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A Study on the Linguistic Landscape in Beijing Zoo under the SPEAKING Model

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Abstract: At present, many studies have examined the linguistic landscape (LL). The majority of them target street signs or billboards which usually present only a limited number words; however, fewer studies focus on information boards with more text in public areas. Beijing Zoo not only functions as a tool for popularizing knowledge about animals to the public, but also plays a role in showing the national image of China to the world. This paper takes Chinese-English bilingual LLs in Beijing Zoo as the research object and chooses three elements of the SPEAKING Model, “Genres,” “Norms,” and “Instrumentalities” to analyze these LLs. Field photography, transcription, and comparison are used during the analysis process.

Based on “Genres,” this paper classifies LLs in Beijing Zoo into five categories, including Linguistic Landscapes for Basic Information, Interactive Linguistic Landscapes for Science Popularization, Joint Linguistic Landscapes for Science Popularization, Featured Linguistic Landscapes for Science Popularization, and Other Linguistic Landscapes. Based on “Norms,” this paper looks for errors on LLs, makes corrections, and tries to explore some “hidden norms” embedded in their content. Based on “Instrumentalities,” this paper provides suggestions for the further improvement of LLs in Beijing Zoo by referring to related content of Toronto Zoo and Columbus Zoo.

This research not only widens the research scope of SPEAKING Model, but also attempts to expand the meaning of “Norms” because this paper applies it to both real social scenes and “communities” constructed by different LLs, the latter of which can help to discover the communicative norms in them. This research can help to correct errors on LLs in Beijing Zoo, give guidelines for the further improvement of these LLs, and provide reference value for the quality control of LLs in other zoos.

Keywords: Linguistic Landscape; SPEAKING Model; Beijing Zoo

1. Introduction

Landry and Bourhis first proposed the concept of “linguistic landscape” and defined it as “The language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government building combines to form the linguistic landscape of a given territory, region, or urban agglomeration.”¹ Later, different scholars provided their own definitions for LLs based on this definition. This paper chooses the definition by Shang who thought the linguistic landscape refers to the landscape composed of language and words on various signs in the public space.² Wei, Xiao, and Xu further elaborated on Shang’s definition and regarded the LL as a form of medium engraved with written words in public space, which plays a role in helping tourists to quickly pick up information and building a bridge for communication in both knowledge and culture.³

LLs in Beijing Zoo have at least two important functions. Firstly, as a National Key Park and an AAAA National Tourist Attraction, Beijing Zoo should ensure the quality of LLs in a comprehensive and efficient manner, minimizing or even eliminating all errors. Secondly, as

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a National Science Popularization Education Base, Beijing Zoo has the responsibility to make sure that its LLs not only realize the general function of guidance, warning, etc., but also achieve the unique function of popularizing animal knowledge to the public.

This paper has three main objectives. Firstly, it analyzes LLs in Beijing Zoo with the help of the SPEAKING Model and tries to find out their characteristics. Secondly, in accordance with national, local and industrial standards, it finds out non-compliance with standards on LLs in Beijing Zoo and tries to explore reasons behind these errors. Thirdly, by observing relevant content from two zoos from English-speaking countries, it provides suggestions for further improving the content of LLs in Beijing Zoo.

This paper's significance is reflected in three aspects. Firstly, it expands the scope of LL research because it takes LLs in Beijing Zoo as the research object and mainly focuses on LLs whose purpose is animal introduction and science popularization. Secondly, after identifying errors on LLs in Beijing Zoo, this paper explores reasons for these errors and refers to related content from foreign zoos to give suggestions to improve the quality of LLs in Beijing Zoo. Thirdly, this paper tries to expand the meaning of "Norms" within the SPEAKING Model, which means to regard various LLs as different "communities" and their content as "language in communities," thus making it possible to conduct a detailed and in-depth analysis of the content of LLs in Beijing Zoo.

2. Literature Review

In recent years, more and more studies on the LL have emerged in China from different research perspectives and with diversified research objects. Some studies take LLs in rural areas as their research objects. For example, Wu and Zhou⁴ and Zhong and Wei⁵ both explored the construction of LLs for rural cultural tourism. Yan,⁶ Fu,⁷ Tian,⁸ and Zhang⁹ investigated the current situation of rural LLs in different regions and found out their characteristics. Some studies take urban LLs as their research objects. For example, *Journal of Shanghai Normal University (Philosophy & Social Sciences Edition)* opened a special column on "Urban Language Landscape" in 2023. Some studies take LLs in historical and cultural attractions or tourist attractions as research objects and conduct research from multiple perspectives. For example, Li¹⁰ and Zeng, Zheng and Lv¹¹ respectively analyzed LLs in Barkhor Street and Inn LLs in Shuanglang Ancient Town from a historical perspective. Wu and Zhan¹² and Wu¹³ investigated LLs in historical and cultural blocks. Che analyzed the construction of world-class tourist attractions from the perspective of globalization.¹⁴ Liu discussed the security facts contained in tourism LLs in ethnic minority areas from the perspective of language security and put forward different ways to realize language security.¹⁵ There are also other studies, including studies on multi-modal or atypical LLs, translation of LLs, studies of LLs in multilingual environments, and the combination of LLs and language education or learning.

