PERCEPTIONS OF ANIMALS IN PRIMARY SCHOOL CHILDREN

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Abstract

This study aimed to verify the perceptions of animals in 88 children, aged between 8 and 10, attending the 3rd and 4th years in primary school. To this end, a questionnaire was applied, with a seven point like/dislike scale for twenty five animals also inquiring about the reasons for the ranking attributed. The dog, the horse, the tortoise, the sparrow and the butterfly received the best rakings places; the cockroach, the mosquito, the snake, the mouse and the bee got the worst ones. More opposite opinions were expressed about the bat, the mouse, the boar, the wolf and the shark. Because the reasons given by children frequently reflect the lack of knowledge about certain behaviours of the animals and of their ecological role, some suggestions are made to change some of the bad perceptions that children have about the animals with the lowest ranking.

Keywords: Perceptions, animals, primary school, children.

1 INTRODUCTION

It is important to identify people´s perceptions about animals because they influence their attitudes and behaviours to them and affect human-nature relationship and our own impact on the natural world. These perceptions are influenced by a number of factors, and among these factors human rationality is frequently not the most important one. In fact, as [1] Herzog (2010) emphasises, our thinking and behaviour concerning different animals are often completely illogical. That´s why he argues that "the paradoxes that plague our interactions with other species are due to the fact that much of our thinking is a mire of instinct, learning, language, culture, intuition, and our reliance on mental shortcuts", (p. 39).

Trying to decide what kinds of species are important to preserve in a world where biodiversity is declining sharply, is a very controversial subject, due the inconsistencies already described. Even animal rights advocates show their own inconsistencies. As [2] Miller (1998) reminds us, there are not a lot of campaigns to protect bats, spiders, sharks or snakes, normally animals with a bad image, and efforts remain almost focused on the large mammals. The reasons for this option are almost anthropocentric: some are "cute" and more complex biologically, with social lives very similar to our own, and the ecological role of the species is often forgotten. However, humans´ perceptions about different animals change with time. For decades whales, wolves and bats were wiped out, sometimes in a barbaric way, but the situation reversed. For instance, in many parts of the world whale watching substituted whaling ([3] Almeida, 2002). [4] Franklin (2008) considers that these changes are the result of an altered paradigm in the human-animals relationship that reflects a less exploitative way of looking at animals and more concern about the impacts of human behaviour on nature. If this change is in fact occurring, it must affect children's perceptions about different animals. And, at the same time, it is possible that science education has a role to play in mitigating same of the inconsistencies of human behaviour already mentioned.

2 ANIMALS' PERCEPTIONS

Based on a national survey of more than three thousands individuals, [5] [6] Kellert (1980, 1989) was a pioneer in analysing the perceptions of animals by the North Americans. [6] Kellert (1989) using questionnaires, determined the attitudes, knowledge and preferences toward different animals, In the specific case of the American preferences, with thirty-three species ranked on a seven-point like/dislike scale, the results were a marked preference for two domestic animals, the dog and the

horse, for two familiar and aesthetic birds species, the swan and the robin, for an insect, the butterfly, and also for some game fish, the trout and the salmon; the favourite wild predator was the eagle and the wild mammal the elephant. With a low, and sometimes very low, preference were insect pests, the cockroach and the mosquito, and animals responsible for physical injuries or diseases like snakes and rats. Also with negative views were predators like the coyote and the wolf. However, these predators together with lizards, skunks, bats and vultures, in spite of their high ranking in the dislike scale, had also the highest std. deviation scores, which shows a very diverse range of opinions about them.

Based on these results and also on related literature, [6] Kellert (1989) suggests a number of important factors that may have a role in the preferences of Americans. So, the main factors for liking an animal species are: the big size, aesthetics, intelligence, strong relation with society and phylogenetic relatedness to humans. The main factors for disliking are: the danger to human beings, including the capacity for causing health problems or inflicting property damage, predatory tendencies and a more unfamiliar bodily structure to humans.

Since this study, more than twenty years have passed. Authors like [4] Franklin (2008), mentioned above, considerer that a new paradigm in human-animals relationship is becoming widespread in society, perhaps due to the environmental crisis affecting the planet. Thus, it is important to verify whether perceptions about certain animals, traditionally with a bad reputation, are also changing.

Some recent studies, while not focusing directly on the problem mention, can help to verify if this change is in fact occurring, especially in children. [7] Almeida et al. (2011) interviewed children, aged 8 to 10, about some real and hypothetical dilemmas involving human actions that can kill or perturb the following animals: seals, hedgehogs and a young fox. Almost all the interviewees criticized human actions and expressed empathy for the animals. However, a fifth of the children mention the danger of foxes to humans, that they can attack people and damage things, which is no doubt disproportionate and can reveal the bad influence of stories and myths on the dangers of certain animals. In view of this result, the authors of the study concluded that empathy for the other animals, even when human actions are ethically wrong, can be evaluated very differently.

