

Feeding Behavior of the Dog, Cat, and Fish

ABSTRACT

All animals need to eat to sustain life. This paper is looking at feeding behavior of three specific species; dogs, cats, and fish. Although dogs and cats have evolved from the wild wolf and wildcat, they both have kept qualities of their feeding behavior. Fish on the other hand have not necessarily evolved from an animal, but they also have unique feeding behavior characteristics. It is important owners know these feeding behaviors to properly feed their pets the correct amount of food, as well as the correct type of food.

INTRODUCTION

The wolf's natural hunting and eating behavior corresponds with observations found from a domesticated dog's eating behavior. The wildcat's natural hunting and eating behavior also corresponds with observations found from a domesticated cat's eating behavior. In this paper there was an observation made of the three species and then research preceded to scientifically ask why they do these behaviors. After doing further research it is concluded that most of my observations were found in fact found in the literature.

METHODS

The dog observed is a two-year-old male. He eats 1.5 cups of Purina One SmartBlend Healthy Weight twice a day, in the morning and at night, for a total of 3 cups daily. He was recorded at night before bedtime. The dog was recorded for a total of one minute and nineteen seconds. In that time period he was able to eat all his food. The cat observed is a five-year-old male. He eats $\frac{1}{2}$ cup of Purina One Indoor Advantage twice a day, in the

morning and at night, for a total of 1 cup daily. He was recorded in the morning when he woke up. The cat was recorded for a total of one minute and forty-nine seconds. In that time period he did not finish his food. The fish observed were Platye Fish, Big Belly Molly Fish, and some crosses of those two breeds. They get two pinches of Omega One Flakes twice a day for a total of four pinches daily. They were recorded in the morning when they woke up. They were recorded for a total of forty-seven seconds. In that time period most of the food in the fish tank was eaten.

Table 1: Dog Food

Ingredients	Guaranteed Analysis
Turkey (Source of Glucosamine), Brewers Rice, Soybean Meal, Corn Gluten Meal, Poultry By-Product Meal (Source of Glucosamine), Oat Meal, Whole Grain Wheat, Corn Germ Meal, Whole Grain Corn, Soybean Germ Meal...	Crude Protein (Min)...27.0% Crude Fat (Min)...8.0% Crude Fat (Max)...12.0% Crude Fiber (Max)...5.5% Moisture (Max)...12.0% Linoleic Acid (Min)...1.3% Calcium (Ca) (Min)...0.9% Phosphorus (P) (Min)...0.7% Zinc (Zn) (Min)...150 mg/kg Selenium (Se) (Min)...0.35 mg/kg Vitamin A (Min)...13,000 IU/kg Vitamin E (Min)...250 IU/kg Glucosamine* (Min)...400 ppm Omega-6 Fatty Acids* (Min)...1.5% *Not recognized as an essential nutrient by the AAFCO Dog Food Nutrient Profiles.

Table 2: Cat Food

Ingredients	Guaranteed Analysis
Turkey, Brewers Rice, Corn Gluten Meal, Poultry By-Product Meal, Soybean Meal, Whole Grain Corn, Fish Meal, Dried Yeast, Powdered Cellulose, Soy Protein Isolate, Animal Fat Preserved with Mixed-Tocopherols, Soybean Hulls, Animal Liver Flavor, Phosphoric Acid...	Crude Protein (Min)...38.0% Crude Fat (Min)...8.5% Crude Fiber (Max)...4.3% Moisture (Max)...12.0% Linoleic Acid (Min)...1.4% Calcium (Ca)(Min)...1.0% Phosphorus (P)(Min)...0.9%

	Zinc (Zn)(Min)...150mg/kg Selenium (Se)(Min)...0.35mg/kg Vitamin A (Min)...10,000 IU/kg Vitamin D (Min)...800 IU/kg Vitamin E (Min)...100 IU/kg, Taurine (Min)...0.15% Omega-6 Fatty Acids* (Min)...1.5% *Not recognized as an essential nutrient by the AAFCO Cat Food Nutrient Profiles.
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Table 3: Fish Food

Ingredients	Guaranteed Analysis
Whole Salmon, Black Cod, Whole Heming, Seafood Mix(Including Krill, Shrimp and Octopus). Wheat Flour, Wheat Gluten, Soy Flour, Fresh Kelp, Lecithin...	Crude Protein (min) 42.0% Crude Fat (min.) 11.0% Crude Fiber (max.) 2.0% Moisture (max.) 8.5% Ash (max.) 8.0% Phosphorus (min.) 0.5% Omega 3 (min.) 2.0% Omega 6 (min.) 1.0%

