

Theory of English Animal Noun of Communicative Functions and Translation

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Keywords: Animal Noun Figurative Human, Communicative Function, Comparative Study, Quantitative Statistics

Abstract: To explore the usage, emotion and translation of animal nouns in English. Methods: The animal words in English metaphors quantitatively sememe, statistics, this article selects the Oxford advanced dictionary (7th edition) animal word quantitative statistics, in 535 animal noun 25 typical English animal noun people on the comparison and analysis, and through the questionnaire survey method investigating the cause of the English and Chinese animal noun people different. Results: Among the 25 cases, 10 cases had great differences in the way of figurative person, 6 cases had great differences in the way of figurative person. The results of the questionnaire show that the differences in age, education, environment and cognitive ability are the main reasons why animal nouns refer to people in English and Chinese. The metaphor of animal nouns in English reflects the cultural pattern of human beings to some extent, but people's associative nature of animals may not correspond to the metaphorical meaning of animals.

1. Introduction

In the long history, animals existed before humans. Humans and animals are closely related and interdependent, and their commonness is greater than their difference [1]. Therefore, human languages are full of animal words and hidden meanings, and English is no exception [2]. While reflecting the objective world, English animal words have accumulated and conveyed a large number of cultural information and connotations, which have undergone constant changes and enriched the forms of language expression [3]. As a kind of metaphor, animal metaphor is a universal linguistic phenomenon, which exists in a large number of language forms, such as poetry, idiom, euphemism, and even advertising language [4]. Moreover, animal metaphor is also a specific

expression in the process of language development, which has gradually become the research object of many experts and scholars [5]. Animal noun metaphors are by animal verbs change to achieve the purpose of the people, animal name of verb refers to according to the image and characteristics of animals themselves have the noun, verb, in order to know and explain the essence of human characteristics, hopes and express people's feelings, contain their feelings with the tendency of good, such as derogatory sense [6].

Western scholars play a leading role in the study of animal metaphor. In literature [7], the author investigates the origin of wildlife names and the most commonly used anime related proverbs. In literature [8], the author analyzes the recognition of the concept of "self" related to the animation metaphor. Literature [9] believes that animal metaphors can describe most negative characteristics of human beings to some extent. In literature [10], the author makes a detailed study on animal metaphors to prove that animal metaphors can map different information from source to target domain. In literature [11], the author points out that animal metaphors can reflect how we treat human relations and how we compare animal expressions in Chinese and German according to conceptual metaphor theory, so as to inform and evaluate the demands of society on us. However, domestic scholars lag behind foreign scholars in the study of animal metaphor, and the existing research achievements include the semantic study of animal metaphor, the cultural study of animal metaphor and the translation study of animal metaphor. In the semantic study of animal metaphors, xiao yaoyao discussed the cognitive basis of animal metaphors and further explained the semantic changes of animation metaphors [12]. In the study of animal metaphor translation, most scholars have dominated the way of culture-driven translation to promote the vivid image of the translated version. The research emphases at home and abroad are different, but they all provide methods and ideas for the research of this paper.

In this paper, from the perspective of western thought, with the British and American cultural background knowledge to analyze and explain the Anglo-American culture animal metaphors of the emotion, take a look at is how to use animals to people in English, and what is the symbolic, with Chinese culture and habits and way of thinking, eliminate the influence of the thinking of Chinese, cultivate English thinking habit, learn to use the pure English. In the study on the conceptual metaphor theory and conceptual integration theory as the theoretical basis, first of all the animal words in English metaphors people carries on the quantitative statistical sememe, select "the Oxford advanced dictionary (7th edition) animal word quantitative statistics, and combining with the" modern Chinese dictionary "relevant comparison analysis, then select 10 in 535 animal nouns in typical Sino-British differences of Chinese-English comparison analysis, the second through the questionnaire survey method investigating the cause of the English and Chinese animal noun people different, and so on English animal noun person communication function and translation methods of analysis.

2. Theoretical Research

2.1. Theoretical Basis

(1) Conceptual metaphor theory

This theory is proposed by Lakoff and Johnson, which holds that the conceptual system of human beings is metaphorically constructed and defined. They think that metaphor is not the decoration of rhetoric, and conceptual metaphor is a metaphorical system, which is hidden behind our daily language and conceptual system. They also point out that metaphor is a cross-domain mapping between the source domain and the target domain in a conceptual system. The core contents of his theory are: metaphor is a cognitive means; Metaphor is conceptual in nature; Metaphor is a systematic mapping across conceptual domains. Mapping follows the principle of

constancy; The use of conceptual metaphors is subconscious. They divided metaphor into three types: structural metaphor, directional metaphor and ontological metaphor.