There are also many studies on LLs globally, and many of them take the language policy as the research perspective. For example, Yao, Nie, and Zhou¹⁶ and Cabras¹⁷ focused on China's ethnic minority communities and discussed the language policy in these areas. Motschenbacher¹⁸ and Li¹⁹ explored the relationship between the language policy and LLs in the real situation. Some studies combine the LL with the globalization of English. For example, Gu and Almann explored the relationship between English and Arabic in Dubai's bilingual LLs against the backdrop of globalization.²⁰ Some studies select LLs in a specific region and analyze their characteristics. For example, Ike and Hori analyzed the indicative LLs of Japan during the period of COVID-19.²¹ Siham analyzed the Arabic LLs in Brooklyn, New York City from the perspective of geographical semiotics.²² Wang, Koh, Choo, and Leong analyzed the revival of Baba Culture in Malacca, Malaysia where LLs functioned as the carrier.²³ Basterretxea analyzed LLs in a rural Basque area.²⁴ Li, Mai, and Lau analyzed

the relationship between LLs and the place-making on the Wailingding Island in China.²⁵ In addition, there are other studies on LLs, which include the combination of LLs and education, multi-modal analysis, translation, comparison in different regions, etc.

Although abundant research has been done on LLs until now, two shortcomings still exist. Firstly, most of the studies focus on LLs with little content, such as brand names, street signs, etc., and few articles point out specific errors in detail, only providing general suggestions, let alone reasons for errors. Secondly, although tourist attractions, cities, buildings and other places have been selected as research areas for many times, the zoo, as a special site, is rarely chosen. And it cannot be ignored that zoos not only play the role of tourist attractions, but also play an important part in popularizing science to the public, which seems to be a special feature that has not been taken advantage of.

3. Theoretical Foundation

3.1 SPEAKING Model

Hymes, an American linguistic anthropologist, put forward the SPEAKING Model from the perspective of ethnography of communication. He believed that the model includes various relationships between language and society.²⁶ Huebner introduced the SPEAKING Model into the study of LLs for the first time and incorporated eight elements of the SPEAKING Model into the analysis of LLs.²⁷

S stands for “Setting and Scene,” which not only includes the sampling domain of LLs but also the placement of LLs toward their readers inside the chosen domain. The placement usually includes the orientation of LLs, which is closely related to the immediate context. Beijing Zoo is chosen as the search domain of this paper and its different LLs have various placements.

P stands for “Participants,” which means both agents, in other words, LLs makers, and audience of LLs. From the perspective of agents, a possible classification between top-down and bottom-up LLs can be adopted but it is limited in terms of social feasibility. And agents always tend to create LLs by their perception of the intended audience. LLs in Beijing Zoo have several agents besides the Zoo itself, and their audience are visitors from all over the world.

E stands for “Ends,” which refers to distinct purposes that artifacts in LLs serve. Different categories of LLs have their different functions. For example, advertisements may express feelings, offer suggestions, convey information, etc. In general, Beijing Zoo’s LLs have two major purposes: inform visitors of regulations or services and conduct science popularization. But this paper classifies them according to G, which makes the classification more specific and clearer.

A stands for “Act Sequences,” which includes the spatial organization as well as act sets of visual artifacts on LLs. The former includes salience, framing, and information value. The information value means the distinction between give and new, ideal and real, and central and ancillary by virtue of the locations of artifacts. The latter includes sequence of placing artifacts as well as the multilingual information arrangement. Due to the diversity of LLs in Beijing Zoo, this paper only focuses on the bilingual text and its content with little attention to the spatial organization or the sequence.

K stands for “Key,” which is established by the amount of text, degree of explicitness of the message and choice of code in LLs in public space. It seems to highlight the difference between keys and make comparison. For example, the advertisement can be classified into the hard sell and soft sell, with the former being more direct and the latter being more inferential. This paper doesn’t make this contrast because Beijing Zoo emphasizes the readable, interesting, and scientific nature of all LLs to provide visitors with clear

information.

I stands for “Instrumentalities,” which includes the channel, code, register or varieties of LLs. Channel means the way information is expressed like oral, written, or telegraphic, etc. Register includes choice of lexicon, orthography, and syntax of the text. Code means code selection and the potential code mixing or switching in the multilingual LLs. In this paper, bilingually written LLs in Beijing Zoo are chosen and they have registers.

N stands for “Norms,” which is classified into “Norms of Interaction” and “Norms of Interpretation.” The former relates to attributes or characteristics that attach to the written production of language, especially regulations or standards at different levels in the society. The latter relates to the specific meaning that is behind those attributes of the written text in a specific community. For LLs in Beijing Zoo, they have to be built based on relevant requirements and standards. And there might be something normative that is hidden in or between different categories of LLs.

