

A study on the Creation Environment of Zoo Using Sound Effects

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Abstract

Although the zoo's breeding environment is growing, no matter how good the environment is, it cannot be made the same as the natural ecological environment. In an artificially created environment, animals cannot live instinctively, shortening their life span, failing to grow, or even suffering from depression. Also, in this environment, vigorous reproduction cannot be expected. The zoo is constantly striving to improve the environment, but a lot of research is needed. In this paper, we propose the use of sound as part of efforts to bring the zoo environment closer to the natural ecological environment. Among the five senses, the sound stimulates emotions not only for humans but also for animals, so it will help to create a natural wild ecological environment for zoos. The breeding environment should be largely composed of three themes: adaptation, breeding, and child care. For animals whose sound and fertility is weakened by the animal's habitat, the crying of the female / male during breeding and the crying of the mother for the baby separated from the mother will be a way to create and use appropriate breeding environments.

Keywords: Zoo, breeding environment, natural ecological environment, sound use, five senses, sensitivity, habitat environment

1. INTRODUCTION

The zoo is a space created to collect wild animals living in the wild and to see them. It is natural that health and reproduction are not smooth because we keep animals that are living freely in our cages. As human beings are deprived of their liberty, it is hard to live. The right life for animals will be health and racial breeding as well as the basic life of mankind. But the moment you feel repression and redemption, you lose your health and the destruction of health will destroy the ability to breed your species. For that reason, environmental development in zoos makes the breeding environment the same as a natural wild ecological environment so that animals do not feel as repressed and restrained as possible. The zoo environment is becoming more and more close to the natural ecological environment in spite of the early zoo environment by continuous development. However, there are many areas where the additional environment suitable for space composition is insufficient. In the future, it is necessary to create a zoo like a natural ecological environment.

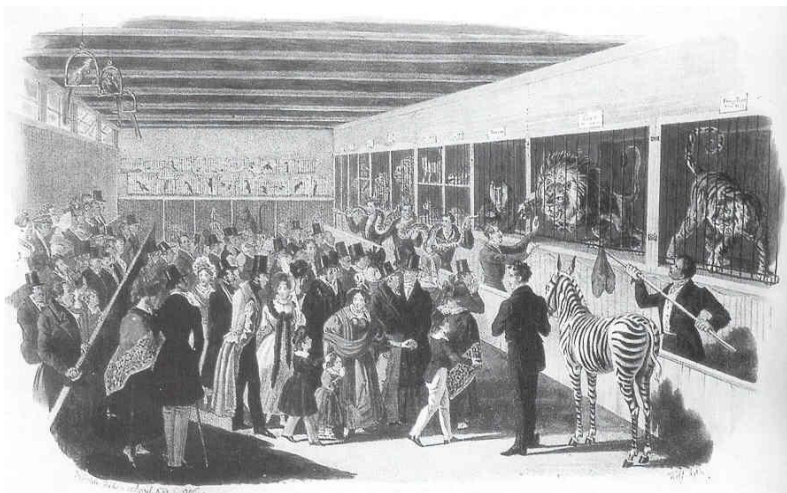
One of the most important principles in creating an additional environment to be studied for creating a space for a natural ecological environment is to use the fulfillment of the five senses. I have a sense of being a human being. The five senses are vision, hearing, smell, touch, and taste. Among them, it is considered that the space composition for the four sense satisfaction except hearing is already implemented. To create a space similar to the natural environment, trees and forests are created to meet visual, olfactory, and tactile senses. Taste is naturally related to food and it meets and meets the preferred food according to predators, herbivores and omnivores. Of course, it is not easy to be allowed in terms of viewing space to fully satisfy the instinct of a predator that directly hunts and eats alive animals. Finally, sound has to play an important role for hearing satisfaction. However, since sound stimulates the brain through auditory stimuli, it has a great influence on bringing emotion. Therefore, various studies are needed to create a zoo environment. Sensibility is also an important motive for animals, so it can help adapt to the zoo environment of the animal, enhance the fertility of the animal, and nurture the lost parent animal. Based on the background and purpose of this research, we propose the use of sound to help optimize the natural ecological environment of the zoo environment ^{[1][2][3][4][5][6]}.

2. ZOO ENVIRONMENT

The zoo is a space where people from all over the world can gather and collect various animals while watching them. Initially, it started as a place for breeding land animals, which was supplemented with breeding birds. In order to make the breeding environment similar to the natural ecosystem gradually, a wide space has been provided, and a breeding environment such as a safari that can be used by a car is also provided for a long time. There are also a number of places where aquatic life is collected separately and reared in the name of an aquarium or aquarium.

The beginning of the zoo began to be built in the royal family of the ancient Egyptian empire and the Assyrian empire. In 1204, the royal zoo was built in London, England.