(2) Concept integration theory

An important part of the concept integration theory is the concept integration network, which refers to the psychological space network with the frame as the structure. The frame is constructed from the speaker's background knowledge. American linguist Gilles Fauconnier and Mark Turner argues that the concept of a complete integration of network space includes four concepts: input space I II input space, generic space, space synthesis. With the development of this theory, the conceptual integration network also includes four subnetworks with different "emerging meanings": simple network, mirror network, single domain network and double domain network.

2.2. Translation Methods of Animal Nouns

There are three methods of translating animal nouns: literal translation, correspondence and interpretation.

(1) Literal translation

Literal translation refers to the translation according to the language itself, without any emotional or additional meaning. For example, we can directly translate "The camel is The ship of The disert" into "The camel is The ship of The disert". In our life, we often use this sentence to explain that The camel is an important tool for us to survive in The desert. Literal translation can retain the meaning of idioms or proverbs, but in some cases, literal translation is not a good choice, which will lose its meaning and obscure the meaning.

(2) Correspondence method

Idioms or proverbs that correspond to each other in English and Chinese can be translated according to the meaning in Chinese [13-14]. For example, "One must howl with the wolves" can be translated as "when in Rome, do as the Romans do. However, the application of correspondence method also has its limitations. Although some proverbs and idioms in English and Chinese correspond to each other in meaning, their additional meanings are not the same and show different emotional or evaluative meanings. That is, in this case we can not use the correspondence method for translation. In English, for example, "to the lock (shut) the stable when the feel horse has bolted" refers to "after suffer to pay special attention to," it is too late, the idiom "mend" in Chinese on the meaning is not completely corresponding, the former refers to the lost behind the action, it is too late, has a negative meaning; While the latter refers to the loss after the timely repair, in order to prevent damage again, contains a positive meaning.

(3) Interpretation

The interpretive method refers to pointing out the true meaning of the proverb or idiom directly in the translation process. For example, we use interpretation to translate "Birds of a feather flock together" into "Birds of a feather flock together", and use literal translation to translate into "Birds of the same feather flock together". Clearly explain method is used more appropriate expression of the meaning of the sentence, in the process of explanatory translation to correctly grasp the essence of the original and essence of the moral deep, philosophical sentences more careful scrutiny, carefully grasp, hard to find the best point in the two kinds of culture, so that both characteristics of the translation and the connotation of the original sentence, eventually achieve the ideal communicative purpose.

2.3. Animal Nouns Refer to Human Emotions

There are three kinds of emotional colors in animal nouns: positive, negative and neutral.

(1) Commendatory animal metaphor

1) About the dog

As for the concept of dogs, westerners are quite different from Chinese people in terms of traditional culture and national feelings. They love dogs from the bottom of their heart and think dogs are man's best friend. Westerners love to hear stories about dogs, and they love to watch movies and books about dogs. In English vocabulary, the phrases and sentences associated with dogs are mostly commendatory and are used specifically to refer to people. For example, the word "dog" in reverse is God, which is opposite to God. A lucky dog means "a lucky person"; A jolly dog means "happy person"; Top dog means "the highest authority, the winner"; "Love me, Love my dog" means "Love me, Love my dog has his own day. Dog face means "soldier", not "dog face"; Dog-watch means "night watch", not "dog watch"; "It is dogged that does It" means "nothing in the world is difficult for one who does It".

2) About the lion

In the United Kingdom and the United States, the lion is the king of beasts. The lion is a symbol of strength, power, power and justice. So there are many idioms about lions in English, using lions to describe things and express aspirations. For example, a lion in the way means to get in the way of something, especially a terrible obstacle. A British lion; A literary lion is a literary lion. "He is a lion" means "He is a brave man, or He is like a little tiger"; Come in like a lion and go out like a lamb; Like a donkey in a lion's hide. "Lion -hearted" means "brave".

