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## Human-Animal Communication: Insights Into Interspecies Interactions

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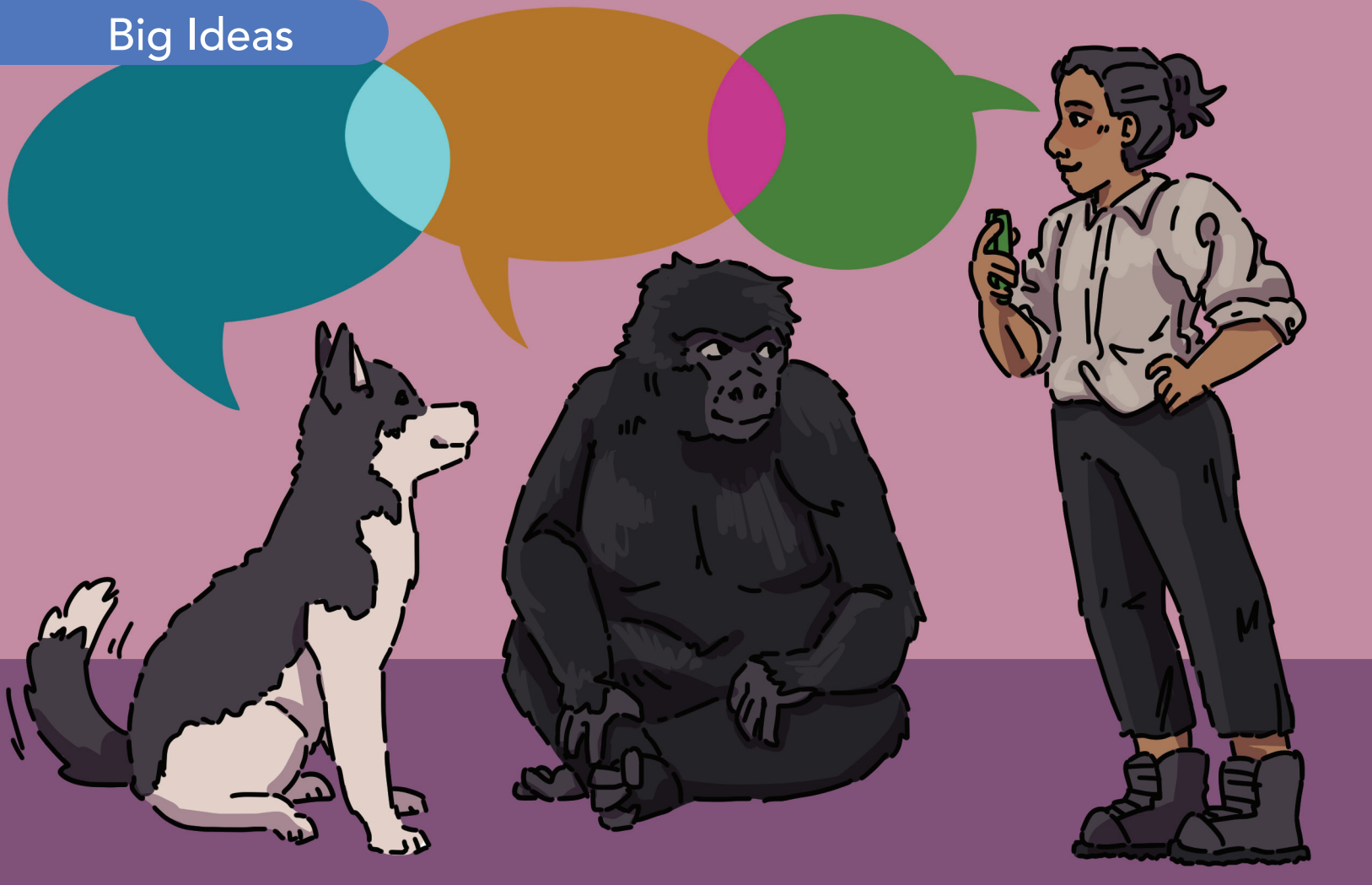
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# Human-Animal Communication

## *Insights Into Interspecies Interactions*

Written by My Trinh

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**A**dmit it — watching funny animal videos can instantly brighten your day. During the lockdown, I spent hours scrolling through videos of horses neighing, parrots chirping, seals singing, and dogs howling. At first, the content seemed amusing because those sounds were meaningless; however, I began to see details and patterns I had not before. When I noticed that the horses only neighed when seeing another horse, the parrots chirped when they wanted attention, and the dogs howled in response to human commands, I started questioning my assumption: were those sounds really meaningless? I began to conduct research on my own and was astonished. Human-animal relationships are not as simple as they seemed. We communicate with animals in many ways, every day, but hardly realize it. So, how exactly are humans and animals communicating?