RESULTS

The dog being observed liked to grab a mouth full of food and take it away from where it was fed and drop it on the floor. After that, he proceeded to eat it. He also liked to eat his food extremely fast, almost like he was inhaling it. The video looked like the dog used mostly his tongue with the help of his teeth to pick up the food and proceeded to chew the food and swallow it. The dog did not drink before, during, nor after he eat. The cat being observed eats his food very slowly. Even though he is fed twice a day, he never ate all of his food in one sitting. He liked to eat a little amount in one sitting and a lot throughout the day. He used his tongue to pick up the food and proceed to chew the food and swallow it. He did not drink before, during, nor after he ate. However, every time he is done eating he

would lick his lips for a while and then lick his paw and whipped his face to clean his face more. The fish being observed also ate their food very quickly. They liked to follow who ever are feeding them as they moved around the tank to drop the food evenly throughout it. When the fish would want to pick up a pellet of food, it almost looked like it would suction the food into its mouth and swim on to the next pellet of food.

Table 4: Dog Feeding Behavior Ethogram adapted from (Stanton, Sullivan, Fazio, 2015)

Term	Definition
Look	Eye contact made with food
Lick	Tongue protruding from the mouth to pick up food
Bite	Using teeth to help pick up food
Chew	Grinding food in the mouth while not picking up more food
Eat	Ingesting food by chewing and swallowing
Sit	All paws and hind on the floor
Walk	Using legs to move calmly from one place to the other
Spit	Releasing a mouthful of food and re-eating it

Table 5: Cat Feeding Behavior Ethogram adapted from (Stanton, Sullivan, Fazio, 2015)

Term	Definition
Look	Eye contact made with food
Lick	Tongue protrudes from the mouth to pick up the food
Bite	Using teeth to help pick up food
Chew	Grinding food in its mouth while not picking up more food
Eat	Ingesting food by chewing and swallowing
Groom	Licking itself to clean the food from the face
Sit	All paws and hind on the floor
Movement	Uses head to look around

Table 6: Fish Feeding Behavior Ethogram adapted from (Stanton, Sullivan, Fazio, 2015)

Term	Definition
Swim	Moving around in the water
Eat	Ingesting food by swallowing
Search	Moving around looking for food

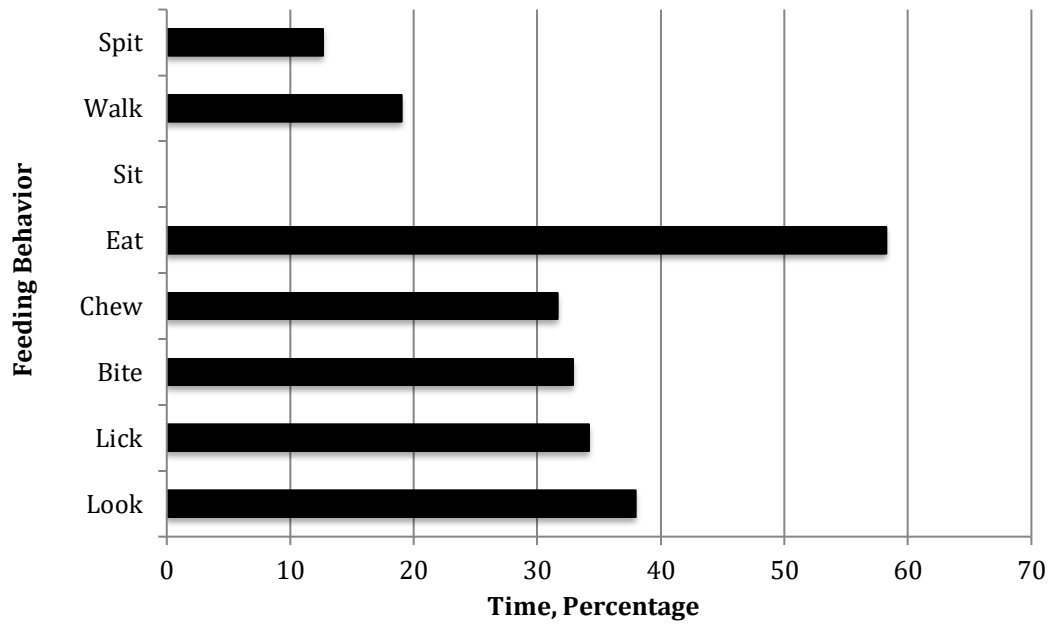


Figure 1: Percentage of each feeding behavior of the dog while being observed.