In the 16th century, Queen Elizabeth I began to appear to the public. Next, France built the Versailles Zoo in the Palace of Versailles in 1664 after Louis XIV. In the UK, a private zoo came into existence in 1773, and in 1828 the London Zoo, a modern zoo, was established at Regent's Park in London. The first modern zoo was opened in 1752 in Vienna, Austria, ahead of the London Zoo in London, Regen Park. Then in 1859 Central Park Zoo was established in New York. In 1907, a zoo was established in Germany, and the world's zoo culture began to develop. In 1931, the world's first safari zoo was established in London, and several countries around the world, including the United States and Australia, set up safari parks to improve the animal breeding environment. From this perspective, the UK is a zoological center of the world zoo history ^{[1][2][7][8][9]}.



a. Medieval England London Zoo



b. Modern Austrian zoo

Figure 1. the world's first medieval and modern zoo

Currently, there is a Zoo Bird Zoo in Austria, which was established in 1752, the oldest zoo in the modern world. The London Zoo in England began as the world's first royal zoo in 1204, but it turned out to be a modern zoo in 1828, later than the zoo in Austria. Other world-class zoos include the New York Zoo in the United States, the Ueno Zoo in Japan, the Beijing Zoo in China, the Melbourne Zoo in Australia, the Berlin Zoo in eastern Germany and the Hamburg Zoo in northern Germany [11][12][13][14][15].

The first zoo in Korea was Changgyeongwon Zoo, which was built in Seoul on November 1, 1909. Changgyeongwon was originally a residence of the queen of the Joseon Dynasty and was the palace of Changgyeonggung Palace. However, in order to break down the sacred energy of the Korean dynasty in the beginning of the Japanese colonial rule, the Japanese imperialists tore down the angles inside Changgyeonggung and locked the animals into zoos. Finally, in 1911 after the Korea - Japan Merger, in 1911, the Japanese government cut down the Changgyeonggung to Changgyeongwon, cut the mountain range between Changgyeonggung and Jongmyo, set up roads, and planted thousands of Japanese cherry blossoms.



a. Changgyeonggung



b. Changgyeongwon Zoo

Figure 2. Korea's first zoo Changgyeongwon

Chang Kyung Won was used as a viewing facility for a long time after the liberation of Korea in 1945, and in the 1980s, the government set up the Chang Gyeong Palace Restoration Plan and returned it to the original name Changgyeonggung at the end of 1983. At that time, the zoo in Changgyeonggung moved to the Seoul Grandeur Zoo in Gwacheon on May 1, 1984. Seoul National University Park Zoo has 2,700 species of 332 species of animals including mammals, birds and amphibians, and has been working on exhibitions, conservation, education and research, which are functions of the zoo. On May 5th, 1973, the Children's Grand Park was established in commemoration of the Children's Day, and the family-sized rest area was opened to display 105 small animals. The largest family park in Korea was Yongin Nature Park, opened in Yongin, Gyeonggi Province in 1976, and changed its name to Everland in its 20th anniversary in 1996. There are also Daejeon Zoo, Jeonju Zoo, Cheongju Zoo, Uchis Park Zoo in Gwangju, South Jeolla Province, and Zoo Park Zoo in Daegu, Gyeongbuk Province.

2. UTILIZING SOUND AT THE ZOO

The zoo's breeding environment is getting better. It will be difficult to protect the wildlife of animals unless they are carefully controlled because wild animals living in the natural ecosystem must be confined. In this paper, as a part of realization of a more natural wild state, we intend to give power to improve zoological environment of zoo effectively using sound. Sounds must be applied in three major frameworks to create and manage an effective ecological environment in the zoo. First, to adapt to wildlife zoos, they play the sound of their hometowns. It is also good to plant a lot of trees and make a forest and decorate a similar ecological environment, but it is as important as the hearing environment they feel. Second, to enhance the breeding power of animals, it is appropriate to utilize breeding arms and cries. It is because they must stimulate their emotions using sounds and stimulate their sensitivity to sexual desires. Third, for the care of young animals, the cry of the mother or the cry of the coworkers should be utilized. The mother's cry gives emotional stability and the cries of her colleagues are motivated to live.

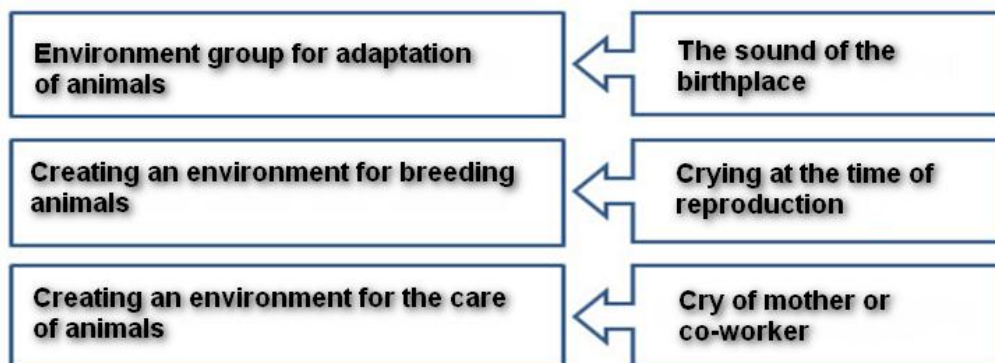


Figure 3. Creation of zoo environment considering acoustic elements

The zoo is a place where you can see domestic wild animals living in the country but not living in the mountains or various foreign animals that do not live in the country. Among the typical domestic wild animals that can be seen at the zoo, there are banded bears, wolves, lynx, wild boar, deer, elk, raccoon, mole, mare, rabbit and squirrel. Wild birds have eagles, hawks, pheasants, eagle owls, doe bugs, mallards, and wild birds, except migratory birds. Foreign animals include lions, tigers, elephants, monkeys, rhinos, hippopotamuses, giraffes, camels, and kangaroos that are not found in Korea. However, animals imported from abroad often lose their ability to adapt, lose their health, or suffer from mental stress and die. The reason is that we have suffered from a long time in aboard, or have been unable to adapt to the different climate and environment. a. Prison-type kennel.