Humans have developed many different ways of communicating, with gestures, facial expressions, letters, sounds, visualization, etc. Similar to humans, animals also have their own diverse forms of communication. Most animals communicate using visual, auditory, tactile, or chemical signals, and many species have specific preferences in their communication form. The study of human-animal communication has stemmed from laboratory and

psychological research conducted in an effort to understand the behaviors of animals and their means of communication.

Human-animal communication is the interactions observed between humans and other animals, ranging from nonverbal cues and voices to the use of language. For example, interactions between pets and their owners reflect a form of verbal communication. A dog can pick up on a message by interpreting cues such as the owner's tone of voice and body language. This communication is two-way, for instance, owners can learn to tell the subtle difference between the barking tone of dogs performing different tasks.

A survey conducted in 2008 showed that 67 percent of pet owners reported that they understood their pets' needs from barking or other sounds, and 62 percent believed that their pets recognized human speech. Humans and most animals have the ability to understand and perceive multiple nonverbal cues such as facial expressions, gestures, tone, and other paralinguistic elements. These cues assist them in understanding others' intentions. This leads many pet owners to believe that they can communicate well with their pets, despite not knowing if animals perceive the information the same way as humans.



According to several studies, evolution plays a surprisingly important role in human-animal communication. In a paper published in the National Library of Medicine about dog domestication, researchers found that dogs such as German Shepherds and Belgian Tervuren had high adaptivity to human living environments when high selectivity was employed during the domestication process. Notably, this included an understanding of the human communication style. Even puppies possess this understanding and ability without much practice.

Besides pets such as dogs, other species also show evidence of their ability to communicate with humans. For instance, Kanzi, a bonobo who lived at the Great Ape Trust research center in Iowa, acquired communication skills in infancy. At first, Sue Savage-Rumbaugh, a psychologist involved in researching mammals' behaviors, tried to teach Kanzi's mother how to use a special keyboard she had developed. However, it later turned out that little Kanzi was the one who understood the assignment the most and did exceptionally well in learning the keyboard. Seeing the outstanding capabilities of Kanzi, Savage-Rumbaugh decided to instruct him in the same way that human children are taught to learn languages.

Kanzi spent his days engaging in casual activities with the adults who spoke to him and taught him the corresponding vocabulary, where abstract symbols are used to represent written words when needed. Kanzi proved to be an excellent learner and an enthusiastic participant in daily social interactions, learning and understanding words in both written and spoken forms. Savage-Rumbaugh also claimed that Kanzi could understand grammatical

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concepts such as past, present, and future tenses. Kanzi had demonstrated communication skills that were on par with that of a two-and-a-half-year-old. It may not seem like much, but it exceeded far beyond what people previously thought animals were capable of.

This raises a variety of questions — what if scientists

venture into the study of human-animal communication outside the family of Canidae (such as dogs) and great apes? Will humans actually be able to communicate with other animal species? Studies suggest that the close relationship between humans and apes can be taken into account. Apes' outstanding ability to learn gestures can be explained by human evolutionary origin, where we mostly communicate with others using limbs and hands. "The natural communication of apes may hold clues about language origins," said Pollick and Waal in their research article about ape gestures and language evolution.

Although this is a relatively new field of research, the available findings allow researchers to develop effective methods to teach animals to understand human language and technology to support communication between species. Some farmers have used artificial intelligence (AI) in electronic equipment to detect signs on animal faces and predict their health status. This technology could limit the risk of transmissible diseases in animals and reduce the workload of farmers and pet owners.

There are still many challenges that need to be resolved and clarified. Recent studies have discovered that patterns of signals given by different animals among the same species have complicated auditory patterns, which requires advanced analysis to determine how the sequences fit with ranges. Despite the limitations, the scientific community is optimistic about the current positive discoveries on human-animal communication. If you are a pet owner, you better start thinking of conversational topics — because someday, you may be able to chat with your animal friend!

