In 1988, researchers studying songbirds discover that baby songbirds learn to sing their parents' song "language" -- and songbirds in different regions have their own song dialects, or accents.

**Keywords**

Transcript
Songbirds Only Creatures Other Than Humans That Learn “Language”

JANE PAULEY, anchor:
On Today’s Discovery science correspondent Robert Bazell says there is more to bird songs then even poets can imagine. Good Morning.

ROBERT BAZELL, reporting:
Even poets and balloon manufacturers. Now I have a demonstration here, I have a balloon, and I think, PAULEY: You do. A yellow balloon.

BAZELL: Almost every child in the world has done this trick, this balloon is filled with helium, I inhale an enormous amount of helium and I start to talk like this, you’ve heard this before of course. And the reason I do that is because helium’s lighter than the normal stream of air and my vocal cord starts moving faster and I hope I stop talking like this or my career’s going to be over. But researchers have used this effect to study how a bird sings, now why should they care about that? Well, here’s why. Dr. Steve Nowicki pays a lot of attention to bird songs. Here with some sophisticated equipment, he analyzes the song of a swamp sparrow.

DR. STEVE NOWICKI: You read these patterns very much the way one would read a score of music.

BAZELL: This is one of several research projects studying bird songs. Many people would say that the songs are beautiful and interesting. But that is not why they get so much attention, especially among neurobiologists, scientists who study the brain.

NOWICKI: There is suggestion of harmonics.

BAZELL: The studies began more than twenty years ago when Dr. Peter Marler on the left here, was walking in his native Whales, and noticed that birds of the same species had dialects, like human accents, depending on where they lived. This led to a series of experiments, showing that baby birds learn the song of their parents. If they are raised hearing another song, then that is what they will sing as adults. So
songbirds are the only animals besides humans which learn language. Marler when he first heard the dialects, had no idea how important they would prove.

DR. PETER MARLER: At that time I thought of it as purely an enthusiasm for natural historians, and it’s astonishing how it’s become a major issue in neurobiology now, so, we’ve come a long way.

BAZELL: Nowicki is one of dozens of scientists trained by Marler, who have made major discoveries about bird songs. One finding is that baby birds, like human infants, make a lot of noise which doesn’t mean anything before they start to imitate their parents and learn language. The scientists call the babbling of baby birds the sub-song.

NOWICKI: The best theory we have so far is that sub-song may be a time during which the bird is not trying to practice to make its appropriate species song, but just trying to practice to use the instrument itself. In other words, it’s as though you were trying to learn to play a musical instrument. Before you can play the Mozart Clarinet Concerto, before you can even try to learn to play that, you first have to know how a clarinet makes sound at all.

BAZELL: Another subject of the research is the instrument itself, how does the bird make its sound? Scientists had thought that all of the bird’s song comes from the vocal organ, which is analogous to the human larynx. Researchers had thought that the bird’s throat and tongue did not play any role. Nowicki showed that was wrong by putting birds in helium. When they sing in the helium, their vocal organ vibrates more rapidly. What Nowicki found was that in the helium, the bird produces a second set of tones, which could only come from the vocal tract.

NOWICKI: First, the bird in normal air. Now that same bird in helium looks like this. What the helium result shows is that birds like humans do use a vocal tract. And that then implies that they have to somehow coordinate the vocal tract with the vocal organ. That coordination is perhaps the key to the complex learning that both humans and birds share.

BAZELL: Such findings will teach us more not just about bird songs, but about human language and how it is learned. Now when we say that birds and humans have similar language it’s not language in the sense that you learn to communicate, it’s just a learned sound that they learned it for their entire life.

PAULEY: You say, you put a chimpanzee anywhere in the world and they talk like any other chimpanzee?

BAZELL: Always.

PAULEY: Birds and people, we’re special.

BAZELL: That’s right.