UNIT 9 Audioscript

CONNECT to the topic page 82

Host Andy Davis: Now, anyone who's owned a dog will tell you they're wonderful communicators. That's why we love them—they're great companions. Over time, we get to understand what they're feeling, what they're trying to tell us. And, perhaps more than anything else, it's their tails that help us understand their moods best. With me to talk about this research is animal behaviorist Patrice Waltham. So, what's new here?

Guest Patrice Waltham: Andy, we've all known for a long time that the tail is a good indicator of a dog's mood. You know, if the tail's tucked between its legs, the dog's likely scared, anxious, or maybe submissive. If it's up and wagging quickly, the dog is relaxed and playful. This is common knowledge. What's significant about this latest research is what it tells us about how *other dogs*—not humans—understand tail movements. It seems that dogs can tell how other dogs are feeling from the way their tails are wagging.

Host: And it's about the direction of the tail wagging? Is that correct?

Guest: Yes, a dog can wag its tail to the left side of its body, or to the right side of its body—we say the wagging is biased to the right, or biased to the left.

Host: OK, I can see that.

Guest: One research team at the University of Trieste in Italy has studied this in detail. The researchers noted that dogs became nervous and their heart rate increased when they observed other dogs whose tails were wagging to the *left*.

Host: Hm. When they saw the other dog wagging to the *left*.

Guest: Yes, with a left bias. It seems that dogs wag their tails to the left when they have a negative experience, such as seeing a strange or aggressive dog. In contrast, the team observed that when a dog had a positive experience—like seeing its owner—it wagged its tail to the *right*.

Host: So, the right side is associated with positive emotion. Interesting. But are these findings of any use to anyone?

Guest: Well, they're important in understanding how animals communicate. We believe that in terms of brain structure, dogs essentially have two main emotional centers in the brain—and the tail wagging reflects activity in these areas. Beyond that, I'm not sure how valuable this is. But here's a thought: If you're a dog owner, you might want to think about the nature of your relationship with your dog if it's wagging its tail to the left when it's reunited with you. Maybe you need to change your own behavior.

Host: Indeed, indeed! Food for thought. Thank you. …

FOCUS your attention page 85

Speaker: OK, on a related note: Two common, but very different modes of animal communication are acoustic signals, or sounds, and chemical signals. Acoustic signals can travel long distances and do so almost instantly. These sounds can also be altered in useful ways. For instance, the pitch, loudness, and rhythm of a sound can be changed. This allows animals to communicate different meanings. Like acoustic signals, chemical signals can travel long distances, too. But they require much more time to do so because they depend on moving air or water. Similar to acoustic signals, chemical signals can be altered in many ways. For instance, a little bit of a chemical can attract other animals, while a greater amount of the same chemical can repel them. Chemical signals can also be used for marking territory and trails.

WATCH the lecture page 86

Professor Martin Sera: E01 How many of you have pets? They're great, aren't they? I've got a golden retriever myself, and often I feel that my dog is communicating with me. **(COACHING TIP 1)** But do animals really communicate like we do? Well, Harvard professor Marc Hauser has identified several types of animal communication. And like humans, they do use sounds and nonverbal behavior to communicate. For instance, they convey information to one another, they establish and maintain social organization, and they express their perceptions of the world. So today we'll look at animal communication through the lens of human language. Specifically, we'll use four basic characteristics of human language to see how animal and human communication styles compare. I think that you'll be surprised at how sophisticated animal communication is. But ultimately, we'll see that human communication is far more flexible and better developed. **(COACHING TIP 2) E02** Now, the first characteristic we'll look at is arbitrariness. Arbitrariness means that there's no logical relationship between a sound and its meaning. For example, the word sky has no relationship with the thing it refers to, right? In comparison, a lot of animal communication is not arbitrary. For example, the growl of an angry dog is meant to very directly warn and threaten. There's nothing "arbitrary" about this message, right? However, some animal communication is arbitrary, albeit to a limited degree. For example, meerkats—a small African animal—can make about 20 distinct sounds. They use one alarm call for snakes, another for eagles, and yet another for large cats, just to name a few. OK? **E03** This is impressive. But human languages are far more

