

PERCEPTION OF PUPILS OF BASIC EDUCATION ABOUT ZOOS: IDENTIFYING DIFFERENT PERSPECTIVES

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Abstract

Zoos are places often used by teachers, since they allow for both animals' observation and biodiversity contact. The Lisbon zoo opened in 1884 and is regularly visited by pupils of Basic Education, and only a few have never been there. In fact, many children only have the opportunity to see wildlife in zoos, where there is an attempt to combine scientific learning with entertainment, arguments that reveal an anthropocentric perspective.

However, zoos are controversial places and are subject to strong criticism. Proponents of a biocentric perspective, centred on animals, highlight the following negative aspects: i) the use of animals as means to our ends; ii) the deprivation of freedom and conditioning of their behaviours; iii) the inculcation of the idea that Man is superior to other species. As for the advocates of an ecocentric perspective, centred on the value of ecosystems, they emphasize the fragmented view of nature that zoos transmit. Even so, in this perspective, there is recognition that zoos can play a role in the conservation of species.

This study sought to determine how 124 pupils from a state school in Lisbon perceive zoos, in particularly the Lisbon zoo. The children, with an average age of 13, attended the 7th grade of schooling in 2014/15. To this end, a questionnaire with two parts was applied. In the first part, it was asked if the pupils had already visited the Lisbon zoo or other similar space; they also had to identify three positive and three negative aspects associated with this place; In the second part, after collection of the first one, the pupils were asked to express their level of agreement (1, strongly disagree, to 5, strongly agree) concerning 18 statements expressing different ideas about zoos: 6 of them had an anthropocentric content (supporting zoos); 6 others, an ecocentric content (supporting zoos under certain conditions); and the other 6, a biocentric content (opposing to these spaces). An average for each perspective was obtained and the averages were compared with a Multivariate Test (3 factors) within subjects.

The results showed that only 4 (3.2%) pupils had never visited a zoo. Concerning the positive aspects of the Lisbon zoo, a large majority emphasized the contact with animals (75%), the offered services and entertainment (56.5%), as the cable car and the fast food restaurants, and the animal shows (35.5%). Only 8.9% of the children reported aspects focused on animals, like the fact that they are well treated or the appropriate spaces where they lived; in relation to the negative aspects, 42.7% of the respondents focused on the general space conditions, especially the smell and dirtiness, in the presence of less beloved animals and in the weak interaction with animals, 22.6%, and 26% even said that zoos have nothing negative. Only 8.1% of the pupils mentioned the inadequacy of the spaces for animals and the absence of freedom. Accordingly, the 6 biocentric statements were those that received less agreement while the others expressing the anthropocentric and ecocentric perspectives emerged with a closer and higher average, with statistically significant differences ($p = 0.000$). The participants also revealed a full consistency in the responses in both parts of the questionnaire.

The results also suggest that children are slightly aware of the negative aspects of zoos, and indicate that the teachers that they had so far didn't stimulate much a discussion on this subject, if at all.

Keywords: Basic School, Zoos, Anthropocentric perspective, Biocentric perspective, Ecocentric perspective.

1 INTRODUCTION – THE BEGINNING OF ZOOLOGICAL GARDENS

Since a significant part of humanity has started to live in urban areas, the collections of animals emerged. As [1] Rothfels (2002) pointed out, the collections of unusual animals goes back to the most

ancient civilizations and we can report large and relevant collections in Babylonia, Greece or China. In the light of recent ideas, these collections could be a signal of our biophilic tendencies. As [2] [3] Wilson (1984, 1993) states, human beings have an innately emotional affiliation to the other living beings. This affiliation has been developed over thousands years in which humans lived as hunter-gatherer nomads, involved intensely and deeply by other organisms, a long period that corresponds to almost 99% of human history. That's why he argues that "a gene-culture coevolution is a plausible explanation for the origin of biophilia" ([3] Wilson, 1993, p. 33). Already in the relatively recent process of sedentarization, that led to the formation of the ancient civilizations, this affiliation persisted and the act of keeping animals in captivity can be placed within this trend, where curiosity, empathy, affection, fear, respect, fascination, attraction, aversion, exploitation and domination will be crossed.

