

The Home Forum®

Animals 'speak' many strange languages

IF YOU'RE sitting around a lonely campfire at night, the howl of a wolf can sound pretty scary. But the wolf isn't trying to scare anyone, it's just letting other wolves know where it is. This helps members of its pack find it and tells other wolves to stay out of the pack's territory.

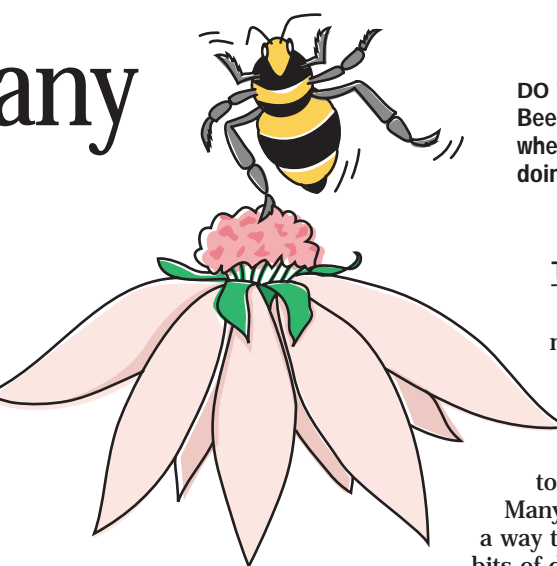
Animals use communication to tell others about their territory, find a mate, make friends, let others know how they feel, start and stop fights, and warn others of danger. And they use many different methods to say these things. Here are some of the more unusual ways that animals talk.

SOUND

Dogs bark, cats meow, birds chirp. We're pretty familiar with these forms of communication. But animals use sounds in other ways, too. To find a mate, the male ruffed grouse stands on a hollow log and beats his wings, making a drumming sound. The hollow log amplifies the sound so that it can be heard for up to a quarter of a mile. Mole rats use a banging sound for the opposite reason. They like to live alone. So they warn other mole rats to stay out of their way by banging their heads on the top of their tunnels.

Drumming even works underwater. Many fish have a special swim bladder, a gas-filled sac that helps them maintain their buoyancy at different depths. Some fish have muscles that can vibrate these bladders to produce drumming noises. (See story below.)

Sometimes making the right sound can be a matter of life and death. With some spiders, including the black



DO THE 'BUG-ALOO': Bees tell their hive-mates where the flowers are by doing a special 'dance.'

TOUCH

Animals use touch to communicate in many ways. Biting, kicking, and hitting send obvious messages, but touch can also be used in friendly ways. Chimpanzees will touch hands to greet each other. Many primates groom each other as a way to show friendship, removing bits of dirt or insects from each other's fur. Elephants may touch trunks in greeting.

SIGHT

Elephants also use their trunks for signals. A baby elephant will raise its trunk in the air when it wants attention from its mother. Body language is important to other creatures, too. When a gorilla is startled, it may stand still and shake its head back and forth. This means it does not intend to harm you. A chimpanzee will wear a special "play face" when it wants to let you know it's friendly.

Dancing is another way to "talk." When a bee wants to tell other bees where to find a good stash of nectar, it performs a special dance, wagging its body and moving in ways that tell the other bees which direction to go and how far to fly. Many birds, including the Japanese crane, also dance to communicate. But they're mostly trying to impress each other to win a mate.

Some creatures even put their message in lights. Each type of firefly has its own flashing code. This helps males and females find mates of the same species. The lights not only tell what kind of firefly it is, they also guide the insects to each other. Color can also be important, too. The cuttle-

widow, the male is much smaller than the female. When the male wants to approach a female to mate, he climbs onto her web and then steps carefully to vibrate the web in a certain pattern. This vibration tells the female, "I'm not dinner, I'm one of your kind."

The female may accept him as a mate, or she might just eat him anyway. (That's why she's called a widow.)

Anyone who has used a dog whistle knows that dogs can hear sounds pitched so high that humans can't hear them. Other animals, such as cats, bats, moles, hedgehogs, and dolphins, can also hear high-pitched sounds, or ultrasounds.

Elephants, on the other hand, can hear sounds too low for humans to detect. These low rumblings, or infrasounds, can be heard across long distances. They help elephants keep track of one another when they're too far away to see or smell each other.



ILLUSTRATIONS BY KAREN N. SCHNEIDER - STAFF

NOISY FISH: Some underwater creatures can sound as loud as a subway train.

The fish that fooled the US Navy

SOME of our early discoveries about how fish communicate were the result of underwater warfare. During World War II in the 1940s, scientists first used sonar to help detect submarines. Sounds were sent out from a ship. When the sound waves encountered an object, they would bounce back. By measuring how long it took the sounds to return to the ship, you could tell how far away an object was. But operators listening for echoes sometimes heard strange popping and crackling noises.