Thus, [8] Almeida et al (2012) promoted a new study with a similar sample, with slight changes in the species presented in the ecological dilemmas. Instead of a seal, a mammal, the authors included a shark, a fish, which is normally viewed as a less friendly animal; the hedgehog, a small mammal, was substituted by a tortoise, a reptile and a less complex animal; and finally, the young fox by a young wolf, a hypothetically more dangerous animal.

The number of children that considered human action negative decreased when the situation involved sharks instead of seals, because they eat the fish that humans eat and also eat people. In the other two dilemmas, the changes from the hedgehog to the tortoise and from the young fox to the young wolf didn´t affect the results. However, the danger factor was also present in the dilemma involving the young wolf, with the same proportion of responses as in the question involving the young fox. These results show that children´s empathy for different species is not similar and that the reasons for that reflect sometimes unreasonable fears. Therefore, perhaps a new paradigm reflecting a new type of human-animals relationship is only beginning to emerge.

3   PROCEDURE

To verify the perceptions that children have about animals, a questionnaire similar to the Kellert's one was designed. The questionnaire listed twenty-five different animals and included a seven point like/dislike scale for each animal and asked a reason for each ranking. Some changes in the list of animals were also necessary to make it familiar to children´s cultural reality. Thus the raccoon, the skunk, the coyote were substituted by the tiger, the bear and the boar; the salmon and the trout were substituted by the codfish; the robin by the sparrow and the wasp by the bee. The whale and the pig were included, as well as the caterpillar, which is a part of the butterfly´s life cycle. Due to the age of the children involved in the present study, 8 to 11 (average 8,87 and std. deviation 0,770), a small decrease in the number of the animals presented in the questionnaire was also considered.

The questionnaire was applied to 88 children (48 boys and 40 girls), attending the 3rd and 4th year of a primary school in the suburban area of Lisbon (Portugal). This school is attended by low and middle-class children. The children were in five different school classes. The teachers that were responsible for these children are usually involved in initial teacher training courses. Before its application, the questionnaire was piloted with ten children of similar ages from another school. At first we thought that the questionnaire might be too long for the children, even considering the reformulations just

mentioned above. However, the children's reaction from the pilot-sample and from the sample was very positive and they were very interested in ranking their choices of animals with no sign of getting bored.

The questionnaire was always applied by the same researcher in each school class. The aims of the questionnaire were explained, and also how to use the ranking scale. The class teachers were present to help explain some doubts that could arise. The children of the study sample showed the same performance as those of the pilot sample: the majority of the children expressed their ideas clearly but, in some cases, we had some difficulties in understanding the reasons provided for the ranking ascribed, because they made a lot of spelling and grammar mistakes. Nevertheless, we decided to keep the questionnaire structure and ask the teachers involved in the study for some help with answers that we didn´t understand.

The reasons for liking or disking each animal were coded in the categories that Kellert found in his study. They were: size; aesthetics, intelligence, danger to humans, likelihood of inflicting property damage, predatory tendencies, phylogenetic relationship to humans, relationship to human society and body texture.

The reasons given by the children were not very elaborated and frequently resumed to a few words, for instance, "flies well" or a small sentence, "because it´s beautiful". Some examples of the answers given by the children are provided for a better understanding of their codification. In these cases, we accepted [9] Seidman´s (1998) recommendation that considers it important to make some corrections in the answers, when they have spelling or grammar mistakes, to preserve the dignity of the participants.

For the ranking scale, descriptive statistics were used to obtain the mean and std. deviation of each animal, and also the minimum and maximum obtained in the scale considered.

4   FINDINGS AND ANALYSIS

The results obtained in the ranking of the animals listed in the questionnaire are shown in Table 1 (next page). In this table, it is possible to read the mean, std. deviation, minimum and maximum value obtained for each animal. Due to space limitations, we decided to mention in the text only the five most liked and disliked animals and also the five with a highest std. deviation. However, some occasional references are made to other animals, when data are compared with Kellert´s study, and the results are somewhat surprising. The most liked animals were two domestic animals, the worse and the dog, a reptile, the tortoise, a small bird, the sparrow, and an insect, the butterfly. The reasons for liking horses and dogs were very similar. Most of the children emphasise aspects of their behaviour, a category not present in Kellert´s study, respectively running fast and be docile and gentle and friendly, nimble and a good smell; the interaction with humans was also mentioned: in the case of the horse, the fact that we can ride it, and in the case of the dog that we can play with it.

It was often also mentioned that they are both cute animals. In the case of the tortoise, the most mentioned reason was the fact that it is beautiful, especially its shell, or funny. The interactional dimension was also present, in references to its being sweet and easy to catch; aspects of its behavior pleased the children, like the fact that it can swim well, walks slowly, and hides in its shell. The sparrow was described as being cute and funny, and able to sing or chirp; the fact it is a small animal was also a positive feature. Finally, the butterfly was described as having very pretty colours and patterns and the children also referred to the way it flies and alights on flowers.