However, it should be noted that the biophilic tendency is not often related with the existence of zoos by those who have dedicated themselves to their historical background. As [4] Baraty & Hardouin-Fugier explains, zoos arise as the continuity of menageries, a French term that derives from 'ménages', which means housekeeping. The term menagerie started to be used in the thirteenth century associated with farms and won its common sense as a place where aristocrats kept in captivity exotic animals. In fact, the discovery of new lands, especially after the fifteenth century, caused an expansion of trade, and a growing number of rare and curious animals came to Europe. Therefore, many princes and lords adapted the surroundings of their palaces to settle a great number of animals. Of course, these aristocrats may have felt a biophilic tendency that helps to justify this interest, but the main justification for this behaviour is that these menageries acted as symbols of status and power of the wealthy aristocratic class.

As a result of the huge changes in society after the industrial revolution, the creation of zoological gardens reflected also a new ideology for having animals in captivity. This change started with the Jardin des Plantes in Paris, and it was adopted by all the major zoos of Europe. At least, as [1] Rothfels (2002) mentions, in the gift shops of most of the major zoos there are books available telling a narrative of progress and development of these institutions into places that privilege scientific endeavor and public education, instead of menageries focused on the aggrandizement of their owners. However, to [1] Rothfels (2002), this linear narrative should be accepted critically; some menageries had also a scientific tradition and the educational value of zoos it is not something unquestionable. A similar opinion is exposed by [5] Berger (1980), who considers that the great zoos of London, Paris and Berlin brought prestige to these cities (probably the main reason for almost all of the capitals of the European countries to have a zoo) and that this prestige is very similar to the one intended by the private royal menageries. This author also refers to zoos as symbols of the colonial power of some countries, supporting their ideology of imperialism and representing the conquest of foreign lands. In contrary zoos have claimed and independent and civic function related to knowledge and public enlightenment.

If we find some truth in these opinions, at the same time it is impossible not to point out some changes, not only between menageries and zoos, but also in zoos during the last two centuries. Cages were substituted by more "natural" spaces, the conditions of animals were also improved and zoos have tried to emphasize their role in animal conservation. Even so, these places continue to be strongly related with a market dimension proven by the presence of a variety of shops and commercial amusements that include, frequently, shows with different kinds of animals.

2 ZOOS AS CONTROVERSIAL PLACES

[5] Berger (1980) states that zoos started their existence in the XIX century, when animals began to disappear from daily life, a trend that has been deepened till nowadays. To [6] Kellert (2005), the modern world has followed two complementary tendencies: direct experience in natural and semi-natural places has been decreasing; on the contrary, indirect experience in places where nature is managed, like zoos, aquariums or botanic gardens, is replacing direct experience. Therefore, millions of people around the world have already visited a zoo for recreational or educational purposes. Children are perhaps the biggest part of these visitors, visiting these institutions with their families or with their school teachers. What is the perception of children about these places is an important issue that we think is not sufficiently explored. In fact, this is a very important subject because zoos are very controversial places and to highlight their educational or scientific role is only one part of the whole picture. For [5] Berger (1980), zoos are places where the power of man above animals is demonstrated. Animals are marginalized and are nothing more than a spectacle. And in a more provocative way he affirms: "All sites of enforced marginalization – ghettos, shanty towns, prisons, madhouses, concentration camps – have something in common with zoos" (p. 26). Even changes in

the conditions of animals are mere cosmetic to give us the “illusion of freedom”, and the main reasons for these changes are only because we don’t feel comfortable seeing animals in cages anymore. [7] Malamud (1998) also argues that “zoos are fundamentally related to imperialism, consumerism, consumption, imprisonment, enslavement, sadism and voyeurism, and that captivity creates a perverted cultural representation of animals” (p. 153). The commercial dimension is also criticized and to [8] Desmond (1999) zoo shows hide the power of man above animals. The animal trainers control animals through force, restraint, confinement and domination, and any resistance of the animals is carefully hidden.

Underlining the present environmental crisis has helped to rethink the role and behaviour of the human being on the planet, which resulted in the affirmation of the important field of environmental ethics. This field showed a plurality of positions that reflect different ideas on how to look at environmental problems, their respective solutions and their relations with ecosystems and other living beings. Within these positions, it is possible to highlight three main perspectives: the anthropocentric, the biocentric and the ecocentric.

The anthropocentric perspective assumes the centrality of the human being and values nature from an instrumental point of view. Nature, of course, is important for us because it is a source of different resources and also allows us to satisfy a multiplicity of needs and interests that give meaning to human life; the biocentric perspective is focused on the intrinsic value of the other life forms, independently of their relevance to human beings; the ecocentric perspective values foremost the equilibrium of the ecosystems and of the ecosphere, which can impose limits on certain human activities.