Scientists found that these noises were coming from snapping shrimp. They are only about an inch long and have large claws. The shrimp hit parts of their claws together to make a noise like someone snapping his fingers. The shrimp can make this noise so loud that one shrimp in a glass jar can crack the glass with the force of its snaps.

The toadfish also caused problems for sailors. Its grunts are so loud that, from a couple of feet away, it

sounds like a subway train passing by. The toadfish noises were so powerful, they could set off mines planted in the sea that were supposed to be triggered by enemy ships.

Even after the war, sailors were still learning about the sounds of the sea. A United States Navy ship in the Mediterranean Sea once heard what sounded like submarine distress calls. No US subs were supposed to be in the area. The calls continued for more than two hours while the US contacted other countries to see if they had a submarine in distress. Then the Navy ship transmitted the sounds to an underwater sound laboratory, and scientists identified the signals. They were coming from a drumfish using its swim bladder to talk. It was not in distress - but it had caused a lot of distress for humans trying to figure out what it was.

S.J.H.

fish turns different colors to show how it feels. When it's ready to fight, it turns a dark color. Its colors change quickly when it is agitated.

Some animals have been taught to use human sign language to communicate with humans and even with each other. You may have heard of Koko, the gorilla who learned to form simple sentences with sign language. Other primates have also been taught to use such signals. And in another experiment in Thailand in 1994, elephants were taught to "sign" with their trunks and to use them to point to objects as they "talked."

Some bears and tigers leave visual signs. They put scratch marks on a tree as high up as they can. When another bear or tiger comes along, it may discover it can't make marks that high. That tells the visiting animal that the tiger or bear that made the marks is bigger and should be left alone.

SMELL

Another way to communicate without actually being there is through smell.

A gazelle has special scent glands near its eyes that it rubs on branches to mark its territory. When other gazelles pick up the smell, they realize that this territory has already been claimed. Many animals mark territory by smell, including domestic cats and their wild cousins.

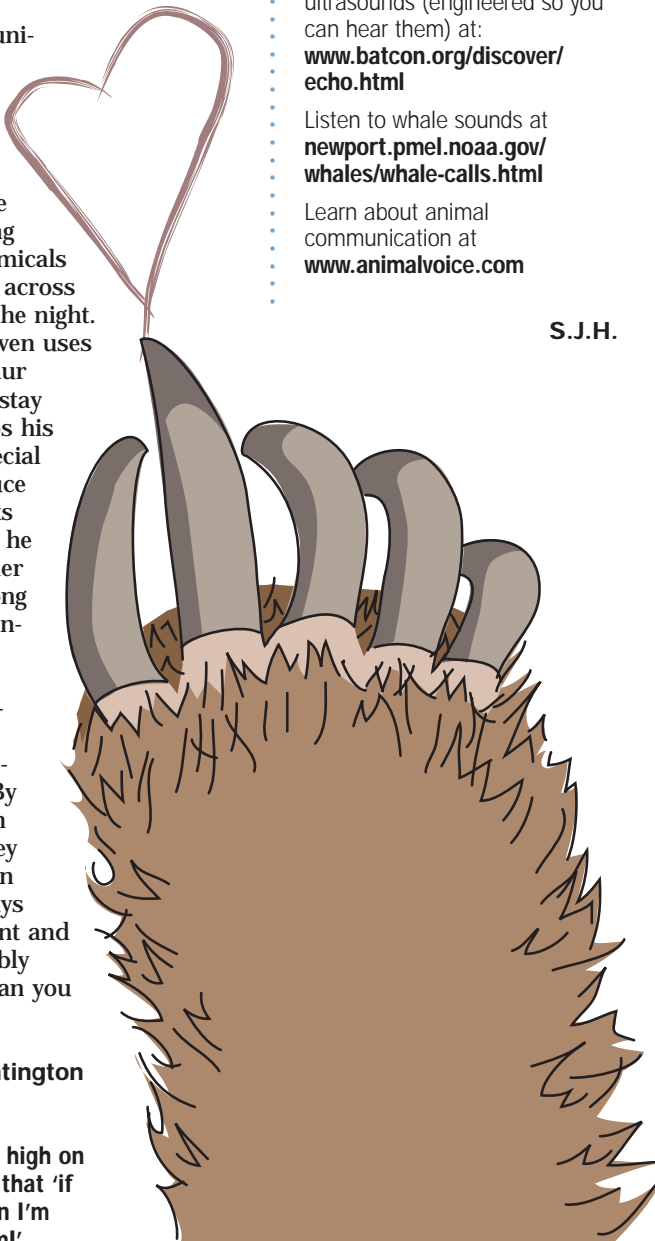
Queen ants can communicate with their workers by smell. The queen produces different chemicals, which rub off on her workers. As the ants rub antennas, the message travels to more ants, telling them what to do. The chemicals can tell the ants to march across the forest or to camp for the night.

