



# SCIENCE

WEEKLY READER

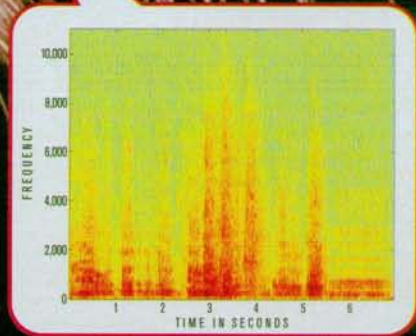
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# Say What?

Top scientists talk to *WR Science* about their exciting research in animal communication.



What's this tiger talking about? Scientists from the Dr. Dolittle Project "read" tigers' roars (above) to find out.

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## Seeing Sound

Sound is produced by waves of vibration in the air. You can't see sounds, but this scientist can—sort of. He's looking at a spectrogram. A spectrogram is a graph that shows how fast the waves go up and down over a period of time. It also shows how the sound's loudness changes.

Digital Vision/Getty Images; Man at computer: Denny's Acoustic Kingdom



# ay What?

## Scientists from the Dr. Dolittle Project are listening in on animals.

**H**ave you ever wished you could understand what animals are saying when they snort, whistle, or cluck? Researchers with the Dr. Dolittle Project are trying to do just that. For the past four years, they have been studying the sounds and behaviors of animals, including African elephants, beluga whales, and chickens.

The animals wear microphones, and scientists record the sounds they make. A computer then analyzes the recorded chatter. Researchers study the animal noises by using a visual image of sound waves called a spectrogram. (Examples of spectrograms are shown on pages 5–7.)

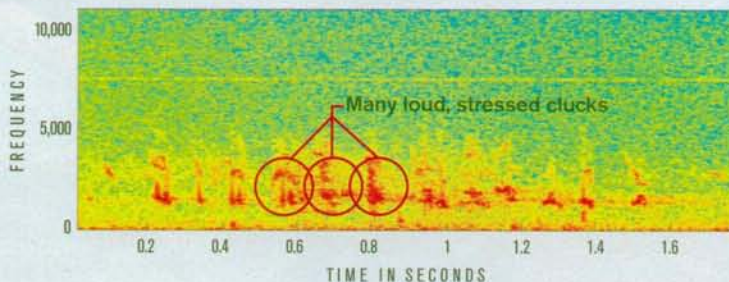
### GETTING THE MESSAGE

“Animal vocalizations are very complicated sometimes,” project leader Dr. Michael Johnson told *WR Science*. “For example, some birds change their patterns really quickly. There is a lot of information that they include in their vocalizations. They talk a lot!”

Researchers also record videos of the animals to study the behaviors, such as eating and playing, that accompany the sounds. By studying video and sound recordings of African elephants, researchers learned how to determine whether the animals were friendly or unfriendly when approaching each other.

### TALKING TURKEY? NO, CHICKEN!

This spectrogram shows the clucks of a stressed-out chicken. Researchers working on the Dr. Dolittle Project can tell when chickens are nervous by listening to the clucks the birds make. “When chickens are stressed, they [cluck] faster and with a higher pitch,” says Dr. Michael Johnson.



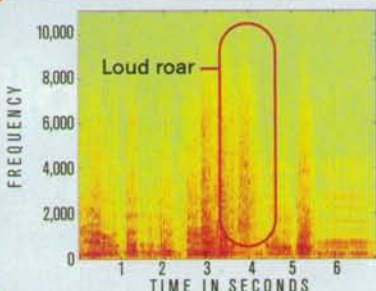


## LENDING A HELPING HAND

The results of the Dr. Dolittle Project may one day improve the lives of animals in the wild and in captivity. "If we can understand how animals communicate, we will be better able to take care of them and their habitats and to design better habitats for them in captivity," says Johnson.

The Dr. Dolittle Project is the first large-scale effort to use speech analysis to understand animals, according to Johnson. The project is supported by the National Science Foundation, a government agency dedicated to the support of scientific research. **WR**