G stands for “Genres,” which means the recognized form and common functions of artifacts on LLs. It helps to define what the boundary of LLs is and find the similarity or labels of LLs, thus playing an important role in the categorization of LLs. This paper adopts this element and looks for shared characteristics of LLs, based on which five categories are set.²⁷

3.2 Research Methods

The author visited Beijing Zoo five times and took photos of bilingual LLs in Beijing Zoo with a mobile phone. After getting the photos, the author transcribed the text on them into Word documents for preliminary reading, then classified them according to their characteristics, and based on different categories, put the text into Excel documents for detailed analysis. After the analysis was done, the author read relevant contents from foreign zoos and tried to look for those that can be used by Beijing Zoo for further improving its LLs. In this paper, three elements, including G, N, and I in the SPEAKING Model, are selected to analyze LLs in the Zoo.

Since this paper mainly focuses on the text of Chinese-English bilingual LLs, the same LLs that occur many times are counted as one in number. Due to differences in the physical properties of different categories of LLs, this paper will explain the way of calculating LLs respectively in the specific introduction of each kind of LLs. As for most of the guiding LLs in Beijing Zoo, such as street signs, maps, and the opening and closing information of the venues, they are not included in this paper due to complexity and inconvenience.

4. Analysis of Linguistic Landscapes in Beijing Zoo under the SPEAKING Model

4.1 Analysis under “Genres”

“Swales identifies a number of defining features that constitute a genre, among them a shared set of communicative purposes and constraints on allowable contributions in terms of content, positioning, and form.”²⁷ Based on this definition, this paper classifies LLs in Beijing Zoo into five genres, namely, five categories: Linguistic Landscapes for Basic Information (LLBIs), Interactive Linguistic Landscapes for Science Popularization (ILLs), Joint Linguistic Landscapes for Science Popularization (JLLs), Featured Linguistic Landscapes for Science Popularization (FLLs), and Other Linguistic Landscapes (OLLs). The first four categories have unique characteristics in their content, positioning, and form.

Linguistic Landscapes for Basic Information (LLBIs) show the basic information of animals in Beijing Zoo (Figure 1), in which Chinese and English texts are not completely corresponding. The Chinese text is divided into different blocks, including “分类”(Classification), “习性”(Habit), “繁殖”(Reproduction), “分布”(Distribution) and so on;

while the English text is composed of one or two paragraphs which include information about the habitat, food, reproduction and current situation of animals. Each animal species has a separate LLBI placed around or inside the venue and takes the form of a rounded-rectangular board. After an exhaustive search in Beijing Zoo, a total of 234 LLBIs are obtained, including 132 bigger LLBIs and 102 smaller ones. Among them, 16 animals have both bigger and smaller LLBIs and 2 animals have two different smaller ones. Due to the limitation of photographic equipment, 6 smaller LLBIs are out of reach and they are ignored in the statistical calculation.



Figure 1 A Linguistic Landscape for Basic Information (LLBI)

Interactive Linguistic Landscapes for Science Popularization (ILLs) use interactive texts such as dialogues, questions, and answers to highlight the outstanding characteristics of animals' bodies and habits (Figure 2). Texts are basically in both Chinese and English, which have a corresponding relationship. There are 31 ILLs in Beijing Zoo, which are further classified into two categories: 5 ILLs named “动物知识问答” (Questions and Answers of Animal Knowledge) and 26 ILLs named “科普导赏” (Specific Science Popularization), with the latter composed of two subcategories: 12 ILLs named “明星动物” (Animal Star) and 14 ILLs named “鸟喙与智慧” (Beak and Its Wisdom). ILLs are funded by the Science Popularization Project of Beijing Municipal Forestry and Parks Bureau and are placed around the venues, only available to a few animals. They are small in size and cartoonish in style, adopting unique shapes, such as an animal paw or an oval.



Figure 2 An Interactive Linguistic Landscape for Science Popularization (ILL)

Joint Linguistic Landscapes for Science Popularization (JLLs) give detailed information about eight animals that have habitats in Africa, including the Chimpanzee (Figure 3), the

White Rhino, the Hippo, the African Elephant, the African Lion, the Plains Zebra, the Giraffe, and the Spotted Hyena. The English and Chinese are basically corresponding. The content is generally divided into 14 blocks, but the White Rhino has one more block named “Different.” JLLs are jointly produced by Beijing Zoo and African Wildlife Foundation (AWF) and are placed around the eight African animals’ outdoor venues. This kind of LLs takes the form of a rectangle. Due to random distributions of blocks on JLLs, they are difficult to be uniformly and clearly counted. Thus, this paper chooses these 15 blocks as units instead of LLs themselves for analysis.