The animals that children said they liked less were three insects: the cockroach, the mosquito and the bee; a reptile, the snake; and a mammal, the mouse. The cockroach was considered nasty and ugly and even a useless animal. In the case of the mosquito, they pointed out the fact that it bites us, gets the blood and causes itching and makes bubbles. That´s why some children prefer to qualify the mosquito as an irritating and annoying animal. The snake was classified as dangerous: it can bit and kill us, of course because it is poisonous. One child answers that for snakes humans are preys. The mouse was also considered nasty and ugly, because it runs through the sewers, and it can transmit diseases; some children stressed the fact that it bites and chews and eats our food. However, a quarter of the children's sample said that mice are funny animals and a few expressed their appreciation for those that we can have at home. Due to different opinions, the mouse was one of the animals with the highest std. deviation. Finally, the bee, although many children stressed the fact that it produces honey, received mostly negative opinions because it stings us. However, as one child mentions: "it doesn´t sting for bad reasons, but only when it feels threatened".

Table 1: Children's ranking of the different animals present in the questionnaire. Higher scores indicate greater preference. Legend: A- Animals; R – Ranking; Min- Minimum; Max- Maximum; Mn- Mean SD - Std. Deviation

A \ R	Min	Max	Mn	SD
Horse	-7	7	6,3	2,02
Dog	-7	7	5,8	2,96
Tortoise	-5	7	5,4	2,61
Sparrow	-7	7	5,3	2,57
Butterfly	-7	7	4,9	3,63
Swan	-7	7	4,8	3,82
Elephant	-6	7	4,4	3,26
Eagle	-7	7	4,3	3,96
Whale	-7	7	4,1	3,88
Tiger	-7	7	3,4	4,97
Bear	-7	7	3,0	4,55
Wolf	-7	7	2,6	5,23
Cod	-7	7	2,5	4,73
Bat	-7	7	1,5	5,51
Lizard	-7	7	1,4	5,12
Boar	-7	7	0,1	5,27
Pig	-7	7	0,0	5,00
Caterpillar	-7	7	-0,6	5,42
Shark	-7	7	-0,7	5,62
Vulture	-7	7	-1,1	5,07
Bee	-7	7	-1,5	4,87
Mouse	-7	7	-1,9	5,34
Snake	-7	7	-2,1	5,69
Mosquito	-7	7	-3,01	4,30
Cockroach	-7	5	-4,6	3,55

The five with the highest std. deviation were four mammals: the bat, the mouse (for the reasons already explained), the boar and the wolf, and one fish, the shark. For some, the bat is cute, eats insects and the fact that it hangs upside-down is especially appreciated; for others, it is a bad, ugly and frightening animal that sucks blood. The boar is described as evil and ugly, and the fact that it rolls in the mud is considered a dirty habit. Its tusks receive opposite opinions; for the majority of the children they are a dangerous tool but some think they are funny. And a few children expressed their mixed feelings: "It´s a brutal animal but we can eat its meat". The wolf is considered a beautiful animal, especially the eyes, but the danger for us is often mentioned. The shark is considered by the majority of the children to be very dangerous, evil and capable of eating people; but, for some, it's a curious and beautiful animal and even the danger is considered an exciting thing. As one child wrote: "I just love dangerous animals".

Finally, it should be mentioned that predators as the tiger and the wolf are well ranked and even the bat, with such a bad image in stories and legends, has a positive mean. Very well ranked is the whale which was persecuted and considered a sea monster for decades. It is interesting to verify how the caterpillar was so bad ranked compared to the butterfly. Thus, the results of this study show that human perceptions about certain animals have improved, while others have remained, unreasonably, negative.

5   CONCLUSIONS AND EDUCATIONAL IMPLICATIONS

The results of this study show that it is important to approach already in, primary school, the perceptions and attitudes of humans to different animals, in the believe that school can have a role in changing some of the inconsistencies of human behaviour. Thus, teachers can deconstruct stories,

legends and superstitions about certain animals that have bad images. They can also discuss how the same animal can be seen very differently in different societies and cultures.

The ecological role of animals should also be approached. For instance, insects have an important ecosystemic role in web foods and also as pollinators, as do other animals. Understanding that role, we believe that animals start to be seen differently.

The characteristics of each species and its life cycle are also important. For instant, in the case of the boar, the behaviour of rolling in mud is in fact a healthy behaviour and not a dirty one, because doing this is a way to get rid of parasites; and we cannot have butterflies without caterpillars.

Finally, the perception of danger to humans must also be explored. In most cases it is unjustified. In a lot of countries, the majority of snakes are not poisonous, and the number of vampire bats is also low or non-existent. And even when animals attack us, normally they only do so when they feel threatened.

We give some suggestions to explore this subject, knowing that in each culture and society teachers should find the most suitable means to this end.

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