The ring-tailed lemur even uses smell to fight. When a lemur wants to warn another to stay out of his territory, he rubs his tail against his wrists. Special glands in his wrists produce a smelly musk that collects in the fur of his tail. Then he flicks his tail at the intruder as a warning. A good, strong smell will discourage the intruder from sticking around.

The ways animals communicate are as varied as the creatures and the messages they want to send. By observing carefully, we can learn more about what they mean. Try it with your own pets: Notice how many ways they tell you what they want and how they feel. They probably have you trained better than you realize.

Sharon J. Huntington

A TALL TALE: Claw marks high on a tree tell intruding bears that 'if you can't reach these, then I'm bigger than you – so scram!'



More information on how animals communicate

BOOKS FOR YOUNGER READERS:

'How Animals Talk,' by Susan McGrath (National Geographic Society, 1987).

'Slap, Squeak & Scatter: How Animals Communicate,' by Steve Jenkins (Houghton Mifflin, 2001).

FOR EXPERIENCED READERS:

'Wild Talk: How Animals Talk to Each Other,' by Marilyn Baillie, (Owl Books, Toronto, 1996).

'Could You Ever Speak Chimpanzee?' by Dr. David Darling, (Dillon Press, Minneapolis, 1990).

'Did You Hear That? Animals With Super Hearing,' by Caroline Arnold (Charlesbridge Publishing, 2001).

WEBSITES

Hear audio samples of bat ultrasounds (engineered so you can hear them) at: www.batcon.org/discover/echo.html

Listen to whale sounds at newport.pmel.noaa.gov/whales/whale-calls.html

Learn about animal communication at www.animalvoice.com

S.J.H.

TODAY'S ARTICLE ON CHRISTIAN SCIENCE

Bringing a spiritual perspective to daily life

My one-word prayer was answered

WHEN I WAS YOUNG someone shared an idea that has helped me all my life. A family friend told me that the power of God is like the electric power in our homes. We are empowered when we plug in.

In the years since, I've proved many times that God is all-powerful and ever-present. And God's power isn't interrupted. It's constant. In fact, when we most need God's protection, comfort, and care is when the Almighty is most available – because then we're eager to draw on God, eager to make the connection and to be blessed.

The Bible encourages, "Do not fear, for I am with you, do not be afraid, for I am your God; I will strengthen you, I will help you, I will uphold you with my victorious right hand" (Isa. 41:10). The more we learn to trust that God is the warm, loving Father-Mother of all creation, the more we find this transforms our lives.

Here's an example. I was once awakened in the middle of the night by a great roaring noise. The house was shaking. "No," I shouted. It was the shortest prayer of my life. I don't remember thinking what I should do or pray, I just remember that word came out. In retrospect, I can see that when I realized that my three small children and I, living atop an isolated hill far out in farm country, were apparently vulnerable to some impending disaster, my first thought was of God's presence and power. That "No" came instinctively from the depths of many previous proofs of His care. No, God doesn't allow His children to be harmed. I knew that. I could prove it again.

Instantly everything became silent. Utter stillness. Not one sound. For a moment, the sharp contrast made me think I must be dreaming. I tried to figure it all out. I got up and checked the house. Everything was in order. The children slept soundly. I thought about the situation some more and then went back to sleep.

The next day at work, I overheard a new employee describing a tornado that had come through his farm, toppling massive trees and tossing huge pieces of farm equipment like toys, but

missing buildings. It had gone into a cornfield, where it flattened every stalk to the ground. Then, beginning at one spot, every stalk stood upright, untouched. The tornado had lifted suddenly upward. I asked this man where he lived. I wasn't surprised to find out that his farm was right over the hill from our home. The path of destruction had been headed our way.

Had my urgent one-word prayer stopped that storm? We can't know for sure, but I have no doubt of it. I had plugged in to my God, whose power does not fail us when we seek and depend on it. Jesus stopped storms (see Mark 4:35-40), and he told his followers to do the works that he was doing.

Everyone can learn and begin to prove the power of God, illustrated in the Bible. From beginning to end, the

That "No" came instinctively from the depths of many previous proofs of God's care.

Bible's developing message is that prophets, shepherds, farmers, townspeople, great leaders and kings, may at first, like us, wonder if there is a loving, caring God.

Ultimately we all learn that divine Love and Truth and Life – the one true God – never fails us when we trustingly and unreservedly turn to divine help.

Who shall separate us from the love of Christ? shall tribulation, or distress, or persecution, or famine, or nakedness, or peril, or sword?

Nay, in all these things we are more than conquerors through him that loved us. For I am persuaded, that neither death, nor life, nor angels, nor principalities, nor powers, nor things present, nor things to come, Nor height, nor depth, nor any other creature, shall be able to separate us from the love of God, which is in Christ Jesus our Lord.

Romans 8:35, 37-39

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