Figure 3 A Joint Linguistic Landscape for Science Popularization (JLL)

Featured Linguistic Landscapes for Science Popularization (FLLs) refer to LLs for science popularization except LLBIs, ILLs, and JLLs in Beijing Zoo. They provide extra information for five animals (Figure 4), including the Lizard, the Chimpanzee, the Giant Panda, the Snake, and the Penguin. Chinese and English texts on FLLs are not always corresponding, and among different venues or in the same venue with various kinds of FLLs, different corresponding relationships exist. The major characteristic of FLLs’ positioning is that they are part of the design of animals’ venues and are generally attached to the wall inside the venue; while the other three LLs have some kind of uniformity at the zoo level and are lacking characteristics at the venue level. FLLs have different forms, and based on whether “there is a spatially definable frame,”²⁸ this paper counts the number of FLLs with the conclusion that there are 15 FLLs for the Lizard, 9 for the Chimpanzee, 38 for the Giant Panda, 9 for the Snake, and 2 for the Penguin.



Figure 4 A Featured Linguistic Landscape for Science Popularization (FLL)

Other Linguistic Landscapes (OLLs) refer to LLs that fall outside of those four categories mentioned above but are still within the scope delineated by this paper (Figure 5). Although there are different subcategories under OLLs, such as Notion Promotion LLs,

Noticing LLs, and Introductory LLs, they are classified into one category for general treatment due to their indirect connection with the knowledge about animals in Beijing Zoo.



Figure 5 An example of Other Linguistic Landscapes (OLLs)

4.2 Analysis under “Norms”

“Norms of Interaction” and “Norms of Interpretation” are two components of “Norms.” In the context of the linguistic landscape, “Norms of Interaction” refer to “specific behaviors and properties that attach to the written production of language.” They are codified in the national or local standards for language use in the public space, and regulations at different levels or for different industries apply to different LLs found in various places and contexts. “Norms of Interpretation” include the specific meanings that are ascribed to the behaviors and properties and implicate the system of beliefs of a community.²⁷

This paper carries out its analysis mainly from these two aspects. Firstly, it checks whether various types of LLs studied in this paper conform to the national or Beijing’s standards and requirements, with a focus on finding out non-compliance with these norms. Secondly, this paper tries to explore whether there are “hidden norms” apart from official standards in LLs themselves or among these different LLs in Beijing Zoo, which may reveal some specific meanings, such as the Zoo’s preference for science popularization of different animals.

4.2.1 Errors on Linguistic Landscapes in Beijing Zoo

The official website of Beijing Zoo shows the Regulations of Parks in Beijing Municipality which stipulates that “公园的各类牌示应当保持整洁完备，牌示上的文字图形应当规范，牌示内容中的文字应当中外文对照” (All kinds of signs in the park shall be kept clean and complete, the text and graphics on the signs shall be standardized, and the text of the signs shall be written in corresponding Chinese and foreign languages). Also, according to *Basic requirement of service for park* (GB/T 38584-2020), *Code for design of zoo* (CJJ 267-2017), *Guidelines for the use of English in public service areas -- Part 1: General rules* (GB/T 30240.1-2013), etc., this paper identifies errors on five categories of LLs in Beijing Zoo.

On Linguistic Landscapes for Basic Information (LLBIs), there are errors in both Chinese texts and English texts. Chinese errors occur on 39 LLBIs, accounting for 16.7% of the total, and they include punctuation error, incomplete sentence, structural disorder, improper collocation, knowledge-related error, and spelling error. English errors occur on 146 LLBIs, accounting for 62.4%, and they are reflected at five levels, including punctuation, lexicon, sentence, information, and name, among which the former four levels have a detailed classification.

On Interactive Linguistic Landscapes for Science Popularization (ILLs), there are few errors in the Chinese text but more errors in the English text on ILLs and their types are diversified, which include incomplete translation, mistranslation (both in the form and in the meaning), spelling error, and grammatical error. Among all the 31 ILLs, English errors occur on 19 of them, accounting for 61.3%.

Seven kinds of errors occur on Joint Linguistic Landscapes for Science Popularization (JLLs), including incomplete translation, mistranslation, spelling error, grammatical error, punctuation error, repeated content, and Chinese error.

Five types of errors occur on Featured Linguistic Landscapes for Science Popularization (FLLs), namely, spelling error, grammatical error, mistranslation, punctuation error and other errors. In addition, for the personalized introduction of giant pandas in Beijing Zoo, a uniform standard should have been implemented, but they have the following errors: not all the English versions of giant pandas' names have explanation; the form of explanation, the form of the birthday information, and the person of the narration are not uniform. All these have greatly affected the presentation of the Giant Panda's FLLs.