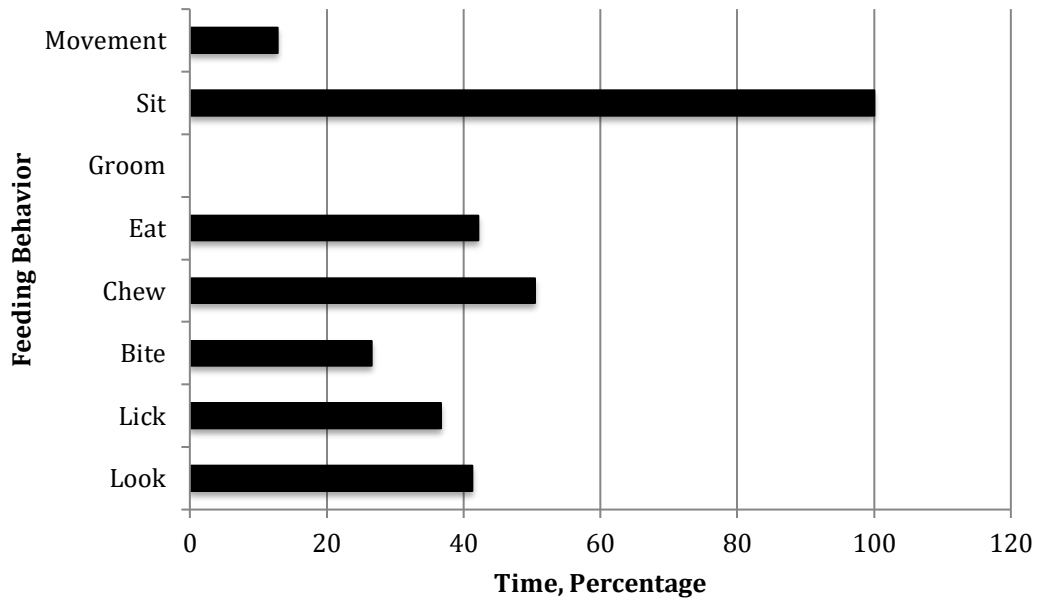


Figure 2: Percentage of each feeding behavior of the cat while being observed.

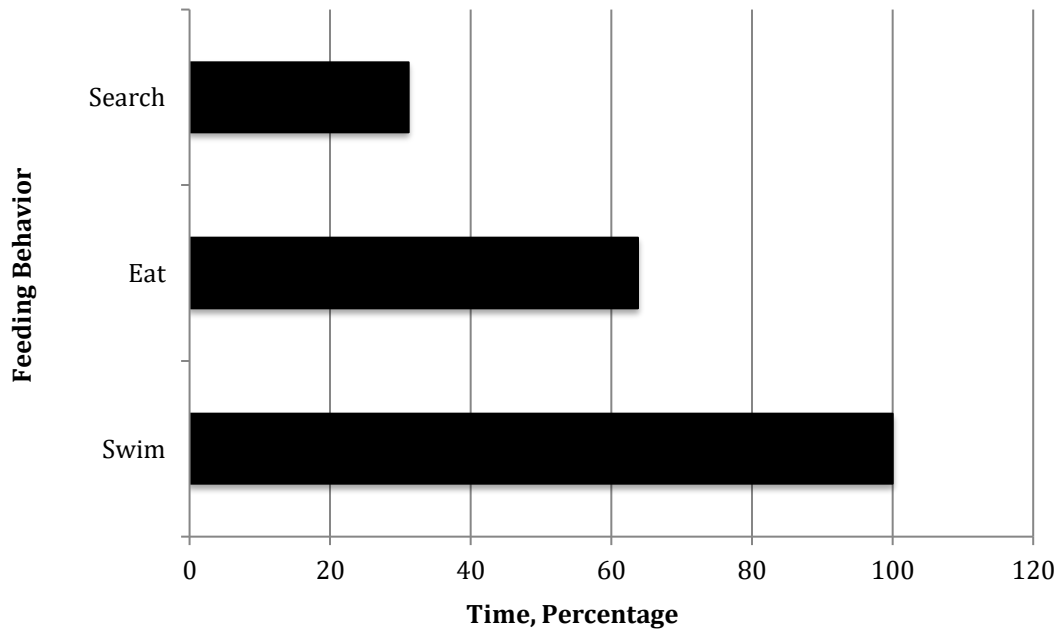


Figure 3: Percentage of each feeding behavior of the fish while being observed.

