

New hypothesis for human evolution and human nature

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These carvings are from ivory and have been dated to between 30,000-36,000 years old, making them the oldest artworks in Europe. Credit: Photo by H. Jensen. Copyright: University of Tübingen.

It's no secret to any dog-lover or cat-lover that humans have a special connection with animals. But in a new journal article and forthcoming book, paleoanthropologist Pat Shipman of Penn State University argues that this human-animal connection goes well beyond simple affection. Shipman proposes that the interdependency of ancestral humans with other animal species -- "the animal connection" -- played a crucial and beneficial role in human evolution over the last 2.6 million years.

"Establishing an intimate connection to other animals is unique and universal to our species," said Shipman, a professor of biological anthropology. Her paper describing the new hypothesis for [human evolution](#) based on the tendency to nurture members of other species will be published in the August 2010 issue of the journal [Current](#)

[Anthropology.](#)

In addition to describing her theory in the scientific paper, Shipman has authored a book for the general public, now in press with W. W. Norton, titled *The Animal Connection*. "No other mammal routinely adopts other species in the wild -- no gazelles take in baby cheetahs, no mountain lions raise baby deer," Shipman said. "Every mouthful you feed to another species is one that your own children do not eat. On the face of it, caring for another species is maladaptive, so why do we humans do this?"

Shipman suggests that the animal connection was prompted by the invention of [stone tools](#) 2.6-million years ago. "Having sharp tools transformed wimpy human ancestors into effective predators who left many cut marks on the [fossilized bones](#) of their prey," Shipman said. Becoming a predator also put our ancestors into direct competition with other carnivores for carcasses and prey. As Shipman explains, the [human ancestors](#) who learned to observe and understand the behavior of potential prey obtained more meat. "Those who also focused on the behavior of potential competitors reaped a double [evolutionary advantage](#) for natural selection," she said.

Over time, Shipman explains, the volume of information about animals increased, the evolutionary benefits of communicating this knowledge to others increased, and language evolved as an external means of handling and communicating information through symbols. "Though we cannot discover the earliest use of language itself, we can learn something from the earliest prehistoric art with unambiguous content. Nearly all of these artworks depict animals. Other potentially vital topics - edible plants, water, tools or weapons, or relationships among humans -- are rarely if ever shown," Shipman said. She sees this disproportion as evidence that the evolutionary pressure to develop an external means of storing and transmitting information -- symbolic language -- came primarily from

the animal connection.

Shipman concludes that detailed information about animals became so advantageous that our ancestors began to nurture wild animals -- a practice that led to the domestication of the dog about 32,000 years ago. She argues that, if ensuring a steady supply of meat was the point of domesticating animals, as traditionally has been assumed, then dogs would be a very poor choice as an early domesticated species. "Why would you take a ferocious animal like a wolf, bring it into your family and home, and think this was advantageous?" Shipman asks. "Wolves eat so much meat themselves that raising them for food would be a losing proposition."



Domestic animals, like this water buffalo in Viet Nam, live intimately with humans and provide renewable resources to humans that communicate well with them. Credit: Photo by Greg Luna.

Shipman suggests, instead, that the primary impetus for domestication was to transform animals we had been observing intently for millennia into living tools during their peak years, then only later using their meat as food. "As living tools, different domestic animals offer immense

renewable resources for tasks such as tracking game, destroying rodents, protecting kin and goods, providing wool for warmth, moving humans and goods over long distances, and providing milk to human infants" she said.

Domestication, she explained, is a process that takes generations and puts selective pressure on abilities to observe, empathize, and communicate across species barriers. Once accomplished, the domestication of animals offers numerous advantages to those with these attributes. "The animal connection is an ancient and fundamentally human characteristic that has brought our lineage huge benefits over time," Shipman said. "Our connection with animals has been intimately involved with the evolution of two key human attributes -- tool making and language -- and with constructing the powerful ecological niche now held by modern humans."

Provided by Pennsylvania State University

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