a. a spacious room



b. a zoo



c. Safari-type kennel

Figure 4. Development of zoo breeding environment

In order to overcome these difficulties, the zoo has been developing new breeding environment ideas such as wide breeding environment and safari formation in existing prison type breeding facilities. We have created a safari for herbivores, so that we can feel the free grassy atmosphere by combining various herbivores. Lion, tiger, and other carnivorous safari have also been created so that wild animals can instill their instincts.



a. Monkey theme space



b. Mixed safari



c. Night Safari

Figure 5. Zoo with special breeding environment

The theme spaces of apes and monkeys were also created separately to keep the habitat unique to the apes safe. In addition, the world's only mixed safari is also trying to equip the natural wild ecology environment that animals can easily adapt. In addition, night safari was created and special light was reproduced such as the brightness of the moonlight, so we paid attention to breeding nocturnal animals. By making grassland and making forests like this, we satisfied visual, olfactory and tactile senses in the five senses, and satisfied the taste by giving food that is suitable for food, but hearing was not satisfied. Because the zoo is located close to the city center, noise from roads, accidents, and office clusters around it puts stress on the animals. The pain of these noises should be resolved by sound. It is the sound of the hometown, the habitat where they lived, including the sound of grasslands, the sound of jungles, and the sound of swamps. In other words, the satisfaction of auditory sense through sound must be realized to complete an environment that satisfies the five senses ^{[8][9]}.

Tigers of Korea were captured and extinct by the Japanese imperialism during the Japanese colonial period, and almost destroyed during the Korean War. It is hard to find wolves and foxes in nature, and the chrysanthemum and lynx are also called pre-extinction stages. Domestic endangered birds are also found in the DMZ, but the need for protection is also urgent, as are the birds, rabbits, storks, cranes and spoonbills. The zoo also protects these endangered wild animals with a variety of species, which should pay attention not only to protection but also to breeding. Of course, it would be nice if natural breeding was possible, but if it is impossible, we should increase the number of animals through artificial breeding. At the zoo, however, it induces natural reproduction. Matching cancer and animal creatures should be encouraged to create a comfortable, gentle atmosphere or to release sexual hormones. As a method for hormone secretion, there is a direct way to administer hormones, but we suggest a method to use sound for natural induction. The method of using the sound is to record the cries of the male and the female in the breeding season, and to tell the other party from time to time ^{[10][11]}.



a. Giraffe's Love



b. Lion's love



c. Elephant's love

Figure 6. Breeding environment using breeding female, cow's cry

In zoos, it is often the case that a mother dies during childbirth or premature babies are at risk or unable to raise babies due to postpartum depression. In this case, a baby zoo is set up separately, and a baby animal hospital, an artificial foster room, and a baby animal play room are installed to nurture baby animals. The baby zoo has a dedicated breeder who can play with, play with, play with, and treat when they are sick. Apart from the premises space and baby animal patient space, the baby zoo is open to the audience with a window or a space for other events, and it is operated as another viewing event. Premature babies and sick young animals have to be very careful as visitors can have negative impacts on development and treatment, suggesting that the cry of the mother or the cries of their coworkers will stabilize the minds of the young animals. In this case, it is useful if you record the cry of the same species or the cry of a cow. In particular, it is better to record the cry of a pregnant woman in advance.



a. Baby Animal Hospital



b. Artificial Foam Shop



c. Baby Animals Playroom

Figure 7. Childcare environment using crying sound of mother and colleagues

5. CONCLUSION

The zoo strives to provide a more natural wildlife environment to provide visitors with more curiosity, interest, leisure and pleasure. Such efforts have evolved from a prison-type breeding environment in the early zoo to a wide breeding environment and into various safari environments. Efforts to create a natural wild ecological environment provide the animals with visual, olfactory, and tactile pleasures, and the provision of food that meets the rituals of animals also meets tastes. However, the part about the hearing satisfaction is neglected in the five senses, and the effort of creating a natural wild ecological environment does not satisfy the perfection. In this paper, we propose to improve the natural ecology of natural environment by using sound appropriately. First, animals can customize the sound of their respective habitats, helping them to adjust comfortably and stably. Second, it provides the cancer and the

cry of the breeding season, which helps to reproduce smoothly. Third, the cry of the mother and the cry of the cow are provided for the nursery of the baby animals separated from the mother to promote healthy growth. The principles of sound applied to these three proposals invite the imagination to humans and animals, borrowing the principle of stimulating emotion and expect a great effect.

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