flexible because they have a wide range of sounds. English, for example, has more than 40 distinct sounds such as /a/, /k/, or /t/. And we can make an unlimited number of arbitrary words by altering these sounds–far more than any animal. **E04** The second characteristic of human language we'll compare is displacement. Displacement is communicating ideas about things that are not physically present. For example, if you talk about what you did last weekend, that's displacement. Now, can animals do this? Well, often the answer is they can't. For instance, if your dog doesn't like the neighbor cat, maybe it barks when it sees the cat. But when the cat isn't around, the dog doesn't bark—it doesn't communicate its dislike of the cat. This shows that the dog doesn't have the capacity for displacement. **E05** Well, one exception to this is bees. Many types of bees use displacement in their dances. Through these dances, they're able to communicate to other bees the distance, direction, quality, and quantity of a food source. The meaning of the dance is so clear and so precise that even scientists researching bee dances can interpret exactly where the food is. In any case, although I think that the bees is an excellent example of the sophistication of animal communication, in general, animals' use of displacement is extremely limited compared to humans. Think about books, magazines, and the Internet. I mean, everything that we read involves displacement, as do most of our conversations. **(COACHING TIP 3) E06** The third characteristic of human language that I want to consider is called cultural transmission–the idea that language is passed from one generation to the next. Now, obviously, humans excel at this, but what about animals? Well, some animals are also fairly skilled at passing language on to their young. A good example of this is the killer whale. They live in groups, and different groups develop different accents, just like people. The accents are passed from older to younger killer whales. Well, this is yet another example of the sophistication of some animal communication. However, once again, what we see is that while animal and human communication share similarities, the characteristics that we are looking for are far more developed in humans. For example, in addition to accents, humans also pass on extremely large vocabularies and complex grammar. **E07** The fourth and last characteristic that we'll talk about today is called discreteness. This means that language is made up of discrete units that can be combined in different ways to create different meanings. As humans, we do this by using sounds to make words and using grammar to arrange those words into sentences. The best example we have of animals using discreteness is from chimpanzees raised in captivity. Using a keyboard, chimps have made requests for food by typing "raisin peanut," which seemed to mean "raisins and peanuts." Chimps have also invented phrases to describe things. For example, one chimp called watermelon, "drink fruit." Clever, huh? But while this is fairly impressive, one major problem with the chimpanzees' use of language is that their word order is quite random. So most linguists would say that the chimpanzees really do not understand and use grammar in the way that humans do, and therefore can't be said to use discreteness. In the use of discreteness, we see that humans have a huge advantage over animals. Discreteness allows us to make complex words and sentences that communicate an unlimited number of meanings, and this is one of the really impressive–actually amazing—aspects of human communication. **(COACHING TIP 4)**

TALK about the topic page 89

River: So, here's the lecture in a nutshell: Animals communicate. And they share some communication characteristics with us. But animal communication is less developed. Is that what everyone else got from this lecture?

Mia: Pretty much.

Hannah: Uh-huh.

Manny: Well, I agree that's what he said. But personally, I think animal communication is a lot more sophisticated than we understand.

Mia: How so? You really think it's as sophisticated as human communication?

Manny: In some ways, yeah. I mean, I saw this documentary about monkeys that give signals for, you know, birds, snakes, other animals—depending on what they see.

River: Yeah, but remember, that's not using, what was it? Arbitrariness. And it's not using displacement. Those are very clear and very present signals, right?

Mia: What is a meerkat, by the way?

Hannah: Oh, it's a kind of little monkey, or kind of like a cat, really. Looks like a raccoon, to me. Lives in Africa.

Mia: So, even though animal communication is kind of sophisticated, there seem to be very few examples of complex communication. Human communication is usually really complex, right?

Hannah: Yeah, like when you seem to be saying different things and therefore "send mixed signals."

Manny: Or when you're being very indirect and the other person has to "read between the lines."

Mia: Or what about when people are being like passive aggressive and saying one thing.

Hannah: I hate that!

Mia: But really meaning something else.

River: Then that's like sending mixed signals and having to read between the lines.