ARTÍCULO DE INVESTIGACIÓN
https://dx.doi.org/10.14482/psdc.41.1.418.963

PSICOLOGÍA DESDE EL CARIBE

Assessment of Human Relationships with Other Animal Species

Evaluación de las relaciones humanas con otras especies animales

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Abstract

Few works explore the assessments that laypeople make about practices that involve animals. This study tests the multiple sorting tasks (MST) as a method to explore perceptions of animals. 115 people of different genders, and age groups, and the condition of owning a pet or not, assessed practices that make use of animals. The inquiry was made through an interview based on a conceptualisation of the free sortings of 18 cards with text and 18 images that contain practices involving animals, and whether the condition of having a pet or not influenced their conceptualisations. A multidimensional scaling analysis (MSA), indicates that people classify the practices based on the function animals have for society, however are worried about the conditions in which animals are used. The results discuss the importance that laypeople give to the ethics of animal uses, and the role of having a pet or not, showing that young people are more sensitive to the welfare of animals. The results conclude that the participants conceptualise images differently according to whether they are asked to evaluate the practice represented only by text; using images induces more moral conceptualisations than text. This demonstrates the utility of the MST and provides theoretical and practical implications for exploring people's perceptions and educating them on animal welfare.

Keywords: Animal assessment, animal legislation, animal welfare, ethics, MSA.

Resumen

Son pocos los trabajos que exploran las valoraciones que las personas del común hacen sobre las prácticas que involucran animales. Este estudio prueba la técnica de Clasificación Múltiple de Ítems (CMI) como método para explorar las percepciones sobre los animales. 115 personas de diferentes géneros, grupos de edad y el tener o no mascota evaluaron prácticas que hacen uso de animales. La indagación se realizó a través de una entrevista a partir de las clasificaciones libres de 18 tarjetas con texto y 18 imágenes que contienen prácticas con animales, y si la condición de tener mascota influía o no en las

Citación/referenciación: Páramo, P. y Burbano, A. (2024). Assessment of Human Relationships with Other Animal Species. *Psicología desde el Caribe*, *41*(1), 29-46.

Recibido: 13 de febrero de 2023
Aceptado: 14 de diciembre de 2023

conceptualizaciones. Un análisis de escalamiento multidimensional (MSA) indica que las personas clasifican las prácticas a partir de la función que tienen los animales para la sociedad, sin embargo, están preocupados por las condiciones en las que se utilizan. Los resultados discuten la importancia que las personas le dan a la ética de los usos que se hace de los animales y el papel de tener o no una mascota, mostrando que los jóvenes son más sensibles al bienestar de los animales. Los resultados concluyen que los participantes conceptualizan las imágenes de manera diferente según se les solicite evaluar la práctica representada solo por el texto; el uso de imágenes induce más conceptualizaciones morales que el texto. Esto demuestra la utilidad de la CMI y proporciona implicaciones teóricas y prácticas para explorar las percepciones de las personas y educarlas sobre el bienestar animal.

Palabras clave: Evaluación animal, legislación animal, bienestar animal, ética, CMI, MSA.

Introduction

Research has shown that other animal species possess significant learning and cognitive capacities, which are essential for the physical and emotional well-being of humans (Bennet et al., 2015; Fung, 2017; Dawkins, 2006; Gutiérrez et al., 2007; Lem et al., 2013; Silcox et al., 2014; Castro & Wasserman, 2016). Furthermore, many papers explore ethical questions and legal developments regarding the treatment given to these species. These studies examine how our culture uses other animal species in different social practices (Artiquez, 2013; Baquero, 2018; Valdivia, 2016; Berros, 2015).

Thanks to environmental movements and NGOs like Greenpeace, WWF, AHA, and PETA, society is now more cognizant of the threats of extinction and mistreatment faced by many non-human-animal-species (NHAS). This is evident in perception studies conducted in various countries.

