



# The Evolving Human-Animal Bond: One Health Implications

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# Impact of Companion Animals

- Health
- Diet
- Environment

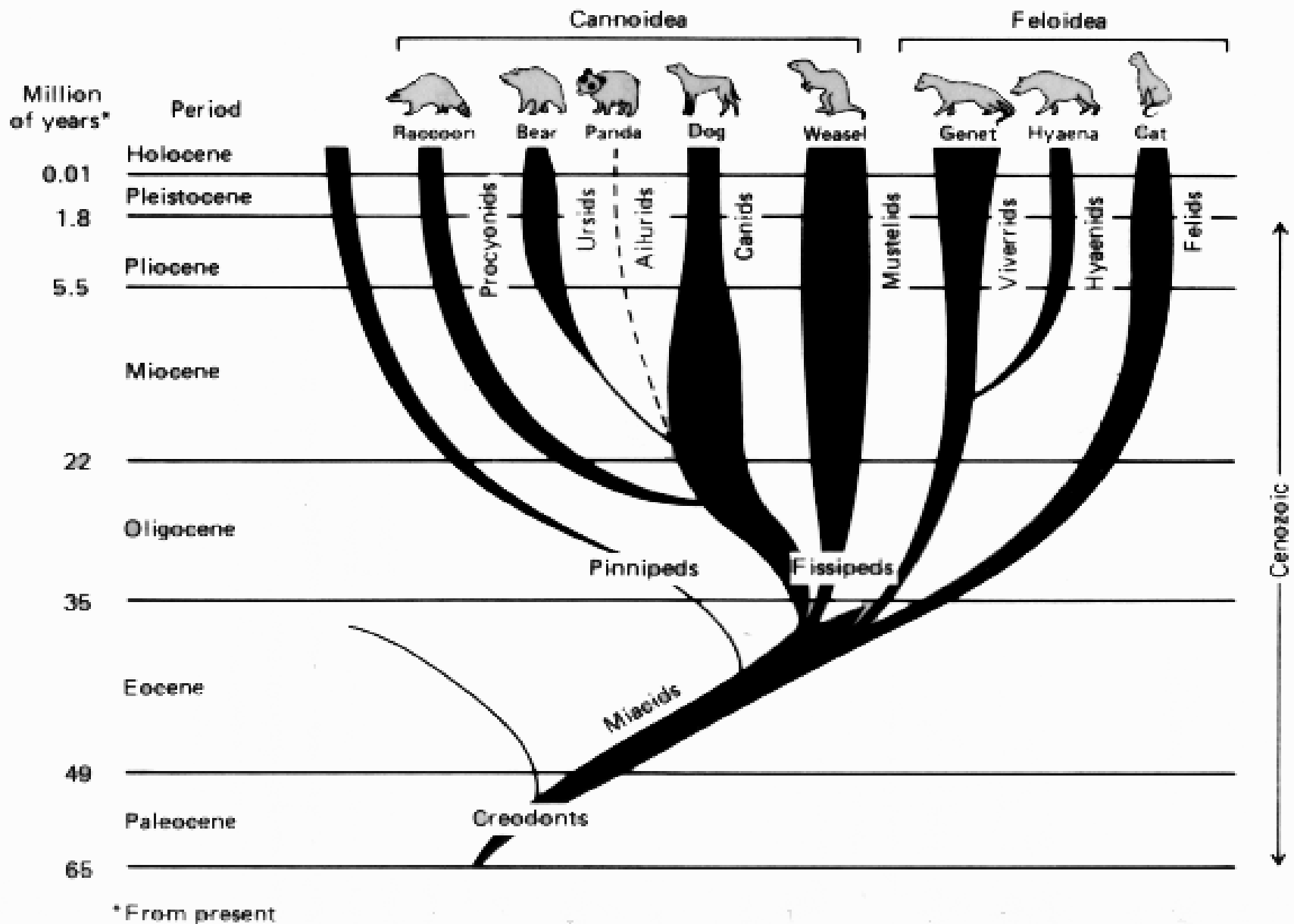


Fig. 1. Evolution of the Fissiped carnivores, showing the relationship of the dog to carnivores with omnivorous dietary habits and the cat with those which are strictly carnivorous. (Adapted from Romer, 1966; Colbert, 1980 and Morris & Rogers, 1983a.)