Other Linguistic Landscapes (OLLs) in this paper mainly include Noticing LLs, Introductory LLs, and Notion Promotion LLs. For Notion Promotion LLs, they have a variety of sources, including African Wildlife Foundation (AWF), "Roots & Shoots" Program started by Jane Goodall, the British Embassy in Beijing, Wildlife Conservation Society (WCS) and Humane Society International. There are 52 Noticing LLs and 22 have errors which include five categories: mistranslation, capitalization error, spelling error, grammatical error, and inexplicable content. Introductory LLs are difficult to be separated for counting the number, but they can be divided into two parts based on the content: one is "BEIJING ZOO" which gives general introduction to the Zoo, and the other is "Rules and Regulations." The text of the former has the error of mistranslation, which misuses "interior" as "inland" to express "内陆." There are 12 Notion Promotion LLs and 8 have errors, which can be divided into three categories: grammatical error, incomplete translation, and mistranslation.

4.2.2 "Hidden Norms"

In the above section, this paper analyzes various LLs in Beijing Zoo under "Norms of Interaction" and identifies their non-compliance with current regulations, requirements or guidelines. These norms are clear and obvious because they are in a written form and have been made public, which, in this paper, are regarded as "explicit norms." Furthermore, this paper argues that implicit norms exist in LLs in Beijing Zoo, which have no public regulations to conform to but are closely related to the genre of LLs. This paper regards the genre as a "community" constructed by LLs and holds that in or among different "communities," hidden norms can reflect in-depth meanings or notion for setting or making these LLs.

For Linguistic Landscapes for Basic Information (LLBIs), this paper not only analyzes their contents but also searches on the Internet to conduct a further check. The first "hidden norm" of LLBIs is that "Chinese and English are not necessarily in a correspondence." For some of the content, such as information about the reproduction, Chinese and English are almost in a corresponding relationship. Some content is roughly corresponding in Chinese and English, which, this paper thinks, is because LL makers make some adaptation during translation. Other bilingual contents do not have a corresponding relationship, where different information is provided by two languages respectively. The second "hidden norm" of LLBIs is that "Smaller LLBIs are only applicable to animals with diverse species and should provide less information in both Chinese and English texts than bigger LLBIs." Smaller LLBIs are different from bigger ones mainly in the content and layout. Smaller LLBIs delete the block of "繁殖," cut much of the information in "习性," and sometimes add the new block of "分

布” in their Chinese texts. Also, only amphibians, reptiles, birds, and poultry have smaller LLBIs. For amphibians’ and reptiles’ LLBIs, information in “习性” and in English texts is about the distribution or habitats of animals. For birds’ and poultry’s LLBIs, information in “习性” is mainly about the habitat and food of animals, and lots of them use “以植物及昆虫为食” when introducing animals’ food. Their English text mainly describes the habitat. What’s more, smaller LLBIs no longer list the English name of animals separately but subordinate them to the Chinese text and also reduce the amount of English texts, putting them under the Chinese texts. This paper thinks smaller LLBIs are adopted due to two reasons. Firstly, animals with smaller LLBIs usually have diverse species, and this makes it harder to find out specific or distinct information for each of them, which would also play burden on the making of LLs. Secondly, these animals tend to be small in size or unique in habits which has made the study of them more difficult, thus resulting in insufficient information. The third “hidden norm” of LLBIs is that “All should show the animal’s status in the IUCN Red List of Threatened Species.” For both bigger and smaller LLBIs, assessment information based on IUCN Red List is provided in the form of a picture obtained from IUCN’s official website and with Chinese translation. Maybe it is because all zoos should promote the animal protection, which Beijing Zoo does well on LLBIs.

For Interactive Linguistic Landscapes for Science Popularization (ILLs), their first “hidden norm” is that “In the subcategory of ‘鸟喙与智慧,’ the Chinese text should adopt the formula of ‘自带+工具+的喙’ and the English text should adopt ‘Beak with + tool.’” The second “hidden norm” of ILLs is that “In ‘明星动物,’ texts should use the first person to give a personified description of animals that are familiar to the public and are facing the danger of extinction in the wild.” The subcategory of “明星动物” of ILLs selects the Asian elephant, the Chimpanzee, the African Lion, the Siberian Tiger, the Golden Monkey, the White Rhinoceros, the Hippopotamus, the Giraffe, the Polar Bear, the Black Bear and the Red Panda. All these animals are on the IUCN Red List with a certain degree of danger and are usually talked about in the daily life, such as in cartoons, films or documentaries. Through the use of the first person, texts on ILLs humanize animals, allowing them to express their outstanding characteristics and bridging the distance between animals and visitors. The third “hidden norm” of ILLs is that “In ‘动物知识问答,’ information for science popularization should solve common doubts of animals and encourage an interactive participation of visitors.” Questions in “动物知识问答” are tourist-oriented, focusing on confusion or mistakes that tourists tend to make, such as “Is the red panda the brother of the giant panda?” In the meantime, they do not give answers directly; instead, they encourage visitors themselves to scan the QR code on ILLs to find the answer. After visitors scan the QR code, the phone will open a page where not only answer to the question but also more Chinese information of the animal are provided. It is also worth mentioning that all ILLs are equipped with QR codes for visitors to scan to obtain more animal information in Chinese.