A good percentage of these studies assess the attitudes of consumers, the influence of the media, and the knowledge and attitudes of people in general, regarding the welfare conditions of other NHAS (Buddle and Bray, 2019; Buddle et al., 2018; Platto et al., 2020; Vargas et al., 2017). Consequently, there has been an increase of regulations to control some of these practices.

Few studies have been conducted to investigate the opinions of ordinary people regarding social practices such as the situation with Pablo Escobar's escaped hippos from his estate, Hacienda Napoles, in Colombia. It is crucial to understand how people's age and gender affect their assessment of this issue, as well as to learn about the solutions they propose to solve the problem. In the 1980s, Pablo Escobar imported hippos from Africa, which is not their natural habitat, and they have since multiplied and are now negatively impacting the local ecosystem.

The aim of this research was to investigate the varied perceptions of animal-related social practices among individuals of diverse age groups and genders. The study sought to determine whether gender plays a role in these perceptions, as well as to assess how different age groups perceive these practices. Methodologically, the study aimed to evaluate the structure of these perceptions by comparing textual and visual presentations of these practices, and by exploring solutions to the hippo problem in Colombia through open-ended questioning.

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ISSN 2011-7485 (*on line*)

Method

Research design

A descriptive-correlational study that compares 11 data matrices corresponding to conceptualisations of different genders, groups of age, and people´s recommendations on how to handle the hippo problem from Pablo Escobar´s estate, Hacienda Nápoles.

Participants

A non-probabilistic sample of 114 people from different age groups (older than 18), levels of education, and gender (male and female), citizens of Bogotá, participated in this study. 35 identified the different social practices, 10 in the selection of images that represented these practices, and 69 in the sorting procedure (table).

Table. Number of participants in the MST

Age group	M	F	Total
Youth	8	12	20
Adults	17	18	35
Seniors	8	6	14
Total of participants in the MST	30	36	69

Instrument

Multiple sorting task

Questionnaires or semi-structured interviews may not provide enough information about how participants perceive a particular issue or what they consider important. Therefore, it is important to explore a person's understanding if the goal is to understand their assessments. The Multiple Sorting Task (MST) is an instrument that can be used to explore how people conceptualize the use of animals in different social practices. This task has been used in various studies such as Canter et al. (1985), Canter and Monteiro (1993), Páramo and Galvis (2010), Smith et al. (2013), Pinilla and Páramo (2017), and Jing et al. (2019).

The sorting task allows this to happen by providing material to be sorted, but then allowing the participant to categorise according to their concepts and constructs. In this way, the participants provide their conceptualisations, rather

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ISSN 2011-7485 (*on line*)

than the researchers imposing theirs on the participants. By providing the participant with a domain composed of a set of elements, the sorting task seeks to uncover the conceptual structure through which those participants understand them, and thus the nature of the interpretation of the elements upon which they make their assessment. As a result, the MST is useful for uncovering the conceptual structure that people use when they make an assessment. The study, therefore, used the MST to investigate how people conceptualise social practices that involve animals, and whether different evaluations are made if the participants are asked to evaluate texts, compared to the evaluations of the same practices presented in images (Pothos and Chater, 2002; Blanchard & Banerji, 2016; Jing et al., 2019).

The elements to be sorted were proposed by a sample of 35 participants who took part in the first phase of the study. They were asked to suggest different social practices that involved the use of animals in our society. Eighteen elements or items were taken of all the practices identified based on the more frequently mentioned: Bullfighting, rodeo, zoos, aquariums, anti-narcotic dogs, guide dogs, pets, biomedical research, education, psychological research, industry, tourism, animals as food, movies, artistic exhibitions, sport hunting, sport fishing, commerce, cockfighting. Every element was written into different cards. The group of images was selected by another group of 10 people after asking them from a set of images, which ones best represented each practice from the group of eighteen. A unique number was assigned to each card/image maintaining the same number for the cards. 69 people participated in the MST.

Procedure

The MST involved asking participants to allocate a set of objects or elements into groups of their own choosing following any criteria, making as few groups as they wish, this is known as free sorting. The participants were split into two similar groups, one to sort cards with texts, and the other with images.

