

# *Animal Metaphors in Economic Discourse*

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**Abstract:** The purpose of this article is to unearth the deep cultural roots of conceptual metaphors in economic discourse. This article uses the conceptual metaphor of Lakoff and Johnson as the theoretical framework. The corpus is selected from the economic reports in the foreign economic journal "The Economist". The author selects a large number of expressions that are closely related to economic discourse. Combined, it will help us to broaden the field of metaphor research. Although metaphor has been studied from different angles, its research in economic discourse is not sufficient. This study conducted a detailed semantic and cognitive analysis of the selected corpus in an attempt to discover the cognitive mechanism of metaphor in economic discourse. Experiments show that four common animal metaphors are summarized: "Companies are animals" occupying 40% of metaphors, "Investors are animals" occupying 20% of metaphors, "Markets are animals" occupying 10% of metaphors, and "Products "Animals" account for 20% of metaphors. In the analysis of the four types of conceptual metaphors, the proportion of orientation metaphors accounts for 31%, the proportion of ontological metaphors accounts for 13%, and the proportion of structural metaphors accounts for 56%, which indicates that structural metaphors occupy a considerable number and absolute advantages.

## 1. Introduction

The study of metaphor has a long history, and it has attracted the attention of linguists for more than 2000 years. Traditionally, metaphor is considered as a rhetorical device used to decorate language. With the continuous development of linguistics, research in recent decades has fully proved the cognitive nature of metaphor. It is not only a rhetorical means, but also a basic way for humans to recognize things[1]. As a cognitive method, metaphor has national commonality and national personality in different languages. People with different cultural backgrounds will have some of the same cultural accumulation. These same cultural accumulations are reflected in

language as common cultural semantics[2-3]. Similar metaphors are produced on the basis of common cultural semantics. However, the languages of various nationalities are loaded with a lot of unique content on the way of thinking, national customs, national traditional culture and historical literature. Therefore, the unique cognitive style of each nation will affect its own language, and metaphor in language is one of the most obvious linguistic facts that show this effect[4]. In order to remove obstacles and avoid cultural conflicts in cross-cultural communication, we need to study metaphors in foreign languages more deeply[5].

Focusing on the definition and nature of idioms, many scholars have conducted in-depth and systematic research and discussion[6]. Muelas-Gil pointed out that idioms are stereotyped phrases or short phrases that people have used verbally for many years, some from books and some from spoken language[7]. Cibulskienė, J pointed out in "Common Sense of Chinese Rhetoric" that idioms are stereotyped phrases that gradually develop in the course of language development. It is neither a word nor a sentence, and it is a fixed phrase that cannot be arbitrarily changed [8]. Foreign scholars Said, E. have described the phenomenon of animal metaphors, but "to date, the overall number of studies on animal metaphors in foreign countries is not large, and the existing researches are mostly in the field of anthropology or literary investigation" [9]. Domestic research on animal metaphors can be divided into three types in general: focusing on the field of literary investigation to explore the metaphorical phenomenon of common animal words from a cross-cultural perspective; analyzing the extended meaning of some or individual animal words from the perspective of conceptual metaphors; and Cognitive exploration of animal metaphors in certain types of words, especially the comparative study of English and Chinese based on plant name corpora, has not been described [10-11]. In this study, through the investigation of the plant name corpus, a comparative analysis of the similarities and differences between animal metaphors in English and Chinese plant names was made, and a cognitive explanation was made for the "animal-to-plant" naming machine.

The languages of all nations in the world have their own fixed language. Idioms are the most vivid and interesting part of the fixed language of modern Chinese. In the rich Chinese treasure house, it is unique and brilliant. The crystallization of culture [12]. The close relationship between people and animals as the "spirit of all things" is even more prominent in language and culture. From the ancient totem to the zodiac sign, the animal world and the material, spiritual and cultural life of the nation have forged an indissoluble bond [13]. Many rich words composed of animal names have become a colorful part of modern Chinese vocabulary [14]. Systematically analyze and study animal idioms, and analyze the linguistic phenomena of animal idioms from a new academic perspective, cognitive linguistics, to obtain new inspiration and new harvests, in order to gain insight into the characteristics of human thinking, so as to help language learning, use and understanding This is the main purpose of this article.

