



(١٣٩) - (١٥٨)

العدد الثامن

عشر

نظرية الشبكية المنهجية وتطبيقها على محادثات مختارة لزوار حديقة الحيوانات

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المستخلص:

تعتبر حدائق الحيوان اليوم المصدر والمكان الرئيسيين لحماية الحيوانات والحفاظ عليها من الانقراض و أماكن للترفيه وتنقيف الزوار إلى جانب الحفاظ على هذه الحيوانات في بيئة تحاكي بيئتها الأصلية. تبحث الدراسة الحالية في تحليل أحاديث مختارة لبعض زوار حديقة الحيوان من منظور لغوي بيئي. تهدف الدراسة أولاً إلى معرفة كيف تعكس تعليقات زوار حديقة الحيوان، وفقاً للشبكة النظامية، دور حديقة الحيوان في الحفاظ على الحيوانات من الناحية البيئية. ثانياً، يوضح كيف تلعب حديقة الحيوان دوراً في تعزيز الفهم البيئي للزوار. لتحقيق هذه الأهداف، تستخدم الدراسة نموذج شبكة نظامية انتقائية لكل من Tunnicliffe (2008) و Patrick and Tunnicliffe (2013)). اللذان قدما نموذجاناً للتعليقات، يتكون النموذج الأول من ثمانية تعليقات: تعليقات تفسيرية، وتعليقات عاطفية، وتعليقات بيئية، وتعليقات حول هيكل الحيوانات، وتعليقات حول سلوكيات الحيوانات، وتعليقات حول أسماء الحيوانات، وتعليقات تغذية راجعة، وتعليقات الإنهاء. تظهر النتائج أن جميع التعليقات الثمانية للشبكة النظامية يتم استخدامها من قبل الزائرين في المحادثات المختارة بينما التعليقات التفسيرية هي الأكثر تكراراً بينما التعليقات التغذوية الراجعة هي الأقل شيوعاً. تعكس هذه التعليقات الدور البيئي لحديقة الحيوان من خلال حماية البيئة للحيوانات. ويكشف أن حدائق الحيوان لها دور في تعزيز الفهم البيئي للزوار.

الكلمات المفتاحية: حماية الحيوان، محادثات حديقة الحيوان، تعليقات شبكية منهجية.



A Systemic Network Study of Selected Zoo Visitors' Talk

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Abstract :

Zoos today are considered the main source and place to protect and conserve animals from being extinct. They are found as places for entertaining and educating visitors besides preserving animals. The present study examines some selected zoo visitors' talk from an ecolinguistic perspective. The study firstly aims to investigate how the comments of the zoo visitors, according to the systemic network, ecolinguistically reflect the role of the zoo in preserving animals; secondly, it shows how the zoo plays a role in advancing visitors' ecological understanding. To achieve these aims, the study uses an eclectic systemic network model based on both Tunnicliffe (2008) and Patrick and Tunnicliffe (2013). Therefore, the model is composed of eight comments: Interpretative comments, Affective comments, Environmental comments, Comments about the animals' structure, Comments about the animals' behaviors, Comments about the animals' names, feedback comments, and Terminating comments. The results demonstrate that visitors in the selected conversations use all eight systemic network comments. The interpretative comments are the most frequent meanwhile the feedback comments are the least. These comments reflect the ecological role of the zoo through the environmental protection of animals. Additionally, they reveal that zoos play an essential role in improving visitors' ecological understanding.

Keywords: animal preservation, zoo conversations, systemic network comments.

1. Introduction

Language ecology can be defined as “the study of interactions between any given language and its environment” (Rasheed, 2023, p. 3). As far as ecology and environmental preservation and protection are concerned, zoos today are considered the main source and place to protect and conserve



animals from being extinct. They are found as places for the conservation of “flora/fauna” (Patrick & Tunnicliffe, 2013, p. 19) and for educating visitors as well. Additionally, they serve as places where people watch animals for entertainment.

Hanna (1996) confirms that “Today’s zoos serve two basic functions: community resource and conservation entity” (p.76). In the same vein, Hutchins (2003) agrees with Hanna (1996) and approves the main job of the zoo by indicating that “Today, more than ever, zoos need to think harder [about] why they are there and what role they will fill in conservation, education, and research” (p. 25).

