. However, the main reasons that seem to emerge are: to secure food sources, to attract mates, and simply to learn.

In some studies, conducted abroad, it was observed that certain bird species mimic the calls of predators to drive other birds away from bird feeders (containers kept for feeding birds). When the other birds flee in fear of predators, these mimicking birds enjoy the feast alone.In Africa's Kalahari Desert, the Fork-tailed Drongo deceives a mongoose-like animal called the meerkat. When a group of meerkats is foraging, one member keeps watch and gives an alarm call if danger appears. As soon as that sentinel meerkat gives a warning, all the other members of the group rush back into their burrows. The fork-tailed drongo takes advantage of this behaviour. Seizing the opportunity, it mimics the meerkats' alarm call, making all the meerkats think there is danger. They immediately retreat into their burrows, and in the hurry, the food left behind is taken away by the drongo.

During the rainy season, once I saw on the Anjaneri hills of Nashik, a Red-vented Bulbul feeding a brood-parasitic bird called the Pied Cuckoo. The chick of the cuckoo was larger in size than the bulbul's own chicks, yet the bulbul was feeding it. Why was the bulbul feeding it? Similarly, why does a crow feed the chicks of the koel, even though koel chicks have white spots on their bodies which crow chicks do not have? Perhaps this happens because koel chicks imitate the begging calls (sounds made by chicks to demand food) of the host species' chicks. Therefore, the host bird, responding to that sound, feeds the brood-parasitic chicks with the food it has brought. This behaviour of the

host species is called acoustic stimulation. Note that in the nourishment of chicks, the begging call is very important. The louder the begging call, the greater the chances of the chick receiving food.

Since sound is a way to attract females in many species, the more sounds a male can produce, the higher the chances of attracting a female. And perhaps this is why many birds try to mimic the calls of other species. For example, the Sykes's Short-toed Lark, a bird living in grassy fields, can produce the calls of 15 to 20 species in just one minute to attract a female. During a study on the Lyrebird in Australia, it was found that the song sung by the male to attract the female contained a variety of sounds from the mobbing calls of different species to the fluttering sounds of the wings of other birds. The sounds made by some birds in groups to warn others when a predator is nearby being called mobbing calls. Now, what benefit does the Lyrebird get by imitating such sounds? If a female, uninterested, is about to go away, then due to the fear of a predator (as indicated by the mobbing calls), she may linger there a little longer. This gives the male more time to persuade her.

To protect its chicks, a bird may mimic the call of a predator. This creates the impression that a dangerous predator is already present in the area. As a result, any bird arriving there with the intention of hunting may leave immediately. Since birds of prey, such as hawks, are highly territorial, they do not tolerate other predators, even of their own species, within their territory. If they sense that a rival is present in the area, they may become disturbed and decide to move away.

Therefore, by imitating the call of a predatory bird, not only predatory birds but also other rivals that come to build nests in that area may leave out of fear and move to another place.

Due to this trick, the competition for obtaining food resources in that region will surely be reduced. By imitating the calls of different birds, a bird can also create the impression that many birds are present at that place, ready to unite and attack together. This strategy too can drive predatory birds away from that area.

How to Tell If It's Mimicry?

Now we know that to become skilled in mimicry, rigorous practice is required. We also know that the voices of many birds are genetically encoded. Therefore, the pitch or tonal quality of the voice of each bird species is unique.

Since the call of the Drongo has a metallic, jingling quality, this metallic sound is also noticeable in its imitations. Recording the calls of birds can be a good way to detect imitation. If the bird calls are recorded and their spectrograms (visual representations of sound frequencies) are compared, then the differences between the original and the imitation can be identified. This makes it possible to recognize the mimicking bird as well.

I have often heard the Black Drongo imitating the call of a Shikra (hawk). But while mimicking, it usually adds an extra note at the end of its call, which is not present in the real Shikra's call. This makes it possible to identify the mimic bird. A mimic bird can also be recognized if it makes a call at the wrong time, place, or season. For example, if the hooting sound of an owl which normally calls at night is heard during the day, it should raise suspicion. Similarly, when I heard the sound of chicken chicks coming from the top of a tree, it seemed suspicious to me

Recognizing Birds

In this way, wild animals use different tricks to confuse one another. In the case of birds, we learnt how they can mislead others by imitating calls. Do you also have creatures like the Black Drongo, skilled in mimicry, living around your home?

You can easily record bird calls using mobile apps like Bird NET and Merlin Bird ID. These apps are also useful for identifying birds. Many studies are currently being carried out on bird sounds. However, the

Photo:i Sankt Raut

Figure3: *The Black Drongo, which is an expert at mimicking sounds, but if you pay attention to the notes of its call, its mimicry can also be detected.*

explanation and classification of birds that mimic others still remain uncertain. That is why more study is needed. You too can contribute to this work by recording bird calls and submitting them to citizen science platforms. You can upload such recordings on websites like www.xeno-canto.org or www.ebird.org.By doing this, you will not only learn more about the birds living around you, but also feel happy that you are helping in global research. Teachers and students can also create educational projects based on such recordings.

When I was a child, I heard a story in which a wolf tried to trick goat kids by imitating their mother's voice. I had never imagined that something similar might actually happen in the real world of animals. But soon, I came across such 'wolves' in the form of birds, species that mimic the calls of other birds to deceive different creatures. In reality, all this is simply a part of survival strategies, a way for living beings to continue their lineage.

So, in this article, we explored mimic birds. I hope reading it has given you some interesting and new insights, and that you will now pay closer attention to bird sounds around you. With this, the article ends here but the series on mimicry will continue. We'll meet again soon!

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