The main content of the thesis is as follows: This article uses the well-known British magazine "The Economist" as the corpus to divide metaphors into three categories, namely, metaphors of orientation, ontology and structure. The theoretical framework of the research is introduced in detail, including image schemas and structural metaphors. Then analyze the metaphor of economic discourse, which is based on image schema (container and vertical schema) and structural metaphor, including biological metaphor (human, animal and plant), war metaphor, game metaphor, journey metaphor and liquid metaphor, and Provide examples to help explain the discourse of economics. Finally, metaphor is incorporated into the reading comprehension teaching of economics to reconstruct the knowledge of economics[15]. Economics provides an understanding of the scaffolding and attempts to discover how the economic report's assessment of the current state of

the Chinese economy and its future development attitude expressed in *The Economist*, and how these biased and subjective ideological reports have shaped what Image of China. Through the screening, classification, induction, and analysis of the metaphors in the text, the author finds that from the reports related to the Chinese economy in *The Economist*, the image of China is not positive in the eyes of *The Economist*. "China threat theory" and "China collapse theory" remain the main tone.

## 2. Proposed Method

### 2.1. Introduction to Key Metaphor Analysis

Charteris-Black proposed Critical Metaphor Analysis (CMA) after observing corpus analysis methods of pragmatism, cognitive linguistics, critical discourse analysis, and metaphor research. This approach is a complete combination of CDA and conceptual metaphors. Because the persuasive function of metaphors stimulates strong emotional responses, it is necessary to study metaphors from the perspective of ideological function. According to Charteris-Black's research, CMA's methodology is used to identify subconscious intentions and ideologies, which are the basis of language and the relationship between language, thought, and social environment. Charteris-Black uses Fairclough's "three-dimensional model" as a reference and develops three phases of CMA for metaphor analysis: metaphor recognition at the text level, metaphor description at the discourse level, and metaphor interpretation at the social context level. The hidden intentions of language users are the research focus of key metaphor analysis, mainly through metaphor recognition, interpretation of conceptual metaphors and conceptual keys, and explanation of possible motivations. Analysis of metaphors will reveal how language users associate simple ideas as source domains with abstract concepts as target domains. CDA is a metaphorical analysis method that combines corpus linguistics with critical discourse analysis, pragmatics, and cognitive linguistics. To understand the definition of CDA, the following keywords should be clearly distinguished: criticism, metaphor, and thought.

In critical discourse analysis, critics are critical of social events in order to reveal hidden consciousness that is considered a form of language strategy. At the same time, according to Fowler, people acknowledge that there are flaws and distortions in society, so the purpose of criticism is to reveal the hidden distortions in the reporting of social events. Criticism is considered as a way to reveal or even solve social problems, in which case language users can make clear social events. Metaphor, as a rhetorical device, is the phenomenon of applying words or phrases from one domain to another. Should not be. According to Cameron and Low, the difficulty in defining metaphor lies in the problem of better understanding metaphor as a cognitive phenomenon, that is, the way we understand things, or metaphor as a linguistic phenomenon, that is, we A way of expressing things. When the source domain is mapped to the target domain, semantic tension occurs. According to Lakoff and Johnson, metaphors can be divided into two categories: conventional metaphors are also called dead metaphors, and novel metaphors are also called creative metaphors. Death metaphor refers to the previous metaphor, which has lost its metaphoric status and has become text. As time goes by, its metaphorical meaning becomes so familiar that its literal meaning is forgotten or ignored, which is a metaphor. For example, "keep your nose uncovered", "open your eyes wide" and "drop your ears", these English metaphors belong to the traditional metaphor of verbs and body parts. Traditional metaphors are often used in daily life. The metaphor "Life is a journey" is also a traditional metaphor. A novel metaphor, also called creative metaphor, is a metaphor for thinking about things in new ways, such as "life is a game of chess." It is difficult to determine the

underlying ideology behind traditional metaphors. This article focuses on traditional metaphors. The reason why conventional metaphors become the main interest of critical analysis is that the metaphorical meaning between the source and target domains is secretive and secretive, and its semantic tension gradually disappears.