The instructions asked participants to sort the cards including texts/images into piles such that they go together based on a perceived similarity between them, and repeat this task as many times as the participants could (Coxon, 1999). The main idea is to study the natural cognitive processing of information that individuals use to conceptualise a domain in particular. Once the task of free sorting of the 18 elements was completed the researchers asked the participants to sort the cards including texts/images following a criteria oriented by the research-

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ISSN 2011-7485 (*on line*)

ers based on the question: "Now, please sort the cards including texts/images into a scale of five points according to the level of mistreatment that these social practices involve, 1, being the least mistreatment, and 5 the most mistreatment". Finally, participants were asked in an open-ended question to give some suggestions about how to solve the hippos issue of the country.

Participants were informed about the purpose of the study, how their personal information would be treated and about their right to withdraw from the study without providing an explanation, before signing an informed consent form. The procedure at all instances complied with ethical rules for psychological research.

Statistical analysis

The data derived from the free and oriented sorts were analysed using a Multidimensional Scalogram Analysis (MSA) (Canter, 2019). In this type of statistical analysis, the groupings imposed by the participant on the elements to be sorted (images or cards) are represented by a row of data or 'profile', which can be compared with the profiles for all the other elements. Comparisons of the profiles show how every element, text/image, has been grouped in relation to the others.

The texts/images can then be plotted as points in space using the MSA. The more frequently images/cards have been grouped, the more similar their profiles, and therefore, the closer the points are to each other. Points that are distant from each other indicate that the image/card has generally been conceptually dissimilar in some way. So, the higher the correlation between element profiles, the smallest the corresponding distance. In this way, a group of items or elements closely related represents a psychological distance between these elements.

Results

The output plots from the MSA were divided by researchers into areas by reference to the original data supplied by the participants, and lines were drawn to best represent the categorisations of the participants. The different regions created indicate a construct on which these elements are similar. The data are presented in seven MSA plots; one for free sorting; two for the oriented sorts (cards with text/images); two for the level of mistreatment about the age groups; and finally two others for the relationship between gender and the open-ended question on how to handle the hippo issue and the age groups about the same matter.

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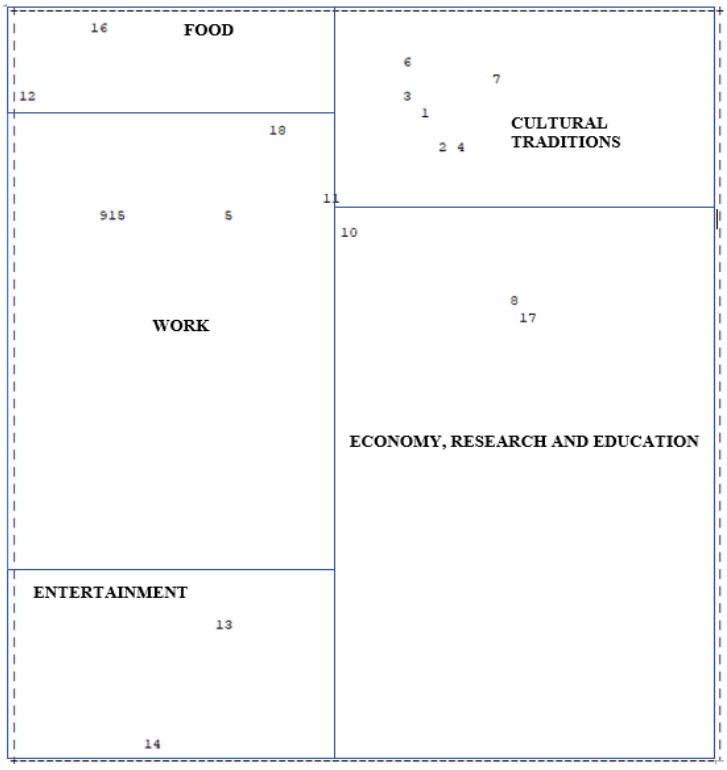
Free sortings on social practices involving animals

Figure 1 shows the MSA results for the image sortings. Through the visual inspection of the distribution of the items, we proceeded to create regions that would explain the proximity of some items, and thus identify the conceptual system of participants. The results of the CMI carried out in this study show that social practices with animals, represented by images, are not organised randomly. It is possible to observe a utilitarian structure that reflects the use people made of animals. This perspective was the most dominant and universal criterion used by participants in assessing social practices that use animals.