Several environmental issues can be looked at in the light of these perspectives, and zoos are not an exception. [9] Almeida (2007), based on literature, was a pioneer in systematizing how zoos can be seen by each one of these perspectives.

In the anthropocentric perspective, zoos allow people contact with animals and the acquisition of scientific knowledge in a playful way. They are also considered relevant places for species conservation, and also important for tourist promotion; in the biocentric perspective zoos are indefensible places, since they restrict freedom and the natural behaviour of animals. Their role in conservation is insignificant, and is merely invoked to convince us of their importance; in the ecocentric perspective zoos convey a fragmented view of nature and display only large and showy animals that are not always those with a greater role in nature. Even so, zoos can play a role in animal conservation especially when they are focused on autochthonous animals from the regions where they operate, contributing effectively to combating the extinction of species by providing animals that can be reintroduced into the wild.

These different perspectives are quite interesting, since they allow to oppose arguments for and against zoos, helping citizens to build an informed opinion about these institutions. But has this controversial dimension of zoos been explored by teachers at schools, stimulating critical thinking in their pupils?

Before presenting the study that was developed, it is important to inform briefly about the Lisbon zoo. On its [10] homepage we can find enough information explaining the main lines of its intervention and the explanation of its role for those who want to plan a visit. We think that this characterization is necessary, since this study was conducted in the Lisbon area, and it is this zoo that the vast majority of pupils know better.

3 THE LISBON ZOO

The Lisbon zoo was opened in 1884 and is one of the oldest zoos in Europe. The colonial past of Portugal contributed to the diversity of animals kept during much of its existence, with many animals coming from Africa and Brazil. The following characterization seeks to translate in an objective way how the zoo is presented to the public, and does not set considerations about the veracity of this information. Therefore, we intend to summarize the ideas that the zoo aims to bring out to its visitors, as well as to characterize its offer at various levels.

The Lisbon zoo emphasizes how its ideological principles have been changed over time, highlighting its increasingly focus on the scientific dimension, in the context of biology, ethology and veterinary medicine in collaboration with several national and international institutions of higher education, and

on the educational dimension. The zoo also highlights the role of veterinary care to injured or sick native animals, that once treated are returned to the wild.

Its spaces have been improved in order to ensure better conditions for animals. For example, the small cemented cages that contained the biggest part of felines and primates have been replaced by larger spaces that recreate natural environments. These changes have had an impact on the reproductive success of various species, which reinforced the participation in reintroduction programs of several species. Some concrete cases are mentioned as the one of the black rhinoceros or Cape rhinoceros (*Diceros bicornis bicornis*) in South Africa, the Addax (*Addax nasomaculatus*) in Morocco or the Persian leopard (*Panthera pardus saxicolor*) in the Caucasus.

Improvements in animal conditions do not occur only at the level of spaces, with the zoo investing in environmental enrichment strategies that aim to stimulate the natural behaviour of the animals of each species. At this level the zoo highlights the following five modalities: social enrichment - maintenance of animals with a gregarious behaviour in the same space; food enrichment – promotion of food capture, even game, varying the degree of difficulty; physical enrichment, placement of structures and equipments such as ropes, nets, platforms, lakes, for instance; sensory enrichment, stimulation of the senses of animals through different smells and distinct textures; occupational enrichment, stimulation of animal activity with the introduction of objects or changing space conditions.

The recreational dimension of the zoo is also present with feeding sessions of various animals and especially shows, as the following: dolphins and sea lions and tropical birds in free flight. The zoo also has a small farm for contact with domestic animals and it can be visited by using a small train or a cable car, which allows a perspective of the whole area a few meters from the ground. The zoo also has a gift shop with t-shirts, books, teddies, etc. and a shopping area which includes the presence of several restaurants.

4 METHODOLOGY

This study was implemented in order to verify pupils' perceptions about zoos, especially about the Lisbon zoo. The main objectives were: i) to know if they had ever visited the Lisbon zoo; ii) to verify if pupils had a critical position in respect to this place, identifying the best and the worst it has to offer; iii) to verify if their thinking could fit predominantly one of the following perspectives: the anthropocentric, the biocentric or the ecocentric.

The sample consisted of 124 pupils, 62 of each gender, whose average age was 13 years. They were attending the 7th grade of schooling in a state school in Lisbon in 2014/15. It is a convenience sample, since the school was mainly selected because it has already shown receptivity to the development of other educational studies. The school is attended by children from a low to medium social background, having been classified as an Educational Territory of Priority Intervention for being attended by students who have special educational needs including learning difficulties and other dysfunctionalities.