Ideology is an important term in the analysis of key metaphors. It is seen as a set of social symbols and processes and the transmission of social forms. This is a perception of the world, which provides the basis for our belief system. This is also a potential criterion that determines how people behave. According to Van Dijk, ideology is a specific form of social cognition shared by social groups, and it controls social groups. It represents the basic characteristics of a social group, including its values, social status, goals and resources. In order to study the discourse metaphor, a theoretical framework metaphor analysis (CMA) is proposed. It aims to reveal the ideology behind language users, as well as linguistic, pragmatic, and cognitive perspectives. In this way, metaphors are used by humans to understand the world. Therefore, metaphor is an important way to form and form. Influence human attitudes, beliefs and values. In this case, the basic intentions of language users will be studied through a critical analysis of metaphors. The corpus, as well as the nature of the particular ideology, will be determined. It is pointed out that metaphor contains a different set of roles. Semantic roles create new meanings for words, and pragmatic roles are designed to prove that evaluating cognitive roles can help us understand by analogy. These roles need to be closely watched because they are interconnected, suggesting the complexity of metaphor. Critical metaphor analysis is based on corpus research. When empirical data requires the use of traditional metaphors, especially corpora are advantageous. CDA is particularly important and useful when calculating dictionaries for special ESP domains, because it is easier to obtain specific domains in a language corpus than specific domains in ordinary languages. It is also through careful selection of corpus methods that constructive research equivalent corpora for both languages will be completed in order to control the research. The persuasive function of metaphor can make one interpretation take precedence over another is to elicit an emotional response. Therefore, the key metaphor analysis is a way to reveal hidden attitudes, beliefs, ideologies and values. This article provides the similarities and differences between the hidden targets of two corpora in similar contexts. The key metaphor analysis is divided into three stages, namely metaphor recognition, metaphor interpretation and metaphor interpretation.

## 2.2. The economy is An Animal

The body metaphor is mainly divided into three parts: "economy is human", "economy is animal" and "economy is plant". In contrast, the use of the "economic is an animal" concept metaphor is not as frequent as the other two, but it also occupies a very important position. In the mapping from "animal" in the original domain to "economy" in the destination domain, economy is given the main characteristics of animals.

### (1) Out of control of animals and animals

Economic phenomena such as inflation, debt, or the economy itself have acquired the characteristics of animals through metaphorical mapping. Conceptual metaphors such as "runaway" and "bolt" in English and "shed" in Chinese are mapped into economic discourses, respectively, suggesting that economic problems or the entire economy itself is out of control. In primitive society, humans learned to hunt, and over time, their technology has matured and food has surplus. If they catch them, they will raise them in a circle. However, the beasts are not easy to tame: they do not follow their master's instructions, they sometimes run away and even attack humans, causing

harm to humans. If the economy is out of control, it will also harm the public interest. During the financial crisis, the entire economy was completely out of control: the company went bankrupt, employees lost their jobs, and the rich in the past became poor overnight. Many people were overwhelmed to repay their loans, and the suicide rate rose sharply.

(2) Economic issues and dangers from animals

Both domestic animals and wild animals may harm human beings, and this concept is also mapped to the economic field. When the economy is out of normal trajectory, it will cause harm to society like animals. Economic issues such as inflation, extreme inflation, and monetary tightening have been described as fierce beasts such as tigers and lions, plundering human wealth with "sharp claws." In addition to huge beasts, the behavior of small animals may also endanger humans. For example, poisonous snakes are also used to describe economic conditions such as deflation.

The U.S. capital market is now desperately rushing up, faster than other Asian countries. Perhaps Indians who are good at training cobras are born with a temperament that is entertaining with poisons. They can easily use the sound of flutes to bring the economic poisonous snake tame. This kind of metaphor concept is very common in English, such as "eatenup", "dragon", "jaws" and "uglyhead". For example, in the Western culture, "dragon" is a symbol of evil, so mapping this meaning to economic discourse means danger. In Chinese economic discourses, there are relatively few such metaphors, and there are also differences in metaphors. Poisonous snakes are often used in Chinese to represent economic dangers. Hundreds of people and livestock are bitten by poisonous snakes every year. The general symptoms are mild, and they can cause pain, sweating, and burns at the bite; however, sometimes the venom produced by snakes can endanger them. Life, especially children, and many adults may endure long-term suffering or even paralysis. Poisonous snakes pose a threat to humans just as the dangers in the economy affect the economy.