(2) Pejorative animals refer to people

1) About the dragon

Dragon is a derogatory word in the western style and a symbol of evil. In western mythology, the dragon is a feared demon. In the bible story, dragon is the incarnation of evil. People call the devil satan who fights against god the great dragon. In the Anglo-American dictionary, the definition of dragon is: a fictional, imaginary, particularly ferocious animal, like a giant lizard, with wings and claws, scales, a long tail of a snake, and a mouth that can breathe fire. Common expressions and meanings of dragon are: the Old dragon means "Satan, the devil"; To chase the dragon means to take drugs; To sow dragon's teeth means to sow the seeds of destruction.

2) About Chicago-brewed goose

The British and Americans hate everything about geese, and goose is often used as a derogatory metaphor to express the feeling of horror. For example: goose skin, goose-flesh, goose bumps, goose-pimples, goose skin, goose-pimples. He is a goose. He is a goose. He is a goose.

(3) Neutral animals refer to people

He squirreled away all sorts of folk legends that He later wove into stories.

Squirrel, used as a verb to mean to collect and keep for the future use, is an animal whose instinct is to "hide things" for the winter when it comes. Here, the characteristics of squirrel's life habits are used to describe the similar characters, so as to make the expression vivid.

3. Experiment

3.1. Experimental Methods

(1) Quantitative research method

Quantitative research method is to conduct statistics on a specific subject feature. In quantitative research, information is represented by some number. In the processing of these Numbers, analysis, the first to make clear the information data is based on which scale of measurement, processing. Quantitative research of this paper is mainly aimed at "Oxford advanced dictionary" and "modern Chinese dictionary" the two dictionaries, mainly aims at the structure of the word, emotional meaning, semantic level, and people get way four aspects to analyze data, provide data base for subsequent comparative study, also is helpful for our analysis of the difference between the

languages animal nouns in English metaphors in our contact with animal nouns in English based on better understanding of Chinese people's communication function and translation.

(2) Comparative study

Contrastive research method, also called contrastive analysis method or comparative analysis method, is an analysis method that prompts the difference between the actual number and the cardinal number through the comparison between the actual number and the cardinal number, so as to understand the achievements and problems of economic activities. Induction refers to the method of synthesizing specific and individual things separately to reach a general conclusion. Therefore, in logic, from the individual to the general form of thinking has always been called induction. Contrast is through the comparison of different things, to seek the same in the same or the same in the same research method. The comprehensive application of inductive contrast method can systematize and theorize scattered and unsystematic knowledge, and can also find out the similarities and differences of things and distinguish similar things by comparison.

The comparative study of this paper is divided into two parts. The first part is a comparative study of the four aspects of word structure, emotional color, semantic level and the acquisition way of metaphorical meaning in the Oxford advanced dictionary and the modern Chinese dictionary. The second part is a comparative analysis of 25 typical animal nouns in English and Chinese to find out the differences in translation and communication process between them, so as to help us better understand the communicative function of animal nouns in English and facilitate our better translation process of animal nouns in English.

(3) Questionnaire survey

Questionnaire is a widely used method in social investigation at home and abroad. A questionnaire is a form used for statistics and surveys to ask questions. Questionnaire method is a method for researchers to measure the problems studied by this kind of controlled measurement, so as to collect reliable data. Most questionnaires are sent by mail, individually distributed or collectively distributed. The specific survey adopts the combination of online survey and offline survey.

In order to understand the reason of difference in the English languages animal noun people, we will survey questionnaire is divided into three parts: the basic information of the respondents (including age, gender, education level, whether received overseas education), the growth of the respondents environment as well as the research object of cognition (mainly refers to the learning of English level) of three parts, a total of 12 problem is designed. The subjects of the survey were college students and on-the-job workers who had been exposed to English learning. The main purpose of the survey was to understand whether age, education level, growing environment and cognitive ability are the reasons for the differences between Chinese and English animals.

3.2. Specific Steps of the Experiment

(1) Quantitative research process

Firstly, collect data for quantitative research. This paper mainly focuses on two dictionaries, Oxford advanced dictionary and modern Chinese dictionary, and collects data from four aspects: word structure, emotional color, semantic level and acquisition method of figurative meaning.

Secondly, the data of quantitative research are classified. Term structure is mainly divided into single morpheme word, derivative and compound word, emotion is mainly positive, negative, and neutral ones, semantic level is the name of the class animal nouns, people meaningful class name animal nouns, proper noun animal nouns and the meaning of people have proper noun animal nouns, man meaning access mainly include general way, extension transformation by four ways, backward extension, and with the aid of idioms, statistics every aspect of each specific class number and

proportion.

