Animal Studies Bibliography

Kellert, Stephen R. 1985. Attitudes toward animals: Age-related development among children. *Journal of Environmental Education* 16(3): 29-39.

Purpose : To assess children's knowledge of, attitudes toward, and behavioral contact with animals. [No hypothesis given.]

Independent variables/operational definitions : age (grade 2, 5, 8, or 11), sex, ethnicity (B/W), urban/rural residence, animal-related activity group (e.g. hunting, birdwatching, learning about animals in school, watching Wild Kingdom, visiting zoos, raising livestock, reading about animals, owning a pet, etc.)

Dependent variables/operational definitions : knowledge of animals (series of questions using pencil-and-paper, pictures, and film formats, addressing animals' biological characteristics, foods they eat, ecological relationships, and identifying animals by sight); attitudes toward animals (using Kellert's survey items and typology--naturalistic, ecologistic, etc.)

Findings : Children generally had little knowledge about animals. Compared with adults surveyed in a previous study, children (especially 11th graders) knew considerably more about invertebrates and basic biological characteristics (e.g. snakes are covered in slime, spiders have 10 legs). Adults scored significantly better on questions regarding animals causing damage to people or property. Children and adults scored similarly on taxonomic questions (e.g. koala bears are not really bears) and neither group knew much about endangered species. Most children could correctly identify a number of animal species (from pictures) such as bluejay, eagle, and dolphin, but fewer could identify animals like a duck-billed platypus or a bobwhite. Children were also knowledgeable about what foods many animals (e.g. caterpillars, rabbits, mice) eat, though only small numbers knew all what trout, deer, and bobcats ate. Age differences were highly significant, with 11th graders knowing the most. However, the increase from 8th to 11th grade was less than previous jumps, and there was little difference between 11th graders and adults over 18, indicating that the effect of age is most significant among younger children. Black children scored very poorly, with the lowest score except for 2nd graders', and the difference remained after controlling for other factors (e.g. urban/rural). Rural children scored much higher than did urban children (2nd highest scores compared to 3rd lowest). Sex differences were only significant at the .02 level and were most significant when the animal involved was a predator--males knew more about them and females had more negative views toward them.

The humanistic attitude was the most common among the children, with emotional attachment to individual animals and anthropomorphism the most common views found in the children. Naturalistic and negativistic attitudes were the 2nd and 3rd most popular; since they are negatively correlated, this suggests that children have conflicting views about animals. Moralistic attitudes ranked 4th, with children opposing fur farming and trophy hunting but 60% supporting hunting for food. Utilitarian attitudes were fifth, suggesting that children care about animals for recreational and emotional purposes rather than for usefulness. Dominionistic attitudes rarely occurred, and scientistic and ecologistic attitudes came in last, suggesting that children do not have a conceptual understanding of animals. Compared to adults, children were much ore likely to be naturalistic and much less likely to be utilitarian toward animals. Age differences were significant: younger children were less interested in and concerned with animals, exhibiting high negativistic, dominionistic, and utilitarian scores than decreased with age. Similarly, naturalistic, moralistic, and ecologistic attitudes increased with age. This suggests both that our common-sense notion of children's love for animals is erroneous, and that education for young children should focus on increasing empathy for animals. From 5th to 8th grade, children gained significant knowledge, suggesting that education at that age should focus on factual information. 11th graders showed much more interest than 8th graders in interacting with animals and had much higher concern for animals (moralistic) and awareness of issues like biodiversity, and thus education at this level should involve ethics and ecology. Three stages thus appeared: from 2nd to 5th grade, increase in care and empathy for animals; from 5th to 8th grade, increase in knowledge; from 8th to 11th grade, increase in ethical and ecological concern. Sex differences appeared on the dominionistic, ecologistic, humanistic, negativistic, and knowledge scales, and moderately on the utilitarian scale. Males knew more and were more concerned about wildlife, but females were more opposed to domination of animals and showed more affection for large, attractive, primarily domestic pet animals (34). Gender differences on these scales were significant at all age levels except among 2nd graders on the knowledge, ecologistic, and moralistic scales. Girls' biggest change was increased moralistic concern between 8th and 11th grades, whereas boys gained considerably in knowledge and concern about wildlife and the environment with age. White children showed much greater knowledge of, affection for, and interest in animals (especially wildlife) than black children, who were more willing to support human domination of animals. Black-white differences thus appeared on all but the scientistic and moralistic scales, and these differences remained the same at all age groups. There were few urban/rural differences except on the

negativistic and knowledge scales. Rural kids knew more and were more interested in animals, although suburban kids showed a significant increase in knowledge.

Children who frequently studied animals in school or visited zoos showed surprisingly low knowledge and high negativistic scores, suggesting that these activities are not successful. Children who frequently birdwatched, hunted, or belonged to animal-related clubs were more appreciative, knowledgeable, and concerned about animals (36), suggesting that direct contact with animals is an important tool in learning and attitude formation.

Sample/population sampled : 267 children from Connecticut, evenly distributed among 2nd, 5th, 8th, and 11th grades and with representative numbers of black/white, urban/rural, and sex. Not a random sample of children because of exploratory nature of the study.

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