(3) Control of economy and control of animals

Zoo breeders have extensive experience in feeding animals, but they have to be professionally trained before taming animals, especially fierce ones. In the economic discourse, the economy sometimes gets out of control, so measures need to be taken to deal with it, otherwise the economic development will deviate from the right track. The following are corpora collected from English and Chinese texts. Prairie horse riding is common for locals, and people have tamed horses for a long time. Therefore, horses have become an indispensable means of transportation in human life. However, learning to ride a horse is not easy. Horses may be reluctant to let people ride on their backs, and will do their best to get rid of riding and get free. Snakes bite and produce venom, which is harder to tame in comparison. Therefore, it is necessary to be more careful when taming snakes, and the technical requirements are also higher. In English, there are many metaphorical expressions about the control of the economy. For example, the economy is likened to a wild horse. When people control the economy to prevent it from worsening, it is like taming a horse. The related expressions are "rein in", "curb", "grip", "ride", and "bridle". For other animals, people's domestication methods are different. Finally, animals are treated by both hard and soft methods, and let them act according to instructions. Related expressions are relatively rare in Chinese.

### 2.3. Metaphors in Economic Discourse

Space experience is the most common understanding of human beings. Therefore, spatial metaphors are mainly based on recurring image patterns entering our physical experience. Humans are walking upright, with most mammals on their heads and heads lying down to sleep and waking up. Ordinary people do all their daily work standing or sitting, and only the seriously ill are forced

to lie in bed. Economically, "sag" usually indicates a recession, while "up" refers to better economic development. Therefore, we use spatial metaphors to understand these concepts. Spatial metaphor is widely used to describe economic movements and activities. Economic space provides overwhelming support for the following activities: The existence of spatial metaphors in the economic field, regardless of their status, we use "upper" space, "lower" space or broad expansion to economic phenomena is basically a very abstract concept But metaphors can make abstract concepts concrete throughout the space. For the description of economic activities, such as capital, price, value, quality, and quantity of goods, the concepts of "up" and "down" are extremely important. It shows changes in quality and quantity. Spatial location. Regarding abstract economic development and economic relations as objects, the description of spatial location can be a specific visualization.

Economy and human society are inseparable, and it is a huge system with rich content. Economic discourse mainly describes the inherent laws in the process of human social and economic activities, which often include many abstract, unfamiliar and obscure economic concepts and economic phenomena. As an important field of metaphor research in cognitive linguistics, metaphor research in economics and business discourse mainly describes conceptual metaphors, linguistic metaphorical expressions, and the ideology behind conceptual metaphors. For example, with regard to what is economics, people often use economics as a metaphor to conceptualize economics as patients. Here, health is the source domain and economy is the target domain. By activating the typical characteristics of the source domain, the abstract economic definition can be understood and recognized, thereby reducing its complexity. It is precisely because of this way of thinking that there are conventional expressions of economic metaphors: economic recovery, structural adjustment in a painful period, and healthy economic development. By conceptualizing the economy as a patient, the metaphor user intends to imply that the economy is a passive entity whose condition is affected by correct decisions. This cognitive approach often turns metaphor users into doctors dealing with financial problems.

### 3. Experiments

#### 3.1. Experimental Data Set

Metaphor is ubiquitous in economic discourse, so students will definitely encounter some metaphorical expressions during the learning process. Understanding the words well is crucial to them. To this end, I first conduct a qualitative study to find out which terms in economic discourse are metaphorical terms, structured in a conceptual system, and expressions are used to describe those that are used in the daily life of economics that naturally correspond to those used in my Data for research comes from economics / business books such as English or international investment, practical English, or international business, modern business relations English, Manasian, pain and crush, history of financial crisis, economics, magazines, other dissertation scholars And internet information. After reading these materials in English or Chinese, it was found that metaphorical forms described economic phenomena that prevailed. Economic sphere. These data are unified for word frequency analysis and word meaning analysis statistics.

#### 3.2. Experimental Environment

For this experiment, after the secondary processing of the collected large data is completed, the collected data is imported into the SPSS 21 statistical product and service solution software to



analyze the experimental data. The computer used this time is configured as Microsoft Win 10. The latest operating system with 512GB of solid state memory can ensure continuous reading of large amounts of data, while ensuring that the computer can easily perform calculations.

### 3.3. Experimental Steps

The first step: pre-processing the collected data, and excluding some irrelevant data, to obtain the 28 core content we need.

Step 2: After collecting the data we need, we need to import the data into the software for execution.

Step 3: For the decision tree method used this time, a decision tree model needs to be constructed.

