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Did Eating Human Poop Play a Role in the Evolution of Dogs?

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The consumption of human feces may have influenced canine evolution.

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“Poop is central to the story of how dogs came into our lives," write Duke University dog researchers Brian Hare and Vanessa Woods in their wonderful new book, *Survival of the Friendliest: Understanding Our Origins and Rediscovering Our Common Humanity*. I think they may be right.

Molly, our beloved Labrador retriever, certainly loved to eat poop. Sometimes she would chow down on her own feces, and at other times, she preferred excrement of the cows that lived behind our house. Mary Jean and I found this practice (coprophagia) disgusting.

We were not alone. Ben Hart and his colleagues at the University of California at Davis School of Veterinary Medicine surveyed nearly 3,000 dog owners about their pet’s penchant for poop. Twenty-three percent of the owners had observed their dog eating feces, and 16 percent said their dogs did so frequently. Not surprisingly, many owners were grossed out by their pet’s dietary preferences. More than 900 of them had purchased at least one of the 11 commercial products that purport to reduce canine coprophagia. (None of them, unfortunately, worked.)

Hart and his colleagues hypothesize that canine feces-eating is essentially an obsolete trait that modern dogs inherited from their ancestors, grey wolves. They argued that the consumption of feces by wolves was an evolved adaptation that served to eliminate a major source of intestinal parasites near their dens. But Hare and Woods suggest that feces-eating may also have played an additional role in the evolution of dogs.

Feces Consumption and Canine Evolution

The anti-parasite hypothesis makes sense, but it does not explain why, when given the opportunity, dogs eat human feces. I first heard of this last year when Brian Hare and I were speakers at a dog symposium. Brian's talk focused on the genius of dogs, the notion that man's best friend has evolved a unique kind of social intelligence. But in an off-the-cuff remark to the audience, he casually mentioned a study of wolves and dogs in the mountains of Ethiopia. The dogs, it seems, but not the wolves, regularly consumed human feces. The idea spun my head around.

One of the most widely accepted theories of dog evolution is the *scavenger hypothesis* first proposed by Ray and Lorna Coppinger. They argued the evolution of dogs from wolves began when Paleolithic humans shifted away from roving groups of hunter-gatherers and began to form stable settlements. Along with settlements came garbage dumps. The Coppingers proposed that wolves that were more temperamentally tolerant of being around humans would have more access to an abundant new food supply. This would give them a leg up on the Darwinian competition for resources and facilitate the spread of genes associated with tameness. This self-domestication strategy was successful. There are now a billion dogs on Earth compared to 300,000 wolves.

But what did these early wolf-dogs eat? In his book Dog Sense, the anthrozoologist John Bradshaw points out that the scavenger/garbage dump hypothesis can't be the whole story. The emergence of dogs began between 15,000 and 25,000 years ago, well before the invention of agriculture which dates back only about 12,000 years. And Bradshaw doubts that hunter-gathers could produce enough garbage to make food scavenging worthwhile. He then raises, but quickly dismisses, the idea that human feces could have been an important source of energy for my dog Molly's ancestors.

A New Field of Research: "Interspecific Coprophagia Involving Human Excrement"

While I found the idea distasteful, I was intrigued by Brian's suggestion that the consumption of human shit may have played a role in the evolution of man's best friend. As soon I got home from the conference, I located the study of Ethiopian wolves and dogs he referred to. The research was by investigators from the Department of Biology at the University of Addis Ababa.

They wanted to know whether free-ranging dogs competed for food with endangered wolves which lived in Ethiopia's Bale Mountains National Park. The answer, they discovered, was no. Dogs rarely ventured into the wolves' territory, and the wolves and dogs had different dietary preferences. The wolves ate rodents almost exclusively. The dogs, however, had a more varied diet. In half of the 400 meals the researchers observed, the dogs dined on barley husks discarded by villagers. However, 21 percent of the dog's meals consisted of human poop, making it the second most popular item on the menu. (An analysis of 400 scat samples revealed the same result.)

I was also able to locate several other published reports on the consumption of human feces by dogs. The most extensive treatment of this unsavory topic is a series of papers by James Butler and his colleagues. They studied the diet of free-ranging dogs in Zimbabwe. Fifty-six percent of 1,000 dog scats they sampled included human feces. The dogs would roam from homestead to homestead, searching for garbage and poop. They would locate human feces by smell and dig it up if it was buried. As dog food goes, human feces was surprisingly nutritious. Indeed, Butler found that poop contained twice as much protein as the dogs' most common food (a porridge called sadza). He concluded human feces was "comparable to the upper range of energy content for mammal tissue, vegetables, and fruit."

In a 1996 paper, the anthropologist Fredrick Simoons documented many instances of human feces consumption in areas of sub-Saharan Africa. In Liberia and the Cameroons, a dog's waste disposal functions included licking the bottom of infants after they defecated. Simoons noted that the !Kung people of South Africa did not eat dog flesh because dogs eat human excrement.

More recently, the topic was discussed in a 2020 paper in the journal PLOS Neglected Tropical Diseases. It was a study of dogs as a reservoir of Guinea

worm parasites in which researchers found human feces was a major component of the diet of free-ranging dogs in Chad.

Reports from Field Researchers

I also heard from investigators who had encountered instances of feces-eating canines in the course of their field studies.

When I asked Bradley Smith, a researcher in Australia about whether dingos consume human feces, he wrote, “Indeed they do. In the Aboriginal Australian and dingo relationship and history. It is a key feature in some places.” And he pointed to a paper he published on the human-dingo relationships he published in the journal *Anthrozoo*s.

The Texas State University chimpanzee researcher Jill Pruetz said in an email that at her research site in Senegal, dogs play a big role in the “cleanup” of latrines. And she added that’s the reason dogs are not considered cuddly pets.

Jeremy Koster, who studies the relationships between Nicaraguan subsistence hunters and their dogs, pointed me to a paper he wrote with Kenneth Tankersley in the *North American Archaeologist*. They noted, "*Ethnographic studies show that human feces are consumed as a warm meal of a cold, hard, and chew snack by dogs on a regular basis in pre-industrial hunter-gatherer, horticultural, and agricultural-based economies*." However, he says that nowadays the presence of latrines largely prevents the consumption of human feces by dogs at his field site.

In the nearly 50 years the anthropologist Thomas Headland lived among the Agta people of the Philippines, he observed their relationships with many species of animals. (See, for example, Your Worst Animal Nightmare). In an email, he described the role dogs played as a mechanism of waste disposal in Agta villages. Every camp group had dogs, and they were connoisseurs of fresh human dung. Toddlers would run around naked, and when they got the urge, they simply squatted and defecated. Dogs would run over to the feces and “gobble it up within seconds.” And they would sometimes lick the child’s bottom. Older children and adults, however, would walk away from camp and defecate in privacy. Often, Headland wrote, dogs would follow them and “eat slowly some or most of the excrement.”

The Latrine Theory of Canine Evolution?

My reading of the relatively meager research on the consumption of poop by dogs suggests that Brian Hare is onto something. There is ample evidence that human feces can make up a substantial proportion of the daily diet of free-ranging dogs. And, from a dog's point of view, human feces appears to be tasty and surprisingly nutritious. Given its nutritional value and accessibility, it is certainly reasonable to think that in some places, poop-eating was involved in the evolution of dogs.

At one level, I find this idea decidedly unappealing, but it does raise interesting questions. For example, do grey wolves find human poop yummy? How does the nutritional value of human feces compare to that of doggie-doo? And is interspecific canine coprophagia common in areas where humans lack indoor toilets?

As is always the case in science, "more research is needed."

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