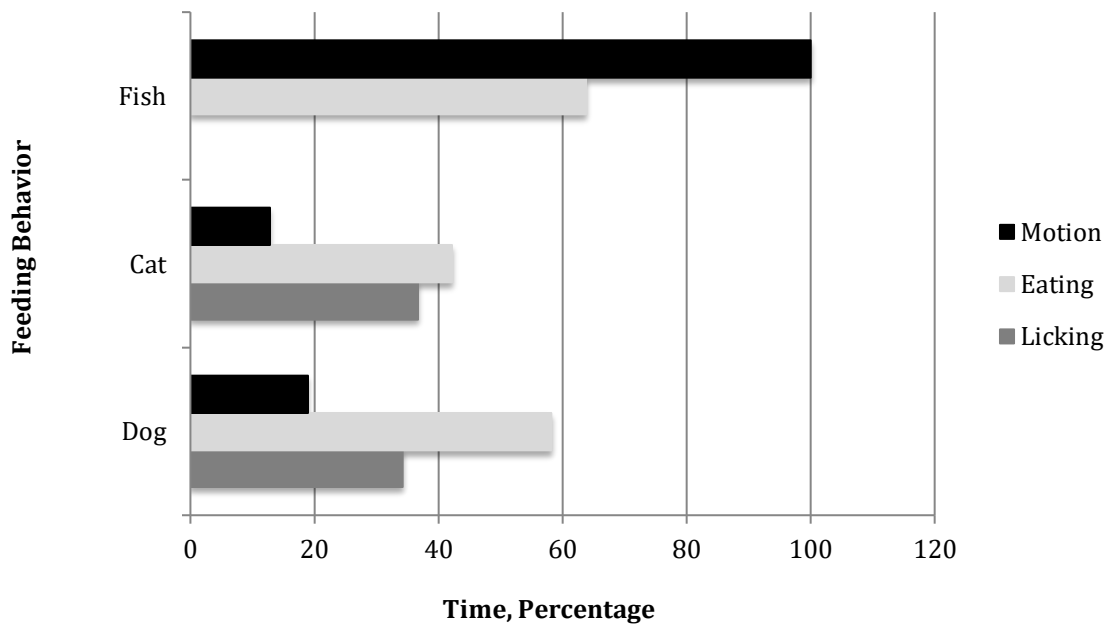


Figure 4: Percent of time of some feeding behaviors for dog, cat, and fish

DISCUSSION

The domestic dog and cat are in the Carnivora family. (Bradshaw, 2006) This is why both normally will have some sort of meat protein as their first ingredient in their food.

Domesticated dogs have evolved from *canis lupus* years and years ago. The wolf is a hunting animal and when a pack of wolves found their prey animal, they would hunt and kill it. The alpha wolves would be able to eat first and when they were satisfied, the rest of the pack can eat what was left. Because of this, the pack had to eat quickly in order to ensure they were able to have food. (Bradshaw, 2006) This correlates with the observation found about the dog eating his food extremely fast. This is important for owners to know so that they understand this is part of their evolution and they are feeding their dog enough and they do not need to feed their dog more just because they eat their food quickly. There was no literature found on why dogs pick up their food and move it to a different location, however. Domesticated cats have evolved from *felis silvestris* years and years ago. These animals are also hunters. However, they hunt small animals such as mice and birds often throughout the day. (Bradshaw, 2006) This correlates with the observation of the cat liking to eat a little bit of his food frequently throughout the day. This is important for owners to know because the cats will still need their full requirement of food throughout the day even if they do not eat it all at once. Owners should not cut back on food intake just because they think their cats do not eat it all. Cats will use their canine teeth to cut the vertebra of their prey and also use their carnassials for shearing the flesh from the bone. They also have papilla to help grab everything off of the bone of their prey animals. (Bradshaw, 2006) There was not found research on why cats lick their lips and proceed to lick their paw and wipe their face after they are done eating. Fish do not have hands so the way they eat is by

“vacuuming” up their food. They open their mouth and then expand their buccal cavity followed by creating a low pressure in the water. This causes the water to rush into their mouth. When they close their mouth, the food will then become trapped in and the excess water will be released through their gills. (Lepley, 2011) This finding also correlates with the observation that it looked like the fish was sucking in water as they were eating the pellets of food.

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