Step 4: After completing the above operations, we can process and analyze the data, draw related experimental tables and images, and finally reach a conclusion.◦

## 4. Discussion

### 4.1. Experimental Results and Comparison of Conceptual Metaphor Analysis in Economists

(1) In recent years, China's economy seems to be weakening, which has caused China to collapse once again in some living space. Is it a reasonable judgement or manipulation of rumors? After a comprehensive analysis of the 19 articles, some aspects of the economists pay special attention to issues related to the Chinese economy, including debt, housing, investment, bond and stock markets, international trade and RMB as shown in Table 1. As shown.

*Table 1. Comparison of tendencies of different articles*

	Economy	Debt	Investment	Housing	Currency	Market
Numbers of article	6	3	4	3	2	1
Weights	0.2	0.15	0.2	0.4	0.1	0.5

As shown in Figure 1, there are six articles on China's macro economy. Debt and investment have also received high returns and are being watched by economists. At the same time, housing, RMB, stock market as well as trade. As a carrier of ideology, metaphor runs through all these articles. With the help of metaphors, readers can accept the ideas in these articles as well as the ideology and subjective attitude expressed in these articles. These metaphors are used because the authors of these reports want to emphasize what they want to express while hiding other things they don't want readers to know. The analysis will be from the perspective of the CDA. Set the order of each aspect according to the quantity of each item in the discussion.

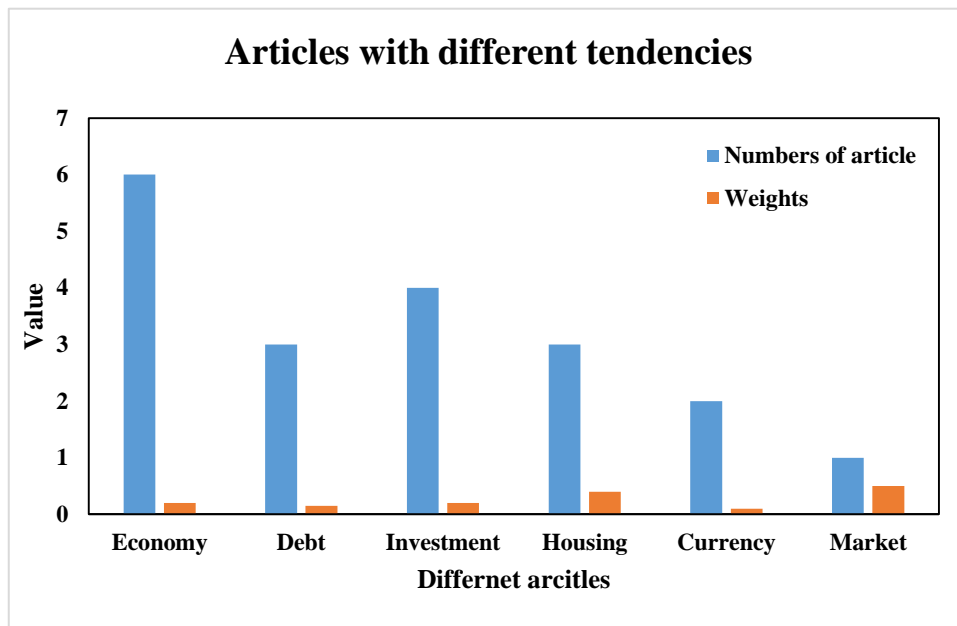


Figure 1. Comparison of different tendencies and weights

(2) Orientation metaphor is a matter of spatial direction, such as up and down, front and back, front and back, depth, central periphery. Like all other types of metaphors, each directional metaphor has its foundation in our physical and cultural experience. For example, in economic articles, the most common targeted metaphor is "more prepared." Reduce failures. It can be explained based on our physical experience that if you add more substances or physical objects to the container or heap, the height will rise as shown in Figure 2.