For Joint Linguistic Landscapes for Science Popularization (JLLs), their first “hidden norm” is that “JLLs should select African animals that have a high public visibility and a venue with a larger range in the Zoo.” Animals with JLLs are big in size and well known to the public, such as the Giraffe, the Chimpanzee, etc. Moreover, venues of these animals usually have large outdoor fields which not only allow them to have sufficient space for activities but also enable the venue to have enough space for the placement of JLLs. The second “hidden norm” is that “JLLs should focus on promoting the knowledge of African wildlife protection.” With the main responsibility to protect African wildlife and promote the protection, African Wildlife Foundation (AWF) had an official cooperation with Beijing Zoo from 2019 to 2020, which might have given birth to the JLL. Therefore, compared with other LLs in Beijing Zoo, JLLs not only give detailed information of animals themselves, including

reproduction, physical traits, etc., but also introduce specific information about wildlife protection, such as “REASONS FOR CONSERVATION” and “THREATS.” The third “hidden norm” is that “JLLs should promote the AWF.” In addition to the logo of AWF on every JLL, blocks such as “AWF CONSERVATION APPROACHES” are specially set up to show the public what AWF is doing or has done for wildlife protection, thus expanding its presence and influence.

For Featured Linguistic Landscapes for Science Popularization (FLLs), five animals’ FLLs have their own characteristics, and Beijing Zoo also has certain emphasis on different animals. The first “hidden norm” of FLLs is that “They should carry out different degrees of science popularization for different animals according to their connection with China, Beijing, or Beijing Zoo.” The Giant Panda, as the national treasure of China, has richer information for science popularization on its FLLs. The Penguin does not exist in China and has the least content on FLLs. The other three animals have moderate amount of content: the Chimpanzee does not exist in China at present, but Jane Goodall, the world-famous scientist, once visited Beijing Zoo; the Lizard is related to Chinese history and culture and its distribution in China has certain characteristics; the Snake’s distribution and its current situation in Beijing have certain characteristics. The second “hidden norm” is that “The Giant Panda’s FLLs should reflect the important value of giant pandas from cultural, social and scientific aspects and also present the solid efforts and excellent achievements for the protection and research of giant pandas made by China.” Their content mainly includes personalized introduction of giant pandas in Beijing Zoo, giant pandas and the Olympic Games, protection of giant pandas in the wild, researches on giant pandas and results, interesting stories of giant pandas, etc. Chinese and English texts are not in a rigid corresponding relationship because the Chinese content is usually more comprehensive, which may be partly result from the limited space left for English. Taking a closer look at the detailed content, this paper finds that these FLLs mainly show the key role of giant pandas in China’s bid for the Olympic Games and Asian Games, the arduous development of China’s earlier research on giant pandas and international cooperation, and the contribution of Beijing Zoo to the research on giant pandas, all of which are about China or the Zoo. The third “hidden norm” is that “The Chimpanzee’s FLLs should focus on visitors’ personal experience and present the positive effects of Beijing Zoo on chimpanzee rearing.” Their content mainly includes information about Jane Goodall, status of chimpanzee protection, anecdotes about chimpanzees, facilities in the venue, etc. “Chimpanzee Kitchen” has been set up to let visitors see the process of preparing food for chimpanzees in Beijing Zoo on the spot. “Gorilla Passage” enables visitors to enjoy a sense of connection between them and chimpanzees with better viewing and closer distance. Also, Jane Goodall, the internationally renowned expert on chimpanzees, was honored by Beijing Zoo, which shows the positive influence of Beijing Zoo on chimpanzee breeding. The fourth “hidden norm” is that “The Lizard’s FLLs should highlight the diversity of lizards and show lizards’ information unique in China.” Their content focuses on introducing various lizard species, all with unique characteristics, and show the historical and cultural value of lizards in China. The fifth “hidden norm” is that “The Snake’s FLLs should not only increase the public’s knowledge of how to prevent snakes or how to improve their defense capabilities, but also break down prejudices and emphasize the importance of snake protection.” Their content seems to focus on providing suggestions for people to keep away from snakes because for most people, snakes are scary and will bring danger. Therefore, these FLLs introduce physical characteristics and living habits of snakes in detail and specifically, how to protect themselves from poisonous snakes. However, although the impression of snakes to the public is mostly negative, the Snake’s FLLs in Beijing Zoo still illustrate the ecological value of snakes in Beijing, trying to change some public stereotypes and promote the protection of snakes and their living environments. The sixth “hidden norm” is that “The

Penguin's FLLs should exist." Their content is less than the other four animals, mainly introducing the habits and species in Chinese and English texts which are not in a correspondence. But penguins are not native in China, which means FLLs can help visitors know more about them.