Furthermore, Patrick and Tunnicliffe (2013) agree with other scholars’ beliefs which ratify that zoos are “striving to be global leaders in animal care, wildlife conservation and science, conservation education, the guest experience, and community engagement” (p. 21).

When describing zoos, their missions, and their purposes, a definite shared point can be noticed; needless to mention that conservation is shared among all functions, themes, and purposes of zoos. Among all, conservation is selected to focus on as it is highly related to the essence of the current study. Hence, understanding how zoos are essential to maintaining the protection of animals and urban life will ultimately help preserve the entire ecological system.

Zoos’ animal conservations represent a crucial project for all zoos around the world to confront and lessen the rate of extinction of species. In addition, they assist in fighting out the fast threats occurring to all rare species and wild animals “because the rate at which species are becoming extinct or threatened is occurring at a faster rate than at any time in Earth’s recent history” (Patrick & Tunnicliffe, 2013, pp. 23-4).

Conservation and maintaining the survival of species inspire zoos to take action “in caring for natural resources and maintaining local wildlife habitats and participating in local environmental conservation efforts” (Patrick & Tunnicliffe, 2013, p. 25).

As a result, the current study is designed to undertake an ecolinguistic analysis of zoo talks via developing an eclectic systemic network model



based on both Patrick and Tunnicliffe (2013) and Tunnicliffe (2008). Conversation analysis related to Sinclair and Coulthard (1975) and others is far from this analysis. The researchers want to show neither the turn-taking nor the adjacency pairs and all related concepts of conversation analysis. They are not after discourse analysis of turn-taking in normal conversations but rather they concentrate on the topic of conserving animals in such conversations that take place in zoos.

The research tries to answer the following questions:

1. How can the comments of the systemic network ecologically reflect the role of the zoo?
2. How does the zoo plays a role in advancing visitors' ecological understanding?
3. What are the most and least frequently used comments?

2. Zoo Conversation Content

Falk and Dierking (1992) assert that visitors' conversations provide details about visitors' interests, background knowledge, and experience. They also shed light on the exhibit's main focus.

Language is studied within the context of its use. It cannot be studied in isolation. Therefore, zoo conversations are regarded as “verbal bidirectional interactions and are determined by the individuals or institution, a tool is needed to establish the form and content of the conversations that take place during visits to zoos” (Patrick & Tunnicliffe, 2013, p. 93)

The comments and the contents of the zoo conversations are not uniform in the contents. The responses of the visitors vary, depending on the types of exhibits from inquiring about animals' names, their captivity accommodations, and other topics discussed whilst wandering around the zoo yards. Zoos are perceived by Lucas, et al. (1986) as places of conversation in the same way that museums are. These conversations, according to them, are ultimately devoted to talking about:

exhibit access comments whilst the group seek something about which they can talk, the exhibit and direct observations on the animals, names of the type of animal, interpretations of the observations in a personal context of affective attitudes, episodic memories, emotion,



attitudes, aesthetics and values, management of the group, and social comments (p. 342).

Tunncliffe, (2005), in comparison, states that the “content was ‘Ohs’, ‘Ughs’, or ‘Ahs’ and comments about the excretory and reproductive organs with anthropomorphic interpretation for any animal remotely resembling humankind” (p. 82). Additionally, Tunncliffe (2005) summarizes some subjects that are transcribed by hearing the recordings she takes when the schoolchildren are visiting the London Zoo. These include comments on behavior, comments about the parts of the animal’s body, comments related to the name of the animal and its taxonomy, comments on the source of the speaker's knowledge, and comments about other aspects of the exhibition and attitudes.

Patrick and Tunncliffe, (2013, p. 93).) exhibit the further general nature of such kinds of conversations. They state that these conversations are:

1. supplying and demonstrating the visitor's general interest,
2. exposing previous knowledge and expertise,
3. informing about visitors’ focus and attention,
4. expressing the visitor's role in the group,
5. showing how the visitors utilize conversations to entail their needs,
6. Revealing the way visitors gain control over the conversation, and
7. getting the attention of other group members.

These factors and others are seen to be the source of visitors’ ecological learning from these trips to the zoos and a fruitful way of communicating with nature. Also, they enhance the ecosystem of nature within the context of the zoo and increase the appreciation for animals and how adequately these animals are seized (Patrick & Tunncliffe, 2013).