Finally, the collated data is analyzed. This paper mainly analyzes the number and proportion of the four statistical features, and finds out the differences of animal nouns in Chinese and English languages. According to these differences, we will get closer to the reality in the process of translating and using animal nouns to refer to people, and pay attention to the language translation and communicative culture in English.

(2) Comparative study process

The process of comparative study is divided into data and case analysis. The comparative study of data is mainly carried out based on the data of quantitative research process, which is not detailed here. The following is only the comparative study process of cases.

Firstly, identify the cases in the comparative study. This paper selects 25 typical English animal nouns for comparative analysis in Chinese and English, but only 10 cases with great differences in the ways of figurines are analyzed in this paper, which are taken as the case study object of this paper. Secondly, a comparative study of cases. This paper mainly enumerates the differences between English and Chinese in the translation of these 10 cases, and finds out the characteristics of the use of animal nouns in English according to these differences, so as to facilitate our better use and translation.

(3) Questionnaire survey process

Firstly, the questionnaire was designed, distributed and recovered. We divided the questionnaire into three parts: the basic information of the respondents (including age, gender, education level and whether they have received overseas education), the growing environment of the respondents and the cognitive ability of the respondents (mainly referring to the learning level of English). A total of 12 questions were designed. After that, online questionnaire survey was adopted, and data collection was conducted by means of directional distribution and receipt of E-mail. A total of 600 questionnaires were distributed and 560 were recovered, with a recovery rate of 93.3%. The high recovery rate of this questionnaire can provide data basis for the research of this paper, which is conducive to our understanding of the communicative function of animal nouns in English.

Secondly, the data of the questionnaire were sorted out. Mainly include age, gender, level of education, whether to accept a study in the growth of education, the investigation object environment and cognitive ability, the participants will be divided into age 19 to 28, 29-38 and 39 three ages, 48 years old, is set to the male and female gender, level of education are divided into junior college, university, graduate students and doctoral students, whether received education study is set to yes and no, the growth of the respondents environment setup for respondents to grow on your own environment satisfaction which are not satisfied, and satisfied, investigation of cognitive ability is set to English level 4, English level 6, designed four and eight. Then count the number and percentage of each option.

Finally, the collated data is analyzed. In order to better understand the communicative function and translation process of animal nouns in English and Chinese, this paper mainly analyzes the reasons for the differences between Chinese and English animal nouns in terms of the number and proportion of each choice.

4. Results and Discussions

4.1. Experimental Results

(1) Data analysis

In the process of quantitative research, we collected data from the Oxford advanced dictionary and the modern Chinese dictionary on the four aspects of word structure, emotional color, semantic level and acquisition method of figurative meaning, and analyzed the data from these four aspects graphically. At the time of statistics, there were 600 animal words in "Oxford advanced dictionary", 100 animal nouns that can be used to describe human beings, and 854 animal nouns in "modern Chinese dictionary", among which 35 are used to describe human beings. The data are shown in table 1.

		-	
	Total number	Animal nouns	Human nouns
		(Account)	(Account)
English	86000	600 (0.69%)	100 (0.12%)
Chinese	65752	954 (1.20/.)	25 (0.05%)

Table 1. The summary table

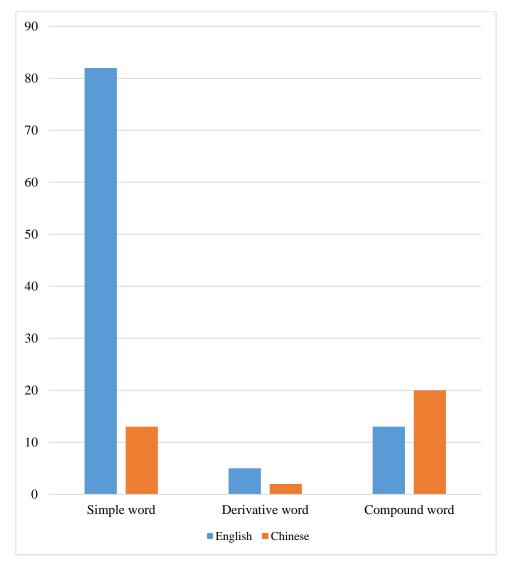


Figure 1. Structure comparison of English words

We can see in figure 1, the number of single morpheme word in English is higher than the number of single morpheme word in Chinese, but the number of derivative, the number of compound phase is similar, the number of visible single morpheme word may be lead to the

difference between the Sino-British animal noun metaphor as well as in the single morpheme word translation and use, should pay special attention to.

