



**Medical  
Blueprints**

## **FIDO FINDS HIS VOICE: COMMUNICATING WITH CANINES REPORT #3012**

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**BACKGROUND:** Animal communication can be any process where information is passed from one animal to another causing a change or response in the receiving animal. It most often happens between members of a species but can also take place between different species. Some species are very social and interact all the time. This is where communication is essential for keeping these groups cohesive and organized. Animals communicate using signals, which can include visual; auditory, or sound-based; chemical, involving pheromones; or tactile, touch-based, cues. These behaviors can help animals find mates, establish dominance, defend territory, coordinate group behavior, and care for young.

(Source: <https://www.khanacademy.org/science/ap-biology/ecology-ap/responses-to-the-environment/a/animal-communication#:~:text=Communication%20is%20usually%20between%20animals,%2C%20touch%2Dbased%2C%20cues.>)

**PUPPIES AND COMMUNICATION:** Research out of the University of Arizona suggests that puppies' social skills may be present shortly after birth rather than learned. The study also uncovered that genetics may help explain why some dogs perform better than others on social tasks such as following pointing gestures. To better understand biology's role in dogs' abilities to communicate with humans, collaborators looked at how 375 of the Canine Companions organization's 8-week-old budding service dogs performed on a series of tasks designed to measure their social communication skills. At the time of the study, the puppies were still living with their littermates and therefore, their interactions with humans had been limited, making it unlikely that the behaviors were learned. "We found that there's definitely a strong genetic component, and they're definitely doing it from the get-go," said study co-author Evan MacLean, assistant professor of anthropology and director of the Arizona Canine Cognition Center at the University of Arizona. However, the results showed while puppies may be born knowing how to respond to human-initiated communication, the ability to initiate communication on their own may come later.

(Source: <https://news.arizona.edu/story/puppies-are-wired-communicate-people-study-shows>)

**ARTIFICIAL INTELLIGENCE AND ANIMAL LANGUAGE:** Researchers are looking at using machine-learning algorithms to analyze the calls of rodents, lemurs, whales, chickens, pigs, bats, cats, and more. Analyzing animal language is very different from analyzing human language. Computer scientists must instruct software programs on what to look for and how to organize the data. This process depends not only on accruing a good number of vocal recordings, but also on matching these vocal recordings with the visual social behaviors of animals. Making a Google Translate for animals has been an aspirational project that's been in the works for the the last decade. Another factor that researchers are considering is the fact that there might be unique elements to animal language due to physiological and behavioral differences. There are suggestions for using self-supervised learning algorithms to analyze audio data in which the computer tells the researchers what patterns it's seeing in the data. These patterns may unveil connections that are missed by the human eye.

(Source: <https://www.popsci.com/technology/artificial-intelligence-animal-language/>)

✉ **For More Information, Contact:**

Federico Rossano  
[frossano@ucsd.edu](mailto:frossano@ucsd.edu)

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