4.3 Analysis under "Instrumentalities"

"Agha (2004: 24) defines register as 'a linguistic repertoire that is associated, cultural-internally, with particular social practices and with persons who engage in such practices.' For LLs, this includes lexical choice, orthography and syntax."²⁷ For codes, Huebner thought that different languages have different orthography and grammar rules; so they may influence each other, making the situation more complex.²⁷ From the perspective of register and code, this paper explores the reasons for errors on the bilingual LLs in Beijing Zoo and puts forward suggestions for further improvement.

4.3.1 Reasons for Errors

This paper has made statistics on errors on LLs in Beijing Zoo, and results show that errors in Chinese texts are far fewer than those in English texts and that errors in each category of LLs are also different. It should be noted that, in this paper, the number related to errors mentioned is not the number of errors themselves but the number of LLs or blocks on which these errors occur. This paper holds that one of the many causes of errors is related to the carelessness of the LL makers, but in this section, the paper tries to dig out deep reasons, namely, the incompetence of building the register and the lack of awareness of differences between Chinese and English, etc. The former may be reflected as the low proficiency of language or the disobedience to standards about LLs, and the latter is shown by the misuse of Chinese grammar into English, etc., which may imply the fact that Chinese is still the dominant language in Beijing Zoo and that it requires more emphasis.

Among Linguistic Landscapes for Basic Information (LLBIs), 16.7% have errors in the Chinese text, in which the majority are grammatical error, followed by punctuation error, misspelling and knowledge-related error. It can be inferred that the main reason is that LL makers are not careful about and pay insufficient attention to some Chinese expressions that easily cause confusion or errors. And 62.4% of LLBIs have errors in the English text. These errors are mainly distributed at lexical and sentence levels, with the former accounting for 48.0% of these LLBIs and the latter accounting for 56.9%. At the lexical level, verb-related errors are the most common, especially in person and number. This paper suggests that this may be due to the makers' lack of understanding of the differences between Chinese and English. In English, the number of the predicate verb should agree with the number of the subject. For example, in "where food and water is available" on the Cockatiel's LLBI, its subject is plural but its predicate is singular. However, in Chinese, the verb does not have the concept of number, and the verb won't change according to the subject. In this case, it is very likely for LL makers, who are usually native Chinese, to ignore the number of English verbs and use Chinese rules when producing English texts. At the sentence level, the most common errors are incomplete sentences, namely, lacking the subject, the predicate, or both. This paper argues that this error is still caused by the unawareness of differences between the two codes. That is to say, Chinese can combine lots of clauses together and these clauses are not obliged to be structurally complete; while English should obey the grammar rules and produce complete sentences.

Among Interactive Linguistic Landscapes for Science Popularization (ILLs), 73.7% of them have errors in the translation. This paper holds that the mistranslation in the meaning may be due to the low language proficiency or poor translation ability of LL makers and that the mistranslation in the form may be due to the makers' failure to make sure that the

expression should remain uniform in terms of register. The uniformity based on standards helps the audience to immediately realize that they are in the specific register and understand information more effectively, which helps to better implement the science popularization.

All animals' Joint Linguistic Landscapes for Science Popularization (JLLs) have errors. Among the eight blocks with the uniform classification of errors, grammatical errors and mistranslation are the two most frequent errors, which can also be attributed to the lack of language proficiency of LL makers. In addition, in some blocks, such as "AWF CONSERVATION APPROACHES", their text is in the form of phrases; for others, such as "SOCIAL BEHAVIOR", their text is in the form of complete sentences. Both of them are form-uniform in their register. However, in the two blocks of "THREATS" and "REASONS FOR CONSERVATION", the form of the text is mixed, and the reason here can still be attributed to the lack of register consciousness of the LL makers.

For Featured Linguistic Landscapes for Science Popularization (FLLs), except for a few FLLs of the Giant Panda, almost all other FLLs have errors, among which, grammatical errors and mistranslation are still the most frequent errors. As for grammatical errors, run-on sentences are the most common, which this paper believes may be attributed to the effect of Chinese on LL makers when translating. In Chinese, there is a structure called running sentence, which can connect many complete sentences directly through commas; but in English, complete sentences can only be connected by adding conjunctions or changing some components' morphology. Due to the LL makers' lack of understanding of and lack of attention to this difference, run-on sentences frequently occur in English texts of FLLs. The most common type of mistranslation happens in the word meaning. If not given much consideration, some English words seem to correspond to the Chinese meaning, but what LL makers are not aware of is that the positive and negative implications of English words, idioms, etc., are not consistent with the Chinese meaning which they want to express, such as the "撒娇" and "coquetry." Some FLLs even have situations where words are derived and used randomly, resulting in wrong meaning. This paper believes that the reason leading to these errors is LL makers' low language proficiency and lack of understanding of differences between Chinese and English.

For Other Linguistic Landscapes (OLLs), 42.3% of Noticing LLs have errors, which are mainly wrong capitalization and translation errors. This paper believes that the main reason for these errors is that LL makers do not have a deep understanding of the register, so they violate the rules of the register or mistakenly put expressions of other registers into OLLs. 75% of Notion Promotion LLs have errors, which are mainly incomplete translation. This paper believes that the reason for these also lies in the incompetence of building the register and the consequent failure to abide by explicit norms.