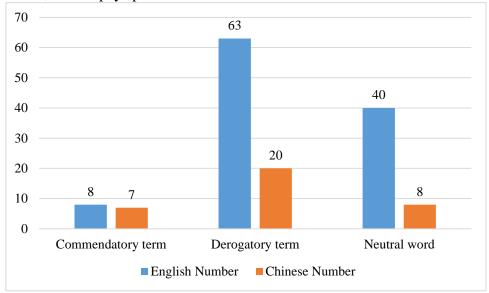


Figure 2. Comparison of emotional colors of words in English

From figure 2, we can see that there are more animal nouns with negative meanings in English, the number of neutral animal nouns is 40, the number of positive animal nouns is the least, and the number of positive words in Chinese and English languages is about the same, and the number of positive words and neutral words is very different. We should pay attention to the use of commendatory words and neutral words in the translation and use of animal nouns in English.

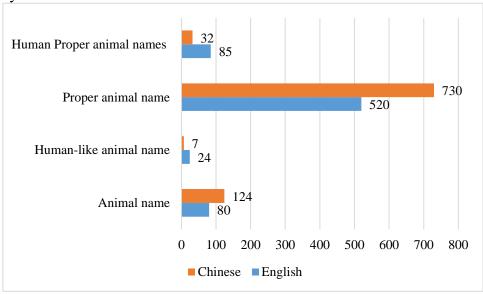


Figure 3. Comparison of word meaning levels in Chinese and English

We can see from figure 3, in English and Chinese languages, the noun is the name of the class animals are more likely to have people sense, although the number of proper noun animal noun is higher than the name of the class the number of animal nouns, but the name of the class have of animal noun meaning of vocabulary much higher proportions in proper noun animal nouns have of the significance of vocabulary in proportion.

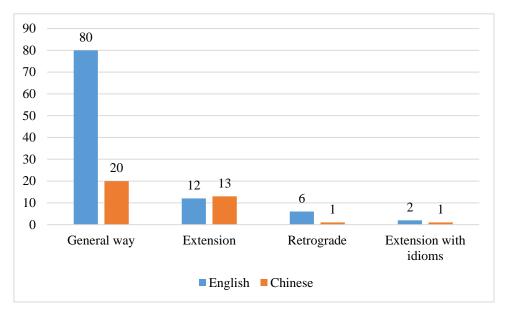


Figure 4. Comparison of Chinese and English figurative meanings

We can see from figure 4, animal nouns in English in the people's general way to account for the largest proportion, the extension and use idioms implied reverse way people less, animal noun metaphor in Chinese people's general way is also occupies the largest proportion, the extension and use idioms implied reverse way people less, visible regardless of language, the animal nouns are at relatively the same way.

In the process of data collection by means of questionnaire, the following figure 5 can be obtained by sorting out each data of questionnaire.

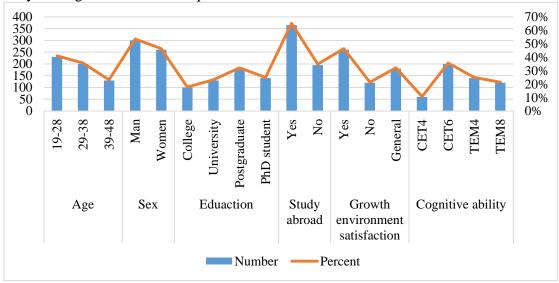


Figure 5. Basic information of survey subjects

According to the data we can see that the questionnaire investigation of the age distribution is relatively uniform, gender distribution is relatively uniform, level of education in the majority with graduate students, received a number of study abroad education is more, usually everyone is satisfied with your growth environment, cognitive ability mostly focus on the English six levels. Thus, the scattered data indicate that different levels of each person lead to the differences in the use of animal nouns in Chinese and English.

(2) Case analysis

In case analysis, the following 10 cases are mainly selected for analysis.

