

Relationship between domestication and human social skills

October 8 2015, by Madeline Halpert



Brian Hare wants to know why humans are such big babies.

Well, that was just the provocative title for his Center for Cognitive Neuroscience talk on Oct. 2. What he wants to know is what happens in the development of [human](#) babies that socially advances and separates them from their animal counterparts.

Hare, an associate professor of evolutionary anthropology, discussed human evolution and comparisons to our ancestors and chimpanzees, bonobos and even dogs. He explained that the idea of comparing humans to other species suggests that "something very fundamental happened during [human evolution](#) that makes us human— a shift in human development."

First Hare attempted to evaluate whether certain advanced capabilities of humans are present in other species. One means of doing this was by examining if other species think about the thoughts of others. In a video from an experiment "Gaze" that Hare conducted, he looks at a chimpanzee named Dorene, and then suddenly glances upwards. The chimp follows suit, gazing up at the ceiling to see what Hare is looking at. From this behavior, Hare inferred that chimpanzees are in fact capable of thinking about the thoughts of others, like the human species.



This led Hare to examine another behavior that is advanced in humans: cooperation. Hare explained that in previous laboratory research, chimpanzees were found to be incredibly uncooperative. Hare's studies in the field, however, proved the opposite. In an experiment with Alicia Melis and Michael Tomasello, two chimps were put in adjacent, but separate rooms. A treat was visible with a string leading to each chimpanzee. If one animal pulled the string, it just got the string. But if both pulled cooperatively, they ended up with the food. The researchers found that 95% of the chimps could work together to solve this problem

to get an equal payoff for both of them. Hare did note, however, that if the chimps had communicated, they could have solved the problem more efficiently.

This showed that where chimpanzees might differ from the human species is in their inability integrate cooperation and communication. With children, Hare explains, this is a fundamental part of development that is established early in life. Because of this, Hare wondered if there is something motivationally different about the structure of cooperation between humans and other species, something that also shows early in development.

When humans work together, Hare said, they understand they have a shared goal and will adjust to different roles to complete the task. This has led to, from an evolutionary perspective, a very "strange" behavior in humans, in which they do things together simply because they like to. Hare calls this "we psychology." Hare showed two videos side by side: one of his son rolling a ball to his mother, Vanessa Woods, and another of a chimp in a cage rolling a ball with Woods. When Woods stopped playing the game, the chimp reached out of the cage and grabbed her arm and pushed the ball so it would roll back to him. From this, Hare inferred that, like humans, chimps may also have a small tendency for "we psychology."

In another study, Hare compares two-year-old children to adult and juvenile chimpanzees. In terms of physical cognition, the species were very similar to one another. On the social problem solving front, however, human children were already outperforming juvenile and adult chimpanzees. This study, along with the culmination of his earlier research, reinforced Hare's idea that something very fundamental happens early in human development that differentiates human's social and communicative capabilities from other species: domestication.

"It's not just that kids are solving problems better, but it may even be that the way kids cognitively organize has changed," he said.

Hare explains that just knowing the cause to be domestication was not enough, however. He wanted to understand how this worked. Hare referenced extensive breeding research conducted by Dmitri Konstantinovich Belyaev, in which he studied the domestication of the fox. Not only did these foxes show behavioral changes due to domestication, they also displayed morphological and physiological changes: floppy ears, curly tails and high levels of serotonin. Belyaev also found that, like humans, foxes use gestures and communicative cues. So, Hare concluded that the process of domestication influences a realm of social and biological characteristics and could be manipulated and interpreted in many different ways, especially in our own development.

"This doesn't just happen as a result of artificial selection, or human selection. It can happen as a result of natural selection," Hare said. "So then we turn to our own species and start looking at whether there's any evidence in our own evolution for this." he said.

More information: "Five primate species follow the visual gaze of conspecifics," *Animal Behaviour*, Volume 55, Issue 4, April 1998, Pages 1063-1069, ISSN 0003-3472, [dx.doi.org/10.1006/anbe.1997.0636](https://doi.org/10.1006/anbe.1997.0636)

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