1. Bullfighting, 2. rodeo, 3. zoos, 4. aquariums, 5. anti-narcotic dogs, 6. guide dogs, 7. pets, 8. biomedical research, education, 9. psychological research, 10. industry, 11. tourism, 12. animals as food, 13. movies, 14. artistic exhibitions, 15. sport hunting, 16. sport fishing, 17. commerce, 18. Cockfighting.

Figure 1. MSA output of the free sorting's of images. Five regions appear in the MSA output

When the social practices were presented in texts for the second group, it was not possible to find a structure that explains the spatial distribution of items. Approaching social practices with animals through texts, produces a very diverse criterion, which made it difficult to find a pattern for this group of participants.

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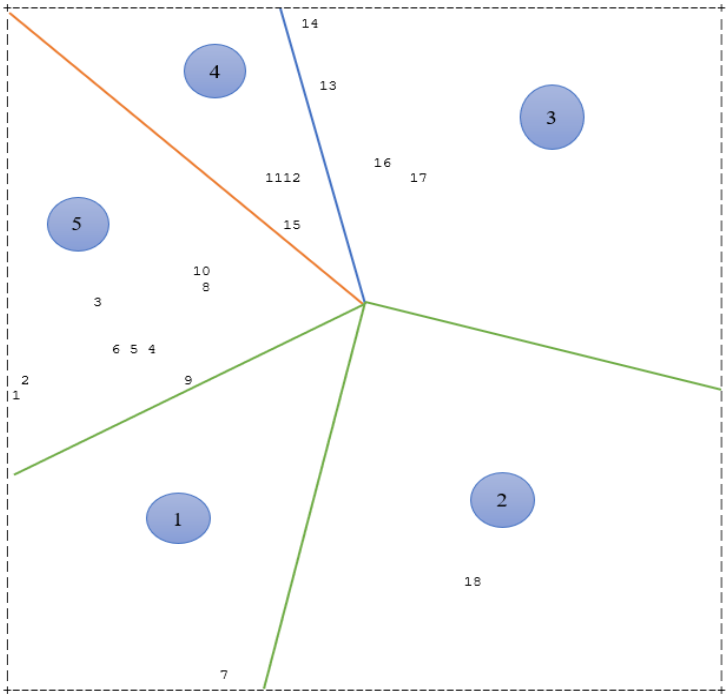
ISSN 2011-7485 (*on line*)

Level of mistreatment

Dealing with the oriented question, figure 2 shows the spatial distribution of the items presented in texts in five regions that gather them based on the level of mistreatment involved in the different social practices, 1 being, the least mistreatment, and 5 the most mistreatment.



1. Bullfighting, 2. rodeo, 3. zoos, 4. aquariums, 5. anti-narcotic dogs, 6. guide dogs, 7. pets, 8. biomedical research, education, 9. psychological research, 10. industry, 11. tourism, 12. animals as food, 13. movies, 14. artistic exhibitions, 15. sport hunting, 16. sport fishing, 17. commerce, 18. Cockfighting.

Figure 2. MSA output of the oriented sort of texts

Figure 3 shows the spatial distribution of the items presented in images also in five regions that gather them based on the level of mistreatment involved in the different social practices, 1 being, the least mistreatment, and 5 the most mistreatment.