- 1) Duck means "cute" in English; The Chinese word for duck has the meaning of "slow".
- 2) The figurative meaning of carving in English derives from Greek mythology. Carving is both admired and mysterious in Chinese.
- 3) Although the frog is hoarse in English, the figurative meaning in Chinese is the thick and heavy feature of frog sound.
- 4) Turtle has a figurative meaning of "capsizing" in English. It is commonly used in Chinese for cursing.
- 5) Goats are typical of lechery and lasciviousness in English, while in Chinese they represent learned people.
- 6) The ostrich policy in English means "to avoid the reality and ignore the facts". In Chinese, ostrich is only used to refer to this kind of animal, there is no special figurative meaning.
- 7) The rabbit is said to have been changed by a witch in English, so the figurative meaning of the rabbit in English is mostly derogatory. And in Chinese legend, the jade rabbit is a medicine for the moon fairy goddess of the moon.
- 8) The owl is a symbol of "wisdom and prudence" in English. An image of an owl, or a living owl, brings wisdom to its owner. However, the metaphorical meaning of owl in Chinese is often derogatory.
- 9) Parrots see people from an animal's point of view in English, but animals from a human's point of view in Chinese.
- 10) Turkey in English represents a negative image, meaning "useless thing", "useless guy". But in Chinese, there is no special figurative meaning for Turkey.

4.2. Analysis of Experimental Results

(1) Difference analysis on the use of Chinese and English animal nouns to refer to people

The possible reasons for the differences in the use of animal nouns in Chinese and English are age, education, living environment and cognitive ability. As we age, we develop our own unique understanding of how language is used. With the increase of education, we will have a deeper understanding of animal nouns and develop our own unique ways of translation and use. A person's growing and living environment also determines whether he or she has the interest, motivation and conditions to further learn various characteristics of English animal nouns figurative human. Cognitive ability will provide more powerful support for learning English animal nouns figurative human.

(2) Case result analysis

According to the analysis of 10 typical cases, we can draw the following conclusions.

Firstly, animal nouns refer to human beings on the basis of animal characteristics and behaviors. As far as the animal noun is concerned, we can think that the anthropomorphism of animal characteristics and animal behaviors provides conditions for the anthropomorphism of animals. On the basis of anthropomorphism, we will often use animals to metaphor people to achieve better expression effect.

The second is that animal nouns refer to human beings and reflect human cultural patterns. Because the classification of animal behavior is universal, it is found that animal images have the same or similar marks in different languages. At the same time, after observing the cases, this paper finds that animal metaphors reflect their respective cultural patterns, that is, people may use their own cultural patterns to explain animal metaphors that are not directly in their native language.

Thirdly, the understanding of animal nouns is based on personal experience. Animal metaphors

seem to be understood in terms of personal experience constrained by human cultural patterns, rather than the way native speakers of another language use animal metaphors. The images of turtles, goats, frogs and parrots mentioned in the previous case studies are good examples of humans interpreting animal metaphors from their own experience. These examples also well illustrate that the relationship between metaphor and cultural patterns is varied.

Fourthly, is that people's associative nature or evaluation attitude towards animals does not necessarily correspond to the metaphorical meaning of animals. The attributes or evaluation attitudes associated with the literal meaning of words do not necessarily appear in the metaphorical usage, or even the opposite. This means that different cultural values and worldviews are not always a panacea for the metaphorical differences between languages.

5. Conclusion

In this paper, the differences between Chinese and English animal terms have been analyzed by various statistical methods, which has certain theoretical and practical significance. Theoretically, this paper provides sufficient evidence for the study of the generality and personality of animal nouns in English and Chinese, and enriches the study of animal nouns in human beings. However, there are still many problems in this paper. Firstly, the basis of statistics in this paper is the dictionary, which can certainly avoid random examples, but the statistical results are bound to be unable to keep up with the development of actual spoken English, and some individual phenomena have to be ignored. Secondly, the analysis of the causes of the differences between English and Chinese in this paper is only based on these two languages, and there is no evidence of other languages, so it still lacks the universal significance of typology. Third, the factors that lead to language differences are complex and difficult to separate. This paper focuses on the causes of the basic attributes of language, and makes no specific analysis of the cognitive and cultural background factors. Further research is needed to prove which factor is the most decisive for a given difference. It is necessary to pay attention to some points in the translation of animal nouns in order to help the use and communication of animal nouns in English and improve our English expression and translation ability.