3. Turn-Taking and Conversational Analysis

Typically, turn-taking and conversation analysis fall under the umbrella of discourse analysis. According to Hassan (2015), conversation analysis continues to be the main focus of many linguists who engage in the



area of discourse analysis. Often, the concept of turns- taking, in which conversation participants assume different roles, often serves as the foundation for communication (Khalil 2013). She also mentions that “The progression of any conversation is achieved by the change of roles between speaker and hearer which, in its turn, represents the heart of the turn-taking system” (Khalil 2013, p. 303). Indeed, this is what is meant by taking-turn. Generally, taking-turn gives everyone in a conversation the chance to ask questions and get replies.

4. Systemic Network

Tunncliffe (2008) sets what she calls a “*systemic network*” to be the analytical tool of the collected conversations in her study. The items of this tool are called *categories*. Each conversation's subject is “coded according to the systemic network developed from the work of Bliss, Monk, and Ogborn (1983). A unit of conversation was defined as the group conversation in front of anyone exhibit from the beginning of the conversation until it ceased” (Tunncliffe, 2008, p.20). These categories are:

The “animal as exhibits—focused” category is divided into six subordinate groups:

- (1) interpretative comments, which incorporate knowledge source comments—a statement or question of fact;
- (2) affective comments, which comprise emotive responses, such as “Ah!” or “Ugh,” in addition to comments about other attitudes—human-animal interactions (and vice versa) and welfare comments;
- (3) environmental comments, denoting the endangered status or natural habitat of the species;
- (4) comments about the animals’ names;
- (5) comments about the animals’ structure; and
- (6) comments about the animals’ behaviors (Tunncliffe, 2008, p. 20).

Therefore, for these categories to be within the model of the analysis of the current study, they will appear in the following forms, as they are borrowed from Tunncliffe (2008, p.20):



- 1) **Interpretative Comments** embrace knowledge source comments that refer to or seek a source of information within the exchange, like for example book, tv/video, zoo worksheet, teacher, or home. Interpretative comments also include a question or statement of fact.
- 2) **Affective Comments** include emotive responses, such as “Ah!” or “Ugh,” welfare comments, along with comments about other attitudes that are encoded in human-animal interactions (and vice versa).
- 3) **Environmental Comments** refer to the endangered status of the species or their natural habitat.
- 4) **Comments about the animals’ structure** denote features that are unacquainted to the visitors such as claws, these comments are grouped as superordinate within body part comments.
- 5) **Comments about the animals’ behaviors.** There are four categories of behavior comments:
 - a. Movements
 - b. Position in the enclosure.
 - c. Feeding, food.
 - d. Attention attractors refer to any activities, e.g. play, excretion, sleep, awake which occur when the visitors are watching animals.
- 6) **Comments about the animals’ names** are comments about identity names, genus terms, common or everyday names, and class terms.

These categories are expanded by the researchers to eight categories.

The researchers have borrowed the following two categories from Patrick and Tunnicliffe (2013, p. 98) which consist of:

- 7) **Feedback comments** indicate that all learners need feedback, such as praise, reprimand, or suggestion.
- 8) **Terminating comments** signify the conclusion of the discussion that has been taking place concerning a specific exhibit. Teachers are extremely skilled at terminating.

5. Methodology

The current research utilizes the qualitative research method (henceforth QRM). The QRM shows the study of things in their natural environment, tries to give meaning to phenomena, and interprets them



according to the meanings that people bring to them (Denzin, 1994, p. 2). In QRM, the researcher can also provide a conceptual explanation of global issues (Yin, 2011, p.7). The qualitative analysis is further supported by frequencies and percentages. To scrutinize how conversations that take place in zoos are supporting and enhancing environmental protection and preservation, the current study collects 4 conversations from “Zoo Talk” by Patrick and Tunicliffe (2013). These conversations are ecolinguistically analyzed in terms of the above-explained eclectic systemic network model based on both Patrick and Tunncliffe (2013) and Tunncliffe (2008).

6. Data Analysis

Conversation (1)

Mongoose

“Girl 1: Mongeese have nice little pink noses

Girl 2: Which one is it?

Girl 1: Those noses!

Boy 1: We are mammals.

Girl 1: You know Mr. Walsh Lynn?

Girl 2: Yeah.

Girl 2: Well, he said that we are mammals!

Girl 2: Well, we are!

Girl 1: Good job we are not animals!

Girl 2: Look, they sleep on top of the rock!

Girl 1: Where are they?