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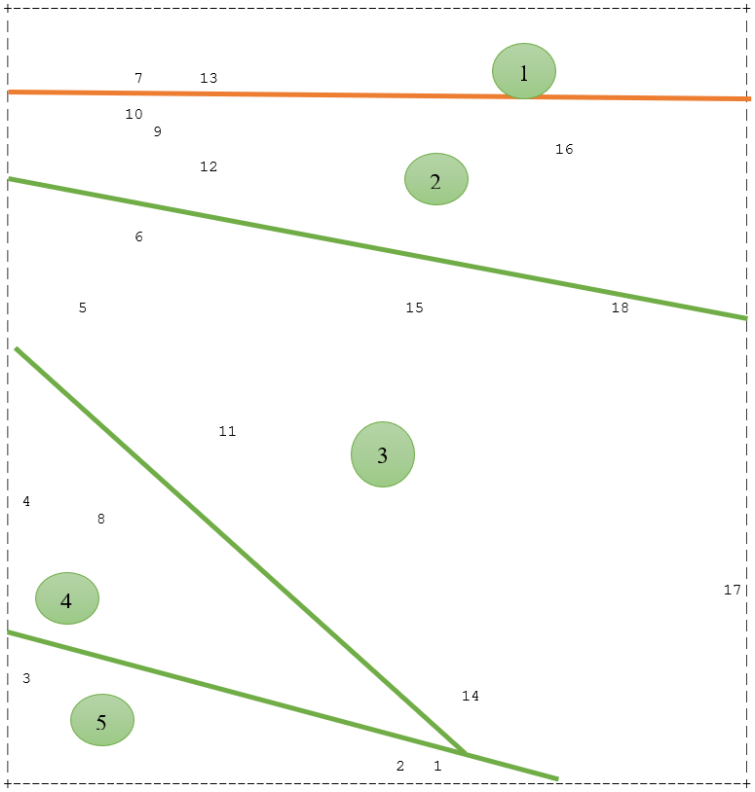

1. Bullfighting, 2. rodeo, 3. zoos, 4. aquariums, 5. anti-narcotic dogs, 6. guide dogs, 7. Pets, 8. biomedical research, education, 9. psychological research, 10. industry, 11. tourism, 12. animals as food, 13. movies, 14. artistic exhibitions, 15. sport hunting, 16. sport fishing, 17. commerce, 18. Cockfighting.

Figure 3. MSA output of the oriented sort of images

Comparing the distribution of the items in text and images, item 7, pets, located in the first region of "no mistreatment", coincides with the results of the items presented in texts. Coincidences are found also in region three, "moderate mistreatment" for items 14) Animals in artistic exhibitions, and 17) Animal trade. On the other hand, few images are found in the fifth region of "extreme abuse". However, three of them: 1) Bullfighting, 2) rodeo, and 3) Exhibitions in zoos, are shared with the text group. In the second region of "some mistreatment" and the fourth, of "a lot of mistreatments", no coincidences were found between the group that used text or the one that used images. Region five, "most mistreatment" for the text group includes two more items than the image group.

Age group and level of mistreatment

To determine whether the age group affects the assessment of animal mistreatment in the social practices presented in texts or images to participants, the infor-

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mation was analysed using a partial order analysis (POSAC). The POSAC software compares the mean of the evaluation of every age group for each social practice distributing this information along an imaginary diagonal, locating the highest means in the upper right, and the lowest on the lowest left of the plot. How the data is dispersed along this imaginary diagonal, shows the degree of agreement between participants to assess the level of mistreatment of the different social practices involving animals. POSAC also generates secondary figures that show the same distribution as the main plot, now including the mean values assigned by each of the age groups to the different social practices with animals. Figures 4 and 5 show the assessment of the level of mistreatment involved in the different social practices when presenting these practices using text or images to participants of the three age groups youths, adults, and seniors.

When comparing the graphs of the three age groups that used texts, none of these practices were assessed as the least mistreatment. All groups, youths, adults, and seniors agree on the assessment in "some mistreatment" when referring to the animal trade, while young people and adults agree that the practices of cockfighting, sport hunting and consumption of animals involve moderate mistreatment. The three age groups agree that the practice of keeping fish in aquariums is evaluated as the most mistreatment. It is noteworthy that youths, adults, and seniors grouped several practices in the assessment of extreme mistreatment and coincide in this assessment when mentioning animals in artistic exhibitions and bullfights. Greater agreements can be seen between the age groups using texts since the items are more grouped, closer to the imaginary diagonal, contrary to the distribution of the group that used images (figure 4).