Learning English on the basis of understanding the western cultural background can make people feel that learning English is a kind of fun, thus greatly stimulating the enthusiasm and enthusiasm of learning English. Of course, the phenomenon of animal metaphor in English is much more than that. We still need to accumulate and summarize in our daily work and study to truly understand the British and American culture. Only by mastering the cultural connotation of the language, can we learn authentic, standard and pure English, and can we communicate effectively with foreigners.

Funding

This article is not supported by any foundation.

Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

References

- [1] Scott, P. J. (2017). "Illness as a Burden in Anglo-Saxon England", Neophilologus, 101(5),pp.603–620. https://doi.org/10.1007/s11061-017-9527-7
- [2] Van Rij, V.(2018). "The Protagonist as a Learner, and the Author as a Teacher in Jack Lasenby's Novel, The Lake", Child Lit Educ, 49(11),pp.264–281. https://doi.org/10.1007/s10583-016-9298-y
- [3] Mutua, F., Onono, J., Bruck, A.(2019). "An Overview of Animal Health and Communication Constraints in Smallholder Farming Systems of Machakos County, Kenya", Trop Anim Health Prod, 51(8),pp.279–287. https://doi.org/10.1007/s11250-018-1682-8
- [4] Süner, A(2019). "Air, Bubble and the Horrid Image: The Representation of Fear and the Supernatural in Macbeth", Neophilologus, 103(3),pp.591–605. https://doi.org/10.1007/s11061-019-09604-x
- [5] Fedurek, P., Zuberbühler, K. & Semple, S.(2017). "Trade-offs in the Production of Animal Vocal Sequences: Insights from the Structure of Wild Chimpanzee Pant Hoots", Front Zool, 14(11),pp.50. https://doi.org/10.1186/s12983-017-0235-8
- [6] Covelo, R.(2017). "The Genetic Fluke in Zadie Smith and Philip Roth: Order, Chaos and Utopia", Neophilologus, 101(8),pp.621–637. https://doi.org/10.1007/s11061-017-9534-8
- [7] Bonardi, P.(2019). "Manifest Validity and beyond: An Inquiry into the Nature of Coordination and the Identity of Guises and Propositional-Attitude States", Linguist and Philos, 42(3),pp.475–515. https://doi.org/10.1007/s10988-018-9245-z
- [8] Naydenova, N.(2017). "Let the Little Children Come to Me: (Anti-)Religious Films for Young Spectators of the Soviet and Post-Soviet Period", Child Lit Educ, 48(5),pp.308–325. https://doi.org/10.1007/s10583-016-9284-4
- [9] Pretorius, L., Marais, L. & Berg, A.(2017). "A GF Miniature Resource Grammar for Tswana: Modelling the Proper Verb", Lang Resources & Evaluation, 51(2),pp.159–189. https://doi.org/10.1007/s10579-016-9341-z
- [10] Bilimoria, P.(2018). "Animal Justice and Moral Mendacity", SOPHIA, 57(5), pp.53–67. https://doi.org/10.1007/s11841-018-0652-y
- [11] Mesquita, J.R., Istrate, C., Santos-Ferreira, N.L.(2019). "Short Communication: Detection and Molecular Characterization of Hepatitis E Virus in Domestic Animals of São Tomé and Príncipe", Trop Anim Health Prod, 51(9),pp.481–485. https://doi.org/10.1007/s11250-018-1700-x
- [12] Fröhlich, M., Hobaiter, C.(2018). "The Development of Gestural Communication in Great Apes", Behav Ecol Sociobiol, 72(10),pp.194. https://doi.org/10.1007/s00265-018-2619-y
- [13] Meenu Gupta, Prince Kumar, Robust Neural Language Translation Model Formulation using Seq2seq approach, Fusion: Practice and Applications, 2021, Vol. 5, No. 2, pp: 61-67 https://doi.org/10.54216/FPA.050203
- [14] Mohsin Khalid, Young Bae Jun, Mohammad Mohseni Takallo, Neha Andaleeb Khalid, Magnification of MBJ-Neutrosophic Translation on G-Algerbra, International Journal of Neutrosophic Science, 2020, Vol. 2, No. 1, pp: 27-37 https://doi.org/10.54216/IJNS.020105