John Gaunt/Getty Images

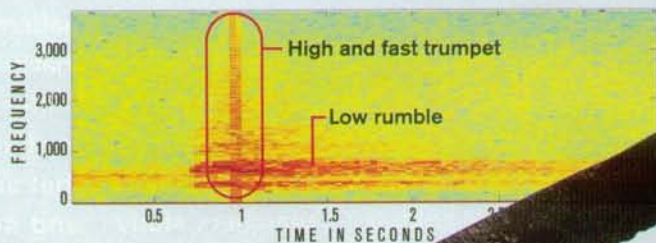


## TIGER TALK

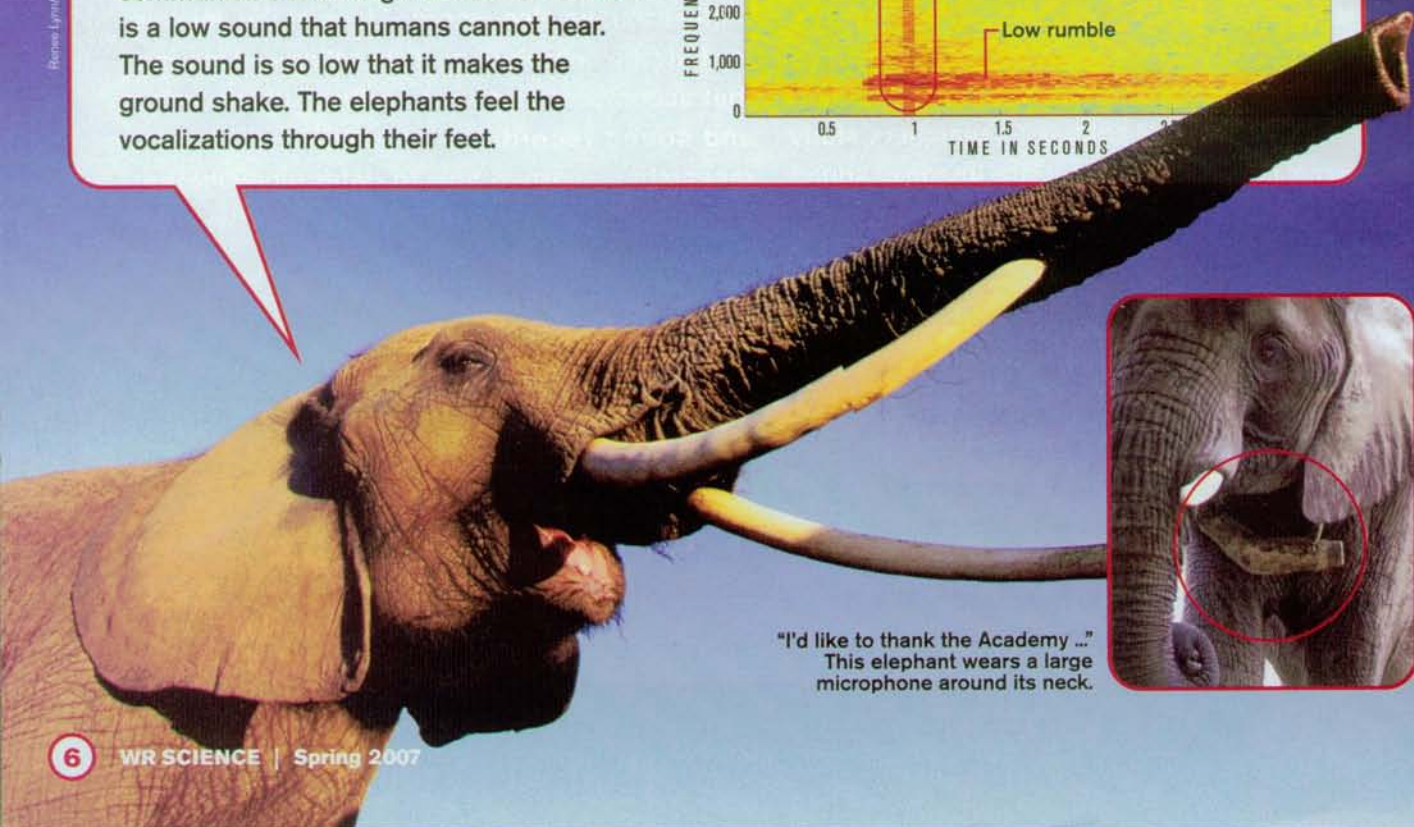
The roar of a tiger alerts other tigers to its location. Roars can be used to attract a mate or scare away other tigers. Except for a mother tiger and her cubs, tigers are solitary animals. They live and hunt alone.

## ELEPHANT EXPRESSIONS

One of the main ways in which elephants communicate is through rumbles. A rumble is a low sound that humans cannot hear. The sound is so low that it makes the ground shake. The elephants feel the vocalizations through their feet.



Renee Lynn/Getty Images

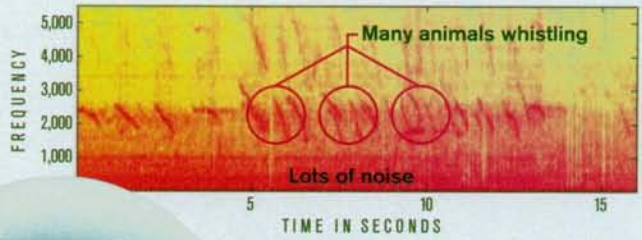


"I'd like to thank the Academy ..."  
This elephant wears a large microphone around its neck.



## WAILS FROM WHALES

Beluga whales communicate with whistles, chirps, and whines. Researchers learned that noises made by humans affect beluga whales. "The noise from boats and ships makes the whales talk louder," says Dr. Michael Johnson.



Testing 1, 2, 3: This scientist is placing a microphone so that he can record the sounds of a beluga whale.

To listen to featured animal sounds, visit [weeklyreader.com/wrscience](http://weeklyreader.com/wrscience).

## WHAT DOES YOUR VOICE LOOK LIKE?

This is a spectrogram of a human voice. The person said, "Don't ask me to carry an oily rag like that!" Scientists who practice looking at spectrograms of people talking can actually "read" them and tell what words the person said!

**"Don't ask me to carry an oily rag like that!"**