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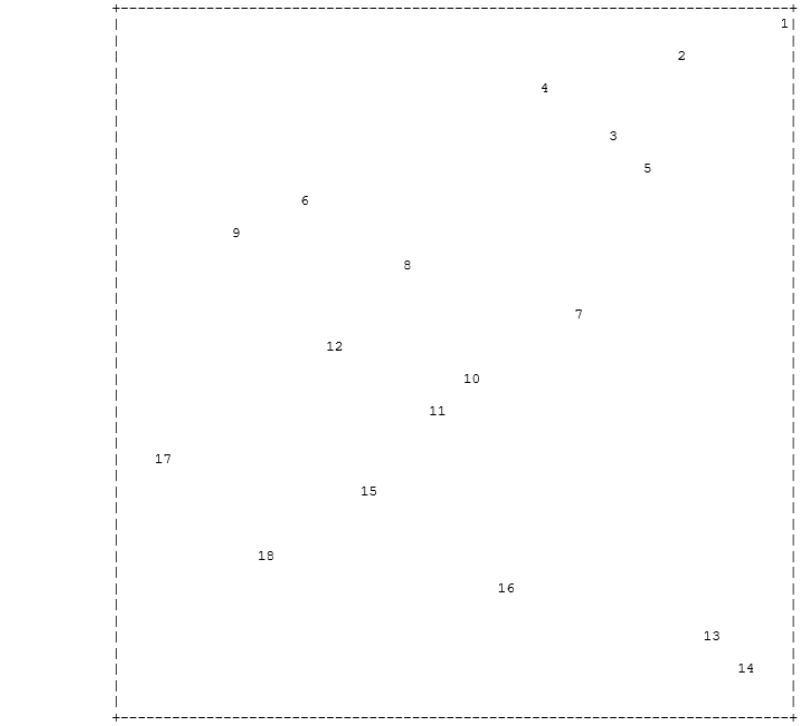
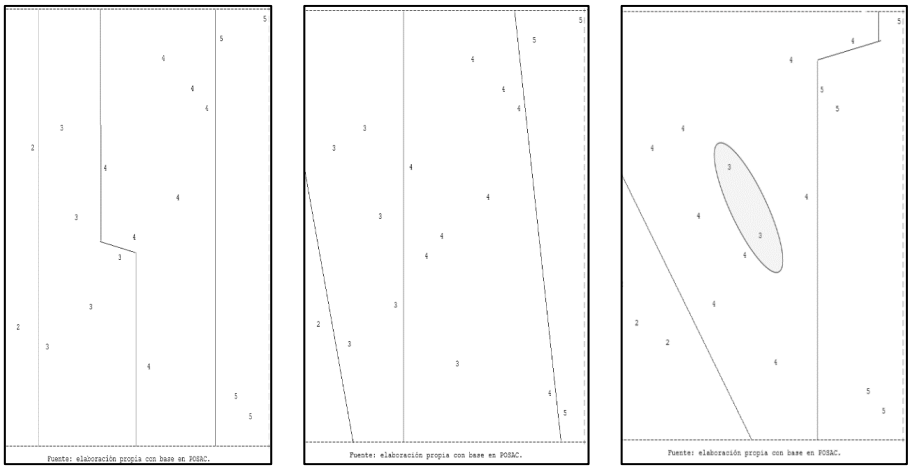


1. Bullfighting, 2. rodeo, 3. zoos, 4. aquariums, 5. anti-narcotic dogs, 6. guide dogs, 7. pets, 8. biomedical research, education, 9. psychological research, 10. industry, 11. tourism, 12. animals as food, 13. movies, 14. artistic exhibitions, 15. sport hunting, 16. sport fishing, 17. commerce, 18. Cockfighting