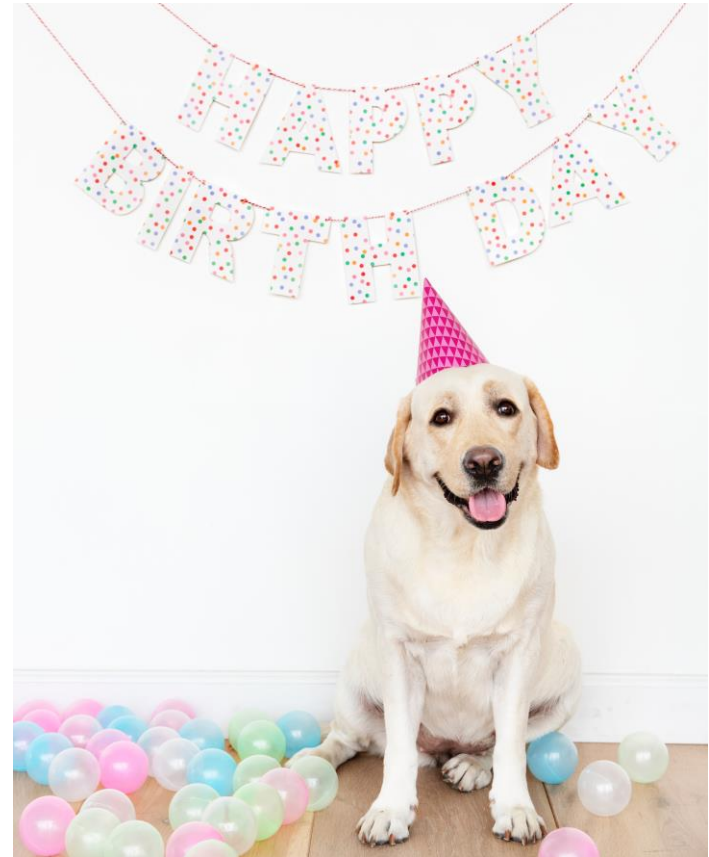
# Impact of Companion Animals

## US 2017

- 90 million dogs
- 94 million cats
- 48 million households (39%) have at least one dog
- 30.3 million households (25%) have at least one cat

# Impact of Companion Animals

- 63% of Pet owners surveyed said that their pets are treated like a member of the family
- 3 out of 4 dog owners celebrate their pets' birthday



# Impact of Companion Animals

## Pet Food Industry 2018

US

- \$33 billion
- 25% 'natural' pet foods
- \$4.4 billion spent on treats

Global

- \$91 billion



# Obesity in Companion Animals

- 1 in 3 dogs or cats in the US are overweight
- Global Problem
  - UK 59% of dogs and 59% of cats
  - France 39% of dogs and 27% of cats
  - Australia 41% of dogs
  - New Zealand 63% of cats
  - China 44% of dogs

# Obesity in Companion Animals

## Implications for Pet Health

- Orthopedic Disease
- Diabetes Mellitus (cats)
- Reduced Lifespan





# Challenges and Unanswered Questions

- Understanding the true causes of obesity
- Finding successful strategies for long-term maintenance of weight loss
- Finding successful strategies for prevention

# Opportunities for Comparative and Translational Research

- Fundamental questions regarding the biological and behavioral causes of obesity
- Evaluation of dietary components or strategies on weight loss and/or long term maintenance of weight loss



People & Pets Exercising Together  
can help keep you and your pet healthy.

DISCOVER HOW >



Read about the unique new weight loss study for overweight dogs and their owners.

Kushner RF, Jackson Blatner D, Jewell DE, Rudloff K.  
The PPET Study: People and Pets Exercising Together  
Obesity 2006;14(10):1762-1770

# Food Trends

## Human food trends often drive pet food product innovation

- Natural pet foods
- Functional ingredients
- Clean label claims
- Sustainability

# Grain-free Pet Foods

**Most pet owners do not recognize that, like other animals, dogs and cats require specific nutrients – not specific ingredients**



# Grain-free Pet Foods

- Even though dogs and cats have some unique metabolic and dietary requirements, these targets can be reached with a wide variety of ingredient sources.
- Energy input of animal-based protein is ~11 times that of grain-based proteins

# Grain-free Pet Foods

- Increasing numbers of dogs presenting with dilated cardiomyopathy
- A recent FDA investigation of 321 cases found:
  - The foods were predominantly dry (92%)
  - 90% of the dog foods were labeled grain-free
  - the remaining 10% were labeled vegetarian, vegan, or contained brown rice
  - A large proportion of the foods contained peas or lentils high on the ingredients list (92%)

# Sustainability

**Meeting the needs of the present without compromising the ability of future generations to meet their needs.**

- Environmental impact
- Social equity
- Long term profitability



# Sustainability

## By-Products in Pet Foods

- 'secondary products produced in addition to the principle products'
- Hundreds of human food by-products are used in the animal feed industry, e.g.,
  - brewer's rice
  - organ meats
- Use of by-products in pet food manufacturing lightens the burden of the human food system

# Sustainability

## Sustainable Pet Food Manufacturing Practices

- Choose sustainable formulations based upon ingredient formulation and nutrient composition
- Source ingredients from suppliers that integrate sustainability efforts into their work streams
- Educate consumers about the benefits of formulating pet foods from by-products
- Address pet obesity both for health benefits for pets and the impact of overconsumption on the sustainability of the pet food industry