4.3.2 Suggestions for Further Improvement

After finding out the errors on LLs in Beijing Zoo and exploring the possible reasons, in order to further improve their quality, this paper seeks relevant texts on the official websites of foreign zoos and takes them as references, hoping to provide some suggestions on language expression and content range. In this paper, two foreign zoos are selected, namely, Columbus Zoo in the United States and Toronto Zoo in Canada. Only LLBIs are selected because this category is common to all zoos around the world.

In terms of language expression, this paper selects four aspects to analyze, including name, distribution, eating habit, and reproduction on LLBIs. For the expression of names, LLBIs in Beijing Zoo are confusing and irregular. They adopt "name in the plural form," "The + name in the singular form," "name with all first letters capitalized," and "name with the first letter capitalized," some of which, to some extent, even do not comply with grammatical rules. In contrast, two foreign zoos adopt the first two expressions. So, this paper

suggests that the name expression on LLBIs should be modified based on them. For the expression of distribution, contents on LLBIs in Beijing Zoo are similar to those of foreign zoos. “Be found in + place” and “inhabit + place” are two frequently used expressions. In foreign zoos, the plural form is most used and complex expressions seldom appear. Therefore, this paper suggests that Beijing Zoo maintain the uniformity of form in these expressions, and search for professional terms to improve the accuracy of expression. For the expression of eating habits, there exist some differences between Chinese and foreign expressions. Beijing Zoo mainly uses expressions of “feed on + food” or “eat + food.” Columbus Zoo mostly uses “eat + food” while Toronto Zoo mostly uses “feed on + food,” often uses “eat + food” or “diet consists of,” and rarely uses other expressions. In this regard, Beijing Zoo performs well in its English text. In the meantime, it is worth noting that most of Toronto Zoo’s information about animals’ food includes “herbivore,” and other biological terms to concisely show the animals’ eating habits. Therefore, this paper suggests that Beijing Zoo include such words to provide a clearer profile of the eating habit. For the expression of reproduction, the English text of Beijing Zoo is mainly translated from Chinese and is prone to be incomplete sentences and rigid expressions, most of which use “estrus,” etc. However, in the two foreign zoos, most of the expressions for reproduction are complete sentences. And in foreign zoos, “estrus” is rarely seen but “mating season” or “breeding season” is often used. Therefore, it is suggested that Beijing Zoo can refer to language expressions of foreign zoos and polish LLs in Beijing Zoo to make them more English-friendly.

In terms of content range, foreign zoos contain more aspects about animal information, the content itself is rich, and the phenomenon of unequal introduction of animal information is seldom found. For example, Columbus Zoo introduces basic information, nutrition, current and historic range, habitat, physical characteristics, reproduction, communication, behaviors, predators, etc. Toronto Zoo includes distribution, habitat, diet, reproduction, adaptation, threats to survival, etc. This may show that foreign zoos tend to provide more information about the physical characteristics, historic facts about animals, and threats of animals, which might inspire Beijing Zoo with more options for science popularization. So it is suggested that LLBIs in Beijing Zoo can add these contents which can not only further enrich the tourists’ knowledge of animals and promote science popularization, but also make the public aware of the living situation of animals and contribute to animal protection.

5. Conclusion

This paper analyzes the Chinese-English bilingual linguistic landscapes in Beijing Zoo through the SPEAKING Model. In terms of “Genres,” this paper identifies five categories of LLs in Beijing Zoo according to their characteristics. Linguistic Landscapes for Basic Information (LLBIs) are available to all animals, which mainly introduce the basic information of animals. Interactive Linguistic Landscapes for Science Popularization (ILLs) are available to some animals, whose main feature lies in their interactive forms of questions and answers for science popularization. Joint Linguistic Landscapes for Science Popularization (JLLs) are unique to eight African animals and they are supported by the African Wildlife Foundation (AWF) with more animal information. Featured Linguistic Landscapes for Science Popularization (FLLs) belong to only five animals, which show the connection between animals and human or society and are combined with the animal venues in design. In terms of “Norms,” this paper points out errors in bilingual LLs in Beijing Zoo in accordance with the national, local and industrial standards. It finds that there are fewer errors in Chinese than in English and that different LLs have different types of errors. What’s more, this paper innovatively regards each type of LLs as a “community” and tries to explore its “hidden norms.” In terms of “Instrumentalities,” this paper explores the reasons for errors in LLs in Beijing Zoo from two angles, namely, register and code. It finds that, in addition to the

carelessness of the LL makers, the lack of cognition of register, and differences between Chinese and English all contribute to the occurrence of errors. Then, by referring to relevant texts from two foreign zoos, this paper provides some suggestions for improving the language expression and content range of LLs in Beijing Zoo.

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