Girl 2: Oh, look! They’re coming toward us!”

(Patrick & Tunicliffe,2013, p. 125)

This conversation is at Mongeese’s place located at the zoo. As it is shown, there are three visitors here, two girls and one boy. They describe the animal as having beautiful noses. They talk about animals and mammals. These kids seem to be ignorant about exactly what is the meaning of a mammal.

Systemic Network Analysis

- a. **Comments about the animals’ name:** “Mongeese”; girl 1 mentions the name of the animal that she visits with girl 2 and boy 1.



- b. Interpretative comments:** “Which one is it?”; girl 1 asks about the Mongoose which has a beautiful nose. “We are mammals”, boy 1 mentions the fact about human beings. “Well, he said that we are mammals!”, “Well, we are!”; girl 2 makes these statements in response to Mr Walsh Lynn's assertion and affirms it. “Where are they?”; girl 1 asks about where these animals sleep within this exhibit.
- c. Affective comments:** “Oh”; girl 2 shows her effectiveness towards the Mongeese as these animals walk towards the three visitors.
- d. Feedback comments:** “Good job we are not animals!”; girl 1 comments on boy 1 and girl 2 statements wherein she states that a human being is not an animal.
- e. Comments about the animals’ behaviors:** “Look, they sleep on the top of the rock!”; girl 2 directs other visitors’ attention and refers to Mongeese. Sleep is considered one type of animal behavior. It is an activity that occurs as the visitors look at the animals. The top of the rock refers to the animal’s position in the enclosure and this is considered another type of animal behavior. “They’re coming toward us!”; girl 2 refers to the movement of Mongeese.
- f. Environmental comments:** “on top of the rock”; girl 2 describes the place of Mongeese sleep that is the rock. To give the animals a sense of comfort, the zoo places the rock.
- g. Terminating comments:** “Oh, look! They’re coming toward us!”; girl 2 ends the conversation within the Mongeese exhibit.

Systemic network comments that are revealed in this talk show how zoo displays animals in a way that attracts visitors even if there is no adult among the visitors. The zoo aids in the protection of these animals, as it preserves them in a secure environment. Visitors who come to visit animals will become more environmentally aware of the other species, besides people, that are crucial components of the ecosystem.

Snowy Owl

Conversation (2)

“Boy 1: They’re like camouflaged like the bushes.



Boy 2: Yeah!

Girl 1: There's one up there.

Boy 2: They're sleeping.

The children are searching and pointing.

Girl 2: There's the snowy owl.

Girl 2: Ah, look!

Girl 3: Ah, look!

Girl 4: Ah, look!

Girl 1: Isn't it sweet?

Boy 1: Oh!

Boy 1: It's a snowy owl

Boy 2: Yeah. I know.

Girl 3: Ah, look! (Laughs) its...

Boy 1: What's it like then?

Boy 2: Yes.

Girl 2: It's a snowy owl!

Boy 2: Yes. I know.

The children are reading the signs on the cages.

Boy 2: It's twenty years old.

Girl 1: (Giggles)

Girl 2: They ain't asleep.

Teacher: Where does it say that Mike?

Boy 2: Here.

Teacher: It's quite old then, isn't it? It is the father of 56 chicks.

Girl 1: What!

Boy 1: It's had its head chopped off. (There are white rats dead on the floor of

some of the cages.)

Boy 2: (Laughs)

Boy 1: Ugh!

Boy 2: Sick!

Girl 1: Look! Look!

Girl 2: Mike look!



Girl 3: Ugh!

Girl 4: (Screams)

Boy 1: It's coming out.

Boy 2: No that's the white mice again. Oh, man!

Teacher: Dan it's there (pointing to and reading label called ZOO DIET). In the

zoo the owls are fed on fresh killed rats or mice.

Boy 2: It's a zoo diet!

Girl 1: Yuck!

Boy 2: Owls are on a diet?

Girl 1: I thought apples were on a diet.

Teacher: Apples. Yum, yum!

Boy 2: I don't like green apples".

(Patrick & Tuncliffe, 2013, pp. 158-9)

A school group is engaged in this conversation at a snowy owl display. The visitors talk about many topics relating to the owl. Boys and girls within this exhibit participate in this conversation more than their teacher. This is a good example to encourage them to discover the wildlife by themselves and to build their knowledge of the environment. Their knowledge will be enhanced via their visit to the zoo's exhibits. By analyzing the comments made by zoo visitors during the exhibit, this discussion helps to illustrate how ecological conservation is practised in zoos.

