

Penguins adapt their voices to sound like their companions

August 2 2022, by Luigi Baciadonna and Livio Favaro



Credit: AI-generated image ([disclaimer](#))

We've all known a friend who came back from holiday with a French lilt in their accent. Or noticed an American twang creeping into our voice during dinner with a friend visiting from Texas.

One of us (Luigi) recently moved back to Italy from the U.K., along with

four-year-old daughter Emma who could barely speak Italian. Over the months she spoke more in Italian. But to our surprise, her accent and intonation sounded like those of her school friends rather than her family. She wasn't trying to sound more like her friends. Her [voice](#) became similar to theirs simply as a result of chattering away with them so often.

Our [recent study](#) showed penguins do this too and that the ability to vary your voice is more widespread across the [animal kingdom](#) than scientists thought.

This phenomenon, known as [social accommodation](#), is common in humans. The more two people talk with each other, the more alike aspects of our voices can become. Their voices accommodate each other. The ability of our voices to change in response to our environment is vital for learning new sounds, words, and languages at any age.

The way Luigi's young daughter's voice could change quickly and unconsciously got us thinking about whether other animals do the same.

We study the cognitive abilities of a variety of animals, and in the last couple years Luigi has been working a lot with African penguins. They are an ideal animal for researching social accommodation. African penguins form large colonies and have different types of relationships (with partners, colony-mates). They also have a variety of calls which they use to communicate with each other constantly, including one that sounds like a [braying donkey](#).

[Some animals](#) such as parrots, whales, elephants and bats learn new sounds and songs from their parents, other members of [their species](#), [other species entirely](#), or even [non-living sources of noise](#). Blackbirds do an uncanny impression of a [lorry reversing](#).

The vast majority of animals can't learn new sounds and are born with a limited range of noises they can make. However, [growing evidence](#) suggests some animals' calls change in response to who they most interact with and that more animals can vary their sounds than previously thought.

African penguins' evolution [split off](#) more than 60 million years ago from all other birds that can learn new calls by observation. Penguins cannot learn new sounds and their vocalizations are genetically determined.

[In our recent study](#), we analyzed nearly three thousand [penguin calls](#) from three different colonies in zoos around Italy. We first compared the calls of penguins that belonged to the same colony, including partners and colony-mates, versus those from different colonies. We also studied the same penguins three years later.

Finally, we compared the closeness of partners' calls versus non-partners' calls. In all cases, we found that penguins who heard each other's calls more often had similar "voices."

Our study suggests that the more penguins experience each other's calls, the more alike their calls become. And it shows even animals incapable of vocal learning can have flexible acoustics.

Penguins' calls were closer to those of their partners than to those of their colony mates three years before. This may be because of the special relationship between partners. Knowalski, a male in the Zoomarine Roma colony, lost his [partner](#) Marietta few years ago and we noticed that he was depressed for a while. Now he is cheekily trying to steal a female from other males.

Emotions have a [huge impact on voice](#) and it can [drive some](#)

[convergence](#) in animals. [When partners call directly with each other](#), they may be in a special heightened emotional state, which could affect their voices.

African penguins also use a range of calls in different contexts. For example single penguin make contact calls when they can't see the [colony](#).

Another study we carried out recently highlighted the remarkable [cognitive skills](#) of these seabirds. It showed penguins can not only recognize their partner from the sound of their voice but also could recognize their partner on sight even when the call of a different penguin was played.

We've really enjoyed working with these birds. They spend most of their time outside the water, and they seem absolutely unfit for dry land. Although they are excellent swimmers, they wobble so cutely and fall over their own feet often.

Worldwide, we have [18 species of penguins](#), some with millions of individuals. Others, like the African penguins have just a few thousand.

This species is in the [red list of the IUCN](#) (The International Union for Conservation of Nature) and classified as endangered. Their world population decreased by 98% since 1900. [Rapid action](#) is needed to save them.

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