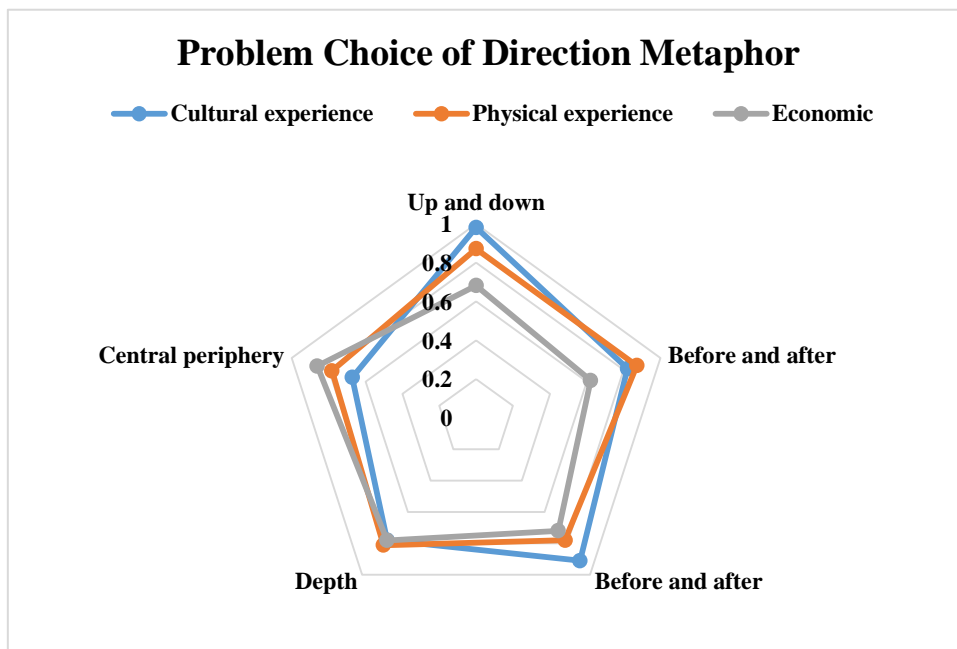


Figure 2. Problem selection method of direction metaphor



#### 4.2. Comparison and Analysis of Animal Word Types and Quantities in Economics

(1)The metaphor of the concept that an enterprise's executives and investors are animals is derived from human's perception of the source domain of animal's biological characteristics or distinctive characteristics. First, this mapping relationship is the structural correspondence between the animal source domain and the human target domain. Second, this conceptual metaphor stems from our experience of humans and animals. Such metaphorical expressions are common in financial English, such as fatcats, hawk, doves, pig, lemming, ostrich, sheep, shark refers to corporate executives who earn high salaries and bonuses, economic policy consultants who negatively view inflation and its social impact, economic policy consultants who advocate a sound monetary policy, and greedy investments that forget the original investment strategy Investors who follow the crowd investment, investors who ignore important information affecting the market, investors who lack key trading strategies, are hostile to the management of the target company and are inclined to acquire.

Table 2. Metaphors represented by different animals

Type of Metaphors	Number of Items	Frequency
Orientational Metaphors	50	31%
Ontological Metaphors	20	13%
Structural Metaphors	90	56%

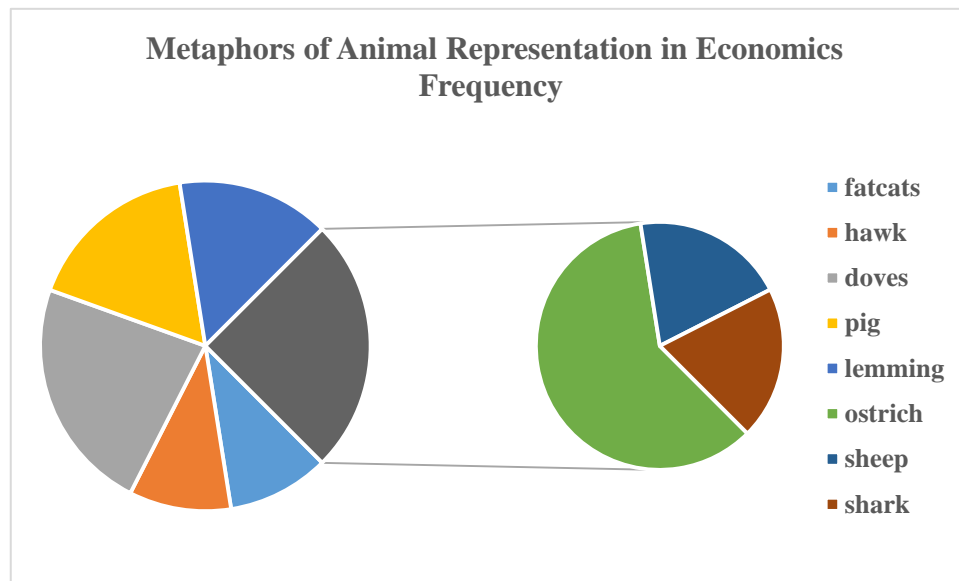


Figure 3. Types of Metaphors Represented by Animals in Economics

This type of conceptual metaphor describes the remarkable biological characteristics of these animals, such as the laziness and vanity of cats, the keen eyesight of eagles, the docileness of pigeons, the excessively raised farm pigs, the periodic large-scale migration of lemmings, and occasional drowning and death. With their heads buried in the ground, the sheep depended on the shepherds, and the sharks greedily projected on the corresponding corporate executives and investors. Economists use the above industry terminology to distinguish different types of investors more clearly to simplify the intricate and difficult to understand trading practices in economic

activities as shown in Figure 4.