To answer the study's objectives a questionnaire with two parts was administered. The first one sought to know if children had ever visited the Lisbon zoo and, in case of an affirmative answer, to mention three positive and three negative aspects of it. The second part consisted of 18 statements expressing different ideas about zoos: 6 had an anthropocentric content (supporting the existence of zoos), 6 a biocentric nature (opposing to its existence) and 6 ecocentric thinking (supporting partially its existence under certain conditions). The pupils were invited to express their level of agreement about each statement on a Likert scale from 1, strongly disagree to 5, strongly agree. The statements from each perspective were mixed and their order was determined at random. Its content is expressed in Table 1.

Table 1: The 18 statements, separated by perspective, included in the second part of the questionnaire.

Anthropocentric statements
2-The zoo must exist because it allows animals to live longer than when they are in nature.
6-The zoo is to show species that are beautiful and big since these are the ones that most please people.
8-The zoo is very important for people to see live animals.
9-The zoo is particularly important because it allows people to be entertained and to spend a nice day.
13 The animals exposed In the zoo like to display themselves to people.
15 The zoo is important because of the profit obtained through tickets sale.
Biocentric statements
1-In the zoo animals are used to humans enjoyment.
3-The zoo conveys the idea that Man is more important than the other species.
11-The zoo is an unnecessary space since we can know about animals by other means (tv, internet, books, etc.).
12- The zoo offers inadequate spaces for the needs of the animals.
14 The zoo is a very unimportant place, because the animals are out of their natural environment.
17- The zoo does not respect the animals rights because the animals are trapped.
Ecocentric statements
4-The zoo should give priority to species living in Portugal rather than to ones from other parts of the world to effectively prevent their extinction.
5-The zoo is only important if it recreates the natural habitats of animals, near to the conditions they have in nature.
7- The zoo conveys the idea that living animals are separated from each other in nature, not sharing the same space.
10- The zoo allows scientists to better study the animals and so prevent their extinction.
16- The zoo, because of the pups that are born there, allows that some animals can return to nature, thus avoiding the extinction of certain species.
18-The zoo is important since it allows a better understanding of the importance of animals in nature.

It should be noted that the second part of the questionnaire was only administrated after collecting the first part, to prevent pupils to mobilize ideas from the statements to respond to the positive and negative aspects of the Lisbon zoo.

The treatment of the responses of the first part was subject to content analysis and similar ideas expressed by pupils were included in the same category. In the second part, an average for each perspective has been obtained through the sum of the value in each of the six statements (from 1 to 5). Then, these means were compared using one-Factor ANOVA with three measures within the same subjects.

5 RESULTS

The results from the first part of the questionnaire allow us to confirm that almost all the pupils inquired had already visited the Lisbon zoo. In fact, only 4 (3.2%) had missed this experience. Even so, these 4 pupils had an idea of what a zoo is. Concerning the positive aspects that pupils highlight in the Lisbon zoo, the main ideas are presented and categorized in Table 2. We call attention to the fact that each pupil could mention three positive aspects but not all used this possibility.

Table 2: The positive aspects that pupils highlight in the Lisbon zoo.

The positive aspects of the Lisbon zoo	Frequency
- Contact with animals (reference to the animals in general or a few species in particular)	93 (75%)
- Offered spaces and entertainment (reference to the cable car, fastfood restaurants, gift shop and touristic train)	70 (56.5%)
- Shows with animals (reference to the show with dolphins and only one reference to the one with birds)	44 (35.5%)
- Modalities and conditions of the visits (reference to guided visits and information about each animal)	20 (16.1%)
- Conditions of captivity of the animals and the way they are treated (reference to the large space where the animals are, the fact that they are well treated)	14 (11.3%)

From the analysis of the table 2, a large majority of the pupils emphasized the direct contact with animals (75%). The following aspects in frequency are clearly related with entertainment. The first one, with 56.5% of the responses, is not even related with animals, with a lot of references to the existence of the cable car and also to the fastfood restaurants; the second one, with 35.5%, highlights the shows with animals, particularly the one with dolphins. With much less responses, 16.1%, are the aspects related with modalities and conditions of the visit. Even so, the pupils who referred ideas related to this category give importance to the quality of the scientific information given by the zoo. Finally, only with 11.3% of the responses, are ideas related with the conditions of captivity of animals, considered by all of these pupils as being good. This low percentage is also important to highlight because here are the only ideas really centred on animals and not on the visitor.