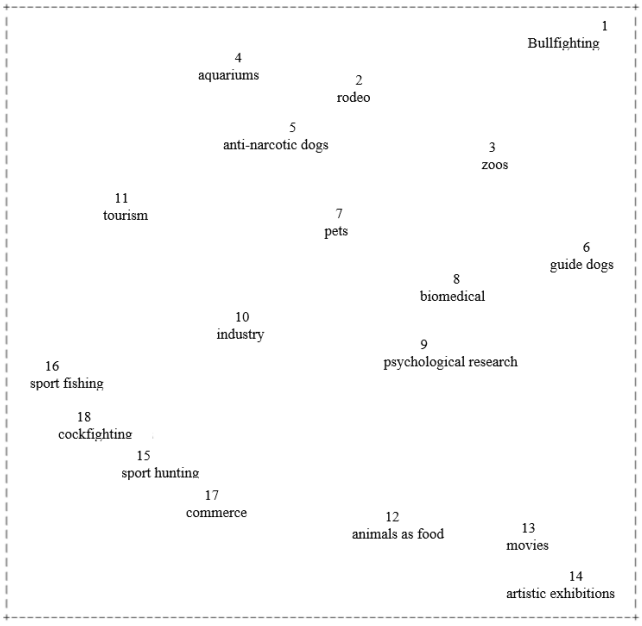


Young Adults Seniors

Figure 4. Level of mistreatment for three age groups using texts

As can be seen in figure 5, the items are more dispersed, evidencing that there are important differences among the age groups. When comparing the plots of the three age groups that used images to assess the social practices, it was found that only two social practices are evaluated as "least mistreatment" in the youth: fishing and cock fighting. Besides, a smaller number of social practices are found

in this age group referring only to tourism with horses as "some mistreatment", while, for adults and seniors, there are 5 and 6 practices respectively within the scale of "some mistreatment". These two groups coincide in mentioning this level of mistreatment: fishing, cockfighting, hunting, trade, and tourism with horses. In the assessment of moderate mistreatment, young people and seniors coincide in the practice of breeding for agricultural and industrial production, and anti-narcotics dogs. It is noteworthy that the practice of keeping fish in aquariums, only for adults, results in the assessment of a practice that implies "most mistreatment". In this level of mistreatment, young people, and adults, agree on the practices of: Exhibitions in zoos, animals under investigation in biomedical laboratories or for educational practices, psychological research on learning and emotions, and animals for human consumption. Finally, only youth and adults assess some practices as extreme mistreatment. In this assessment of extreme mistreatment, it is striking that the plot of seniors does not present any item (figure 5). The younger the person, the more sensitive they are to assess a greater number of animal practices as mistreatment.



1. Bullfighting, 2. rodeo, 3. zoos, 4. aquariums, 5. anti-narcotic dogs, 6. guide dogs, 7. pets, 8. biomedical research, education, 9. psychological research, 10. industry, 11. tourism, 12. animals as food, 13. movies, 14. artistic exhibitions, 15. sport hunting, 16. sport fishing, 17. commerce, 18. Cockfighting

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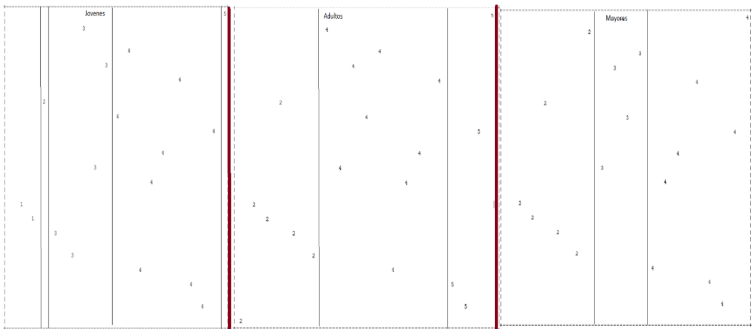

Figure 5. Level of mistreatment for three age groups using images

The hippo suggestions

The answers to the open-ended question about the suggestions participants gave on how to deal with the hippos from the Hacienda Nápoles were grouped into five categories: 1. cull them; 2. send them back to Africa; 3. anatomical castration; 4. chemical castration, and 5. learn to live with them, creating a data matrix of 1 and 0 depending on whether the participants gave information related to every category, or not. The information was analysed using Smallest Space Analysis (SSA) which uses Jaccard correlation for analysing binomial variables (1-0). Possible solutions for the hippo issue in correlation with the gender of participants are presented in figure 6.