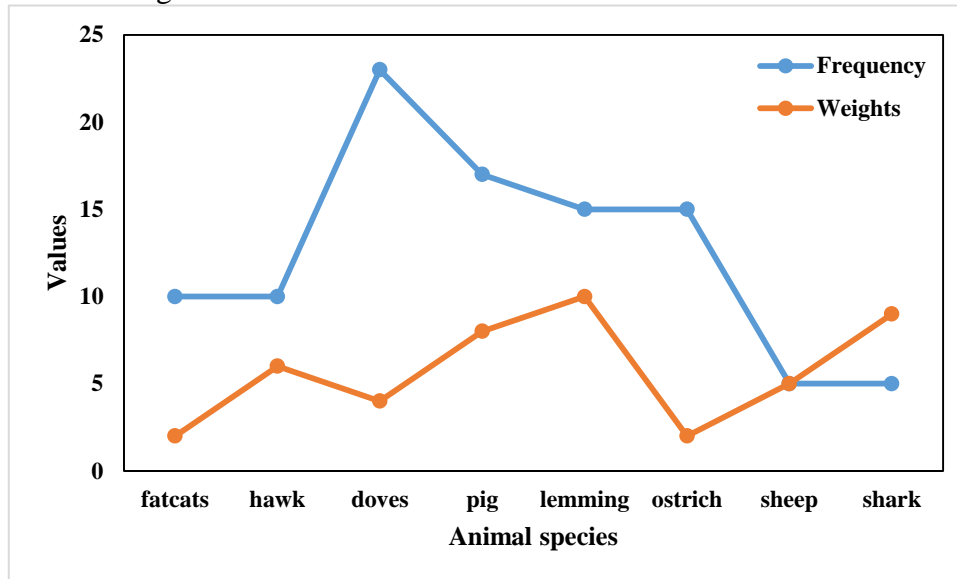


Figure 4. Economists' bias towards animal metaphors

## 5. Conclusion

This article analyzes a large number of economic terms and concepts in magazines and government work reports, financial dictionaries, and business English business dictionaries, and finds four common animal concept metaphors: "businesses are animals", "investors are animals", and "products are Animals, "" Products are animals. " Animal concept metaphors are derived from human understanding of animal shapes and behavioral characteristics (shape, size, speed, sensitivity, foraging, attack, temperament); the meaning of animals in specific cultures (myths, legends, traditions, religions) 3) The relationship between supply and production of animals in the breeding process.

In these articles, each conceptual metaphor is fully utilized to express its attitude towards the economy. Directional metaphors are mainly used to describe numbers. They believe that China's debt is so huge that it shows that China is in a depression. Rising housing prices and the stock market herald a "bubble". Ontology metaphors provide them with an opportunity to describe some abstract concepts in a more direct way so that readers can easily understand it. In this analogy, our debt becomes a real object with weight and size. Our market is humane, so it feels crazy and painful. Structural metaphors make it easier to accept the point of view of an article. As long as the source domain of this metaphor is accepted, the ideology behind it is also accepted. In this way, China's debt problem has become an insurmountable divide. In class society, people with low status always bend down or bow their heads when they meet people with high status. At the banquet, high-ranking guests usually sit high, while lower-ranking people sit low. In a company's office, senior positions are usually higher than lower positions. People with higher administrative levels always win elections or elections. competition. These cultural phenomena are the cognitive basis of the above metaphors.

This article only attempts to explore the use of metaphors in the economic news reports of inflation in China and Britain through key metaphor analysis. It should be acknowledged that metaphors in other economic fields require further study. Forming and consolidating the

metaphorical function of ideology is another area that requires further research. The schedule for each category requires more explanation. To find out exactly how these metaphorical expressions work in the economy, more details should be discussed and debated. Moreover, the interpretation and interpretation of metaphors requires some expertise in inflation and economics.