In relation to the negative aspects that pupils highlight in the Lisbon zoo, the main ideas are presented and categorized in Table 3. We also remember that each pupil could give three negative aspects but the majority had difficulties to refer the worst things of this place, only quoted one or two after a lot of thinking.

Table 3: The negative aspects that pupils highlight in Lisbon zoo.

The negative aspects of the Lisbon zoo	Frequency
-Conditions of the space (reference to the smell of the animals and to the garbage on the floor)	53 (42.7%)
-Contact with certain animals (reference to the animals that pupils don't particularly like, that steal things from people, that are in freedom out of the cage or that don't interact with the visitors)	28 (22.6%)
-Modalities and conditions of the visits (reference to the high price of the tickets and to the space, too crowded with people)	22 (17.7%)
-Offered services and infrastructures (reference to toilet conditions, to the antiquity of cable car, and to the absence of enough infrastructures, like restaurants or places to drink water)	16 (12.9%)
-Conditions of captivity of the animals (reference to the lack of adequacy of the animals' spaces, to the absence of freedom and to the fact that a few animals seems to be ill)	10 (8.1%)
The zoo has nothing negative	32 (26%)

In relation to the negative aspects, 42.7% of the respondents focused on the general space conditions, especially the smell from the animals but also the presence of garbage on the floor. The contact with certain animals was mentioned by 22.6%, especially at with less loved animals. However, in this category a few children also mentioned the weak interaction with animals, and, more surprising as a negative aspect, the presence of a few animals, namely peacocks, outside the cages. The modalities and conditions of the visits were mentioned by 17.7% of the pupils, and the negative appreciations were essentially related to the high price of the tickets and to the excess of visitors, especially in certain places. The offered spaces and infrastructures also received less good appreciations, and 12.9% of the pupils mentioned the bad quality of the toilets and also the inexistence of enough restaurants or places to drink water. Only 8.1% of the pupils mentioned aspects directly related to animals. These were the inadequacy of the animals' spaces, the absence of freedom and the less healthy state of a few animals. As was the case in the positive aspects, these aspects, centred on the animals, were also the least frequent. Finally, 26% of pupils even said that the Lisbon zoo has nothing negative.

The results of the second part of the questionnaire were analysed globally by perspective and not statement by statement. The mean of the 6 biocentric statements was 13,645 in 30 possible (6 x 5, if all the pupils totally agreed with them) a lower result when compared with the mean of the anthropocentric and ecocentric statements, that emerged with a closer and higher average, respectively 19,064 and 21,274. These means were compared using one-Factor ANOVA and the differences were statistically significant [$F(1,123) = 36,21, p < 0.001$]. The pupils also revealed a full consistency in the responses to both parts of the questionnaire, because biocentric arguments were the less used.

6 CONCLUSIONS

This study confirmed that zoos are places frequently visited by pupils, and only a tiny number of children had never visited one. In their responses, children demonstrate a total lack of knowledge about the controversy associated with these spaces. At the same time they revealed difficulties to identify negative aspects in the Lisbon zoo, especially the ones related with the conditions of the animals. Thus, this type of ideas were essentially focused on aspects that affect their welfare as visitors, like the smell from the animals, the commercial offer of the space, the conditions of the toilets or the ticket prices.

Also the positive aspects highlighted by the pupils, although stressing the importance of the contact with animals, were more related to the entertainment dimension, such as riding a cable car or going shopping at the gift shop. It is nevertheless troubling that a relatively high number of pupils considered the fast food restaurants as one of the best things of the zoo.

Therefore, the most relevant information provided by the Lisbon zoo on its homepage is ignored by pupils. Perhaps the most relevant absence in the responses was the role of the zoo in animal conservation, one of the aspects that the zoo emphasizes systematically, perhaps to justify its existence in a way not merely linked to entertainment.

Knowing that pupils have visited the Lisbon zoo with their parents or through school, it seems that the scientific and educational dimensions of this institution were not enough explored during the visits. In particular, the exploration made by their teachers seems to move away from the identification of the negative side of the zoos and from the controversy they generate. In fact, the importance of developing critical thinking in school, from the earliest years of schooling, has been emphasized by several authors (see, for instance, [11] Tenreiro-Vieira and Vieira, 2003). By confronting different perspectives about the existence of zoos, teachers had an interesting and motivating opportunity to promote them. However, the results suggest that at least the teachers of these students did not encourage such discussion or, if they did, it was in a very superficial way, with no perceptive impact in their pupils.

This study intended to be a first approach to this issue and the authors propose to develop it in the near future by extending the research to other countries.

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