Systemic Network Analysis

- a. Interpretative comments:** "They're like camouflaged like the bushes"; boy 1 comments in the snowy owl exhibit and shares information with other visitors. He tells his colleagues that this animal likes to camouflage and hides in the bushes. "What's it like then?"; boy 1 asks about the snowy owl. "It's twenty years old"; boy 2 tells a statement of fact about this animal. The boy knows the owl's age from the sign provided by the zoo. "Where does it say that Mike?"; the teacher asks a question about the source of the information concerning the real age of the owl within this exhibit.



“It’s on a diet!”, “Owls are on a diet?”; boy 1 is astonished and asks the other visitors to interpret the label that carries the title zoo diet. “In the zoo, the owls are fed on fresh killed rats or mice”; the teacher confirms the welfare of the owl in the zoo as the zoo supplies the animals with their needs as if the animals are in their natural environment.

- b. Environmental comments:** “There’s one up there”; girl 1 refers to the location of the snowy owl in its environment within the zoo.
- c. Comments about the animals’ behaviors:** “They’re sleeping”; boy 2 comments about the behaviour of sleep for the snowy owl. “There’s one up there”; girl 1 means the owl. “Up there” refers to the animal’s position in the zoo and it is one type of animal behaviour. “It’s had its head chopped off”; boy 1 refers to the behaviour of eating the rats by the owl. The snowy owl cuts the rat’s head. “It’s coming out”; boy 1 tells the other visitors about the coming of this animal.
- d. Comments about the animals’ names:** “There’s the snowy owl”, and “It’s a snowy owl!”; girl 2 refers to the name of the animals within this exhibit. “It’s a snowy owl”; boy 1 also mentions the name of this animal. “Dan it’s there. In the zoo the owls are fed on fresh killed rats or mice”; the teacher says the name (owl) and its meals, the rats or mice. These meals are provided by the zoo.
- e. Affective comments:** “Ah look”, “Ah look”, “Ah look”; the affective comments. As attitudes of human interaction towards the snowy owl, “Ah” is said by three visitors: girl 2, girl 3, and girl 4 respectively. “oh! It’s a snowy owl”; oh is an affective comment by boy 1. He wants to get his friends' attention towards the snowy owl. “Ugh” is mentioned by boy 1 and girl 3 because they see a lifeless mouse at the snowy owl exhibit. “Yuck!”; by girl 1 is an emotional reaction to killing rats or mice that is unsatisfying.
- f. Feedback comments:** “It’s quite old then, isn’t it? It is the father of 56 chicks”; the teacher asks a question and answers at the same time about the age of this animal. The teacher wants to confirm and give



feedback that the exhibit's snowy owl is elderly and has several babies.

g. Terminating comments: "I don't like green apples"; by these words, boy 2 ends the discourse at the snowy owl exhibit.

The above comments indicate that visitors would like to interact with animals. The snowy owl displayed at the zoo gives visitors some facts about the bird's identity, age, and welfare while feeding fresh food. These facts help people understand that other species are significant creatures in our ecosystem, which should also encourage them to protect these species. From the comments of the visitors' talk, it is found that the zoo supports the preservation of these species and considers their necessities.

Conversation (3)

Sharks

Michael: Yes, these are sharks, look!

Aunt: How can you tell?

Michael: Because they are dead long and have tails like that. That's not a shark though (batfish). I expect that's its food.

Aunt: Why is that not a shark?

Michael: That's their food probably.

Aunt: But how do you know it's not a shark?

Michael: Because it's flat

Aunt: Where's the shark's mouth?

Michael: Where's the shark's mouth? It's under there. I wonder what sort of shark this is?

Aunt: It's called a bat fish.

Michael: It must be a kind of shark.

Aunt: No it isn't, I think they just live together.

Michael: Look there's the shark's mouth under there. Perhaps they just live together and are good friends, this is where they live. Why aren't they big?

Aunt: Well, you'd need a big tank for very big sharks.

Michael: They look, they look on that side but they are massive. That's the big one, that's massive. That one's got colours.

Aunt: I expect that one's a different sort of shark.



Michael: That one's the big one."

(Tunncliffe, 1995, p. 28).

