

# Scientists unexpectedly witness wolf puppies play fetch

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A wolf puppy named Flea, who comes from a non-fetching litter born in 2015.  
Credit: Christina Hansen Wheat

When it comes to playing a game of fetch, many dogs are naturals. But now, researchers report that the remarkable ability to interpret human

social communicative cues that enables a dog to go for a ball and then bring it back also exists in wolves. The study appears January 16 in the journal *iScience*.

The findings were made serendipitously when researchers tested 13 wolf puppies from three different litters in a behavioral test battery designed to assess various behaviors in young dog puppies. During this series of tests, three 8-week-old wolf puppies spontaneously showed interest in a [ball](#) and returned it to a perfect stranger upon encouragement. The discovery comes as a surprise because it had been hypothesized that the [cognitive abilities](#) necessary to understand cues given by a human, such as those required for a game of fetch, arose in [dogs](#) only after humans domesticated them at least 15,000 years ago.

"When I saw the first wolf puppy retrieving the ball I literally got goose bumps," says Christina Hansen Wheat of Stockholm University, Sweden. "It was so unexpected, and I immediately knew that this meant that if variation in human-directed play behavior exists in wolves, this behavior could have been a potential target for early selective pressures exerted during dog domestication."

Hansen Wheat is interested in understanding how domestication affects behavior. To study this, she and her team raise wolf and dog puppies from the age of 10 days and put them through various behavioral tests. In one of those tests, a person the pup does not know throws a [tennis ball](#) across the room and, without the benefit of any prior experience or training, encourages the puppy to get it and bring it back.

The researchers never really expected wolf pups to catch on. In fact, the first two wolf litters they worked with showed little to no interest in balls let alone retrieving one. They thought little of it at the time. It was what they would have expected, after all. That is until they tested the third wolf litter and some of the puppies not only went for the ball, but also

responded to the social cues given by the unfamiliar person and brought it back.

"It was very surprising that we had wolves actually retrieving the ball," says Hansen Wheat. "I did not expect that. I do not think any of us did. It was especially surprising that the wolves retrieved the ball for a person they had never met before."

Hansen Wheat adds that similarities between dogs and wolves can tell us something about where the behavior we see in our dogs comes from. And, while it was a surprise to see a [wolf](#) puppy playing fetch and connecting with a person in that way, she says, in retrospect, it also makes sense.

"Wolf puppies showing human-directed [behavior](#) could have had a selective advantage in early stages of dog domestication," she says.

Her team will now continue to work with the data they have collected over the course of three years hand-raising [wolves](#) and dogs under identical conditions to learn even more about their behavioral differences and similarities.

**More information:** *iScience*, Wheat and Temrin: "Intrinsic ball retrieving in wolf puppies suggests standing ancestral variation for human-directed play behaviour" [www.cell.com/iscience/fulltext ... 2589-0042\(19\)30557-7](http://www.cell.com/iscience/fulltext/S2589-0042(19)30557-7) , DOI: [10.1016/j.isci.2019.100811](https://doi.org/10.1016/j.isci.2019.100811)

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