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### 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] Ertner, D. E., & Ulyanova, O. B. (2019) "Metaphorical Codes in Atructuring nNational Economic Discourse", *Journal of Multicultural Discourses*, 14(3), pp. 258-271. <https://doi.org/10.1080/17447143.2019.1672697>
- [2] Negro, I. (2016) "The Human Being as the Target of Crisis Metaphors in English, Spanish and French", *Metaphor and the Social World*, 6(2), pp. 177-204. <https://doi.org/10.1075/msw.6.2.01neg>
- [3] Ahmed A. Elngar, Mohamed Gamal, Amar Fathy, Basma Moustafa, Omar Mahmoud, Mohamed Shaban, *Plagiarism Detection Algorithm Model Based on NLP Technology*, *Journal of Cybersecurity and Information Management*, 2021, Vol. 5, No.1, pp: 43-61 (Doi: <https://doi.org/10.54216/JCIM.050104>)
- [4] Taylor, C. (2020) "Representing the Windrush Generation: Metaphor in Discourses then and Now", *Critical Discourse Studies*, 17(1), pp. 1-21. <https://doi.org/10.1080/17405904.2018.1554535>
- [5] Baider, F., & Kopytowska, M. (2017) "Conceptualising the Other: Online Discourses on the Current Refugee Crisis in Cyprus and in Poland", *Lodz Papers in Pragmatics*, 13(2), pp. 203-233. <https://doi.org/10.1515/lpp-2017-0011>
- [6] Nading, A. M., & Fisher, J. (2018) "Zopilotes, Alacranes, y Hormigas (vultures, scorpions, and ants): Animal Metaphors as Organizational Politics in a Nicaraguan Garbage Crisis", *Antipode*, 50(4), pp. 997-1015. <https://doi.org/10.1111/anti.12376>
- [7] Muelas-Gil, M. (2019) "Visual Metaphors in Economic Discourse. An Analysis of the Interaction of Conventional and Novel visual Metaphors in *The Economist*", *Current Approaches to Metaphor Analysis in Discourse*, 39, pp. 347. <https://doi.org/10.1515/9783110629460-016>
- [8] Cibulskienė, J. (2019) "Communicating attitudes through metaphor: A Case Study of Euro Adoption", *Cognitive Linguistic Studies*, 6(1), pp. 130-157. <https://doi.org/10.1075/cogls.00033.cib>
- [9] Said, E., & Douglass, A. (2019) "The Political Lives of Animals in Victorian Empire", *The*

- Political Lives of Victorian Animals: Liberal Creatures in Literature and Culture*, 116, pp. 198. <https://doi.org/10.1017/9781108632096.007>
- [10] Cai, D., & Deignan, A. (2019) "Metaphors and Evaluation in Popular Economic Discourse on Trade Wars", *Current approaches to metaphor analysis in discourse*, 39, pp. 57. <https://doi.org/10.1515/9783110629460-004>
- [11] Tavera Romero CA, Castro DF, Ortiz JH, Khalaf OI, Vargas MA. Synergy between Circular Economy and Industry 4.0: A Literature Review. *Sustainability*. 2021; 13(8): 4331. <https://doi.org/10.3390/su13084331> <https://doi.org/10.3390/su13084331>
- [12] Reinert, H., & Reinert, E. S. (2019) "IN ECONOMICS: NIETZSCHE, SOMBART, SCHUMPETER", *The Visionary Realism of German Economics: From the Thirty Years' War to the Cold War*, pp. 385. <https://doi.org/10.2307/j.ctvc5979.15>
- [13] Hühn, M. P. (2019) "Adam Smith's Philosophy of Science: Economics as Moral Imagination", *Journal of Business Ethics*, 155(1), pp. 1-15. <https://doi.org/10.1007/s10551-017-3548-9>
- [14] Herrmann-Pillath, C. (2020) "The Art of co-creation: An Intervention in the Philosophy of Ecological economics", *Ecological Economics*, 169, pp. 106526. <https://doi.org/10.1016/j.ecolecon.2019.106526>
- [15] Man, N., Wang, K., & Liu, L. (2021). Using Computer Cognitive Atlas to Improve Students' Divergent Thinking Ability. *Journal of Organizational and End User Computing (JOEUC)*, 33(6), 1-16. <http://doi.org/10.4018/JOEUC.20211101.0a25>