This conversation is between two visitors, Michael and his aunt. They talk at the batfish exhibit wherein Michael recognizes an animal as a shark by pointing out various characteristics that, in his opinion, characterize a shark. Nonetheless, when his aunt asks him to identify another organism in the same tank as a shark, Michael can do so since he claims that the batfish lacks the necessary characteristics. Michael and his aunt are concerned about the animals in this exhibit. Visitors acquire biological and ecological knowledge about animals and concede that animals have certain characteristics when they visit the zoo.

Systemic Network Analysis

- a. **Comments about the animals' names:** "Yes, these are sharks, look!"; Michael directs his aunt's attention to the name of the animal within this exhibit. "That's not a shark" and "batfish", Michael repeats the name of the shark but he recognizes that this exhibited animal is not a shark. There is a batfish. "It's called a batfish"; aunt tells Michael the name of the animal they talk about.
- b. **Interpretative comments:** "How can you tell?", Michael is questioned by the aunt about why these creatures are sharks. "Because they are dead long and have tails like that", "That's not a shark though (batfish)"; he interprets according to his biological knowledge. "Why is that not a shark?", "But how do you know it's not a shark?"; his aunt asks Michael to clarify how these animals are not sharks. "Michael: Because it's flat"; Michael interprets facts about the animals according to his background information and biological viewpoint. "Where's the shark's mouth?"; the aunt asks Michael this question to let him discover the name of the animal at this exhibit. "No it isn't, I think they just live together"; Michael's aunt is justifying Michael's comments when he insists that this animal is another kind of shark. "I wonder what sort of shark this is?"; Michael enquires about the kind of shark here. "They look, they look on that



side but they are massive. That's the big one, that's massive. That one's got colours"; Michael comments about the animals within the sharks' exhibit.

- c. **Comments about the animals' structure:** "Have tails like that"; tails refer to the structure of the animals' bodies. "That's the big one, that's massive", and "That one's the big one"; Michael refers to the structure of the shark, as a huge animal.
- d. **Environmental comments:** "Look there's the shark's mouth under there. Perhaps they just live together and are good friends, this is where they live"; Michael refers to the environment of these animals as it contains the batfish and sharks. "Well, you'd need a big tank for very big sharks"; the aunt comments on Michael's question "Why aren't they big?" that the big size for animals requires a big environment and place.
- e. **Comments about the animals' behavior:** "They look on that side"; Michael informs his aunt about the behavior of the animals at this exhibit.
- f. **Feedback comments:** "I expect that one's a different sort of shark", Michael's aunt gives him feedback about his words stating "That one's got colours" as he refers to a shark.
- g. **Terminating comments:** "That one's the big one"; by these words, Michael ends the conversation.

These comments demonstrate that zoo plays a vital role in the preservation of wildlife by keeping these species inside zoo enclosures. Since the visitors talk about subjects related to these species concerning their names, structure, environment, behavior, and many other subjects, this is an excellent and encouraging sign that zoos are making every effort to sustain life. The visitors provide comments and offer their interpretations about various animals. With the zoo's assistance, people will actively participate in environmental protection.

Conversation (4)

Toucan

"Michael: Look at that one!"



Grandma: Look at these, it's feeding it. Look! It's bringing something out of its mouth and giving it to them. He's just regurgitated berries and given it to them.

Michael: There he is!

Grandma: Where would he get his berries from? Oh, look! He is sharpening his beak. Aren't they funny looking?

Neil: Hello! Hello!

Grandma: A good polishing stick! He was fetching berries up, Jane!

Neil: Hello! Hello!"

(Tunncliffe, 1995, p. 25).

This conversation is among Michael's family at the toucan exhibit. The grandmother directs the boys' attention towards the bird's behaviour of feeding his chicks. She asks questions to make Michael and his brother think about this bird and this will enhance their knowledge about other creatures in their environment. She also states her positive attitude towards the toucan. This conversation demonstrates the visitors' attention to this bird.

Systemic Network Analysis

- a. **Interpretative comments:** "It's feeding it. Look! It's bringing something out of its mouth and giving it to them. He's just regurgitated berries and given it to them" and "He was fetching berries up"; the grandmother is the source of knowledge at the toucan exhibit. She provides a thorough explanation of how the toucan feeds its chicks. "Where would he get his berries from?", the grandmother asks a question of fact about this animal's work of bringing berries.
- b. **Comments about the animals' behaviors:** "it's feeding it", "It's bringing something", "giving it to them", "He's just regurgitated berries", "He is sharpening his beak", and "fetching berries up"; the grandmother refers to toucan's behaviour of feeding his little chicks. "He is sharpening his beak" denotes the toucan's behaviour. The grandma gives the boys at this display a thorough description of the behavior of the bird.