Figure 6 shows a slight distance between men and women, both are overlapped. Men suggest culling them or keeping them in Colombia as an alternative, however they are also close to slaughter and sterilisation. Men even suggest that their sacrifice is more viable than transferring them to Africa. Women, for their part are close to keeping animals in Colombia, learning to live with them, and as a second option applying sterilization (with methods such as chemical castration).

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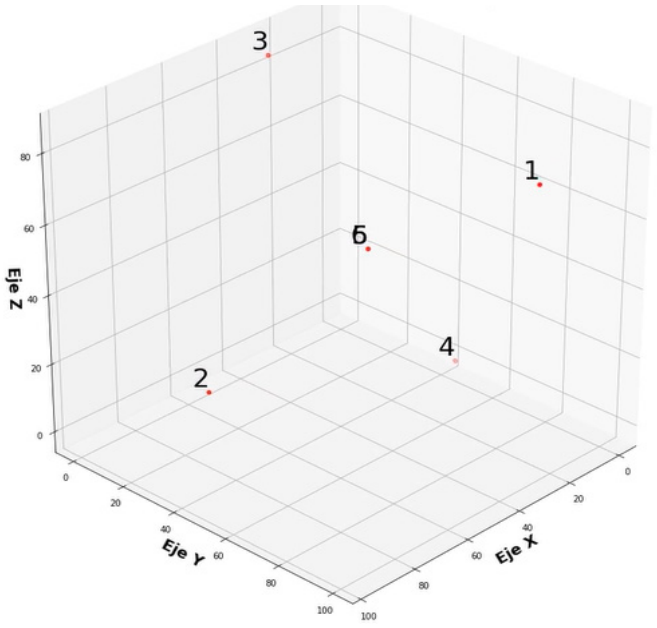

1. cull them, 2. send them back to Africa, 3. anatomical castration, 4. chemical castration, 5. learn to live with them.

Figure 6. Suggestions of men and women on how to deal with the hippos problem

Discussion

The study showed how laypeople conceptualise social practices that utilize animals based on the type of practices that make use of them. Besides, when people were asked to conceptualise the social practices based on the level of mistreatment, the most notorious mistreatment was related to bullfighting, aquariums, rodeo, and hunting, and less with pets and guide dogs.

People in general are currently more sensitive to animal welfare than they were in the past, as can be seen in the data most of the social practices are classified as mistreatment. However, there were important differences between age groups and the assessment of mistreatment involved in such practices, being that the youths and adults were more sensitive to the welfare of animals than seniors. Similar results have been found in previous animal research (Bennett et al., 2015; Aldana et al., 2006; Páramo et al., 2022; Páramo and Galvis, 2010).

The data indicates also that using images in the MST induces clearer categories for the assessment of the social practices, and for differentiating the level of mistreatment than using only text.

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Methodologically, the value of this research is that participants were free to use their own concepts to assess the use of animals in different social practices and that they made different conceptualisations depending on whether they looked at the images or the cards with text. When using this methodological approach, the researcher should consider that images or texts could elicit different responses.

Possible solutions mentioned for the hippo issue invite the government and the experts who are responsible for the decision: public officers, biologists, ecologists, and educators to get an agreement on how to solve the problem that is increasing taking into consideration people´s opinions on how to solve it.

Finally, future research projects should explore conceptualisation of animals in different cultures and the influence of media, TV programmes, environmental education, legislation, and the role of NGOs on these new thoughts about non-human animals.

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