- c. **Affective comments:** “Oh, look! He is sharpening his beak”; oh is an emotional response to comments about the toucans' eating behaviour. “Hello! Hello!”; Neil expresses his attitude as he interacts with the toucan.
- d. **Environmental comments:** “A good polishing stick”. The grandma points to a stick that is part of the toucan's habitat. Zoo offers the animals an environment that resembles their natural habitat.
- e. **Terminating Comments:** “Hello! Hello!”; The conversation comes to an end with Neil's comment.

Systemic network comments that are indicated from the analysis of the above conversation affirm that the animal appears to be in an entirely appropriate environment and the zoo provides this kind of bird with its needs as well as the food it prefers. This talk conveys how the zoo's exhibit promotes the visitors' ecological awareness of animals. Their appreciation of animals will assist with environmental preservation and decrease the extinction of biodiversity.

7. Results and Discussion

The researchers summarize the aforementioned conversations in terms of frequencies and percentages to support the qualitative analysis. As a result, the tables below show the used comments within the systemic network.

Table 1

Systemic Network in the Selected Zoo Talk

No.	Comments	Fr.	Pr.
1.	Interpretative comments	25	36.23%
2.	Comments about the animals' behaviors	12	17.39%
3.	Comments about the animals' names	9	13.04%
4.	Affective Comments	8	11.59%
5.	Environmental Comments	5	7.24%
6.	Terminating comments	4	5.79%
7.	Comments about the animals'	3	4.34%



	structure		
8.	Feedback Comments	3	4.34%
Total		69	100%

The selected data show that all of the eight systemic network comments are recognized in the systemic network analysis of zoo conversations. The frequency and percentage of occurrence of systemic network comments in all four conversations are displayed in Table 1 from the most to least frequent as follows: Interpretative comments (25 times, equal to 36.23%), Comments about the animals' behavior (12 times, equal to 17.39%), comments about the animals' names (9 times, equal to 13.04%), affective comments (8 times, equal to 11.59%), Environmental comments (5 times, equal to 7.24%), comments about the animals' structure (3 times, equal to 4.34%), Feedback comments (3 times, equal to 4.43%), and feedback comments (3 times, equal to 4.34%).

The analysis explicates how the comments of the systemic network reflect the ecological role of the zoo through the environmental protection of animals, and exposes that the interpretative comments achieve the highest rank. This means that the comments of the systemic network succeed in reflecting the ecological side of the zoo about the animals on the one hand, and on the other hand, the zoo increases visitors' knowledge of different species to contribute to the survival of the animals. The comments that score the least frequency among other systemic network comments are feedback comments which achieve the lowest rank as shown above. This could be due to the visitors' purpose of visiting the zoo when having conversations within the zoo exhibit. Feedback comments indicate that visitors need feedback, such as praise, reprimand, or a suggestion concerning these animals.

8. Conclusions

After the prior analysis of the selected data, the researchers have drawn the following findings:

1. Based on the study, it can be seen that all eight comments are exploited by the visitors in the selected conversations.



2. The zoo's ecological mission is manifested in these comments by demonstrating that these animals are in habitats that are conducive to their survival.
3. The zoo assists visitors through the use of interpretative comments to explain facts about animals like mentioning their names within the zoo enclosure.
4. Affective comments give more attention to animals which indicates that the zoo succeeds clearly in showing animals to visitors in a proper way.
5. The analysis highlights the zoo's role in improving visitors' ecological knowledge by discussing the captivated animals' environment, structure, and behavior, as well as their dietary and moving habits and all other actions.
6. Visitors to zoos are attracted by the living species housed there because they want to learn more about the wildlife that exists outside of urban areas.
7. As a result, the primary function of a zoo is to connect people's awareness of biological organisms with biological conservation and environmental preservation. They are gatekeepers for animal preservation and protectors of their survival.
8. Consequently, the comments of the systemic network ecologically reflect the role of the zoo.
9. The study also shows that interpretative comments are the most common whilst feedback comments are the least. Due to these conclusions, all the research questions are answered.

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