

Transitivity Analysis of the Energy in China's New Era

SHAN Ting, WANG Yu

School of Humanities, Tianjin University of Finance and Economics, Tianjin 300222, China

At present, with the steady development of the global economy, more and more countries begin to pay attention to the impact of ecological environment on economic development and human society, so the ecological environment has become a global issue that cannot be ignored in today's era. Therefore, from the perspective of the ecological philosophy of Diversity & Harmony as well as Interaction & Co-existence, this paper will conduct ecological discourse analysis on the *Energy in China's New Era* based on the transitivity system of systemic-functional grammar, and use the Corpus analysis software UAM Corpus Tool 3.3x to label and make statistics on the transitivity system, aiming to explore the distribution characteristics of the transitivity system in this white paper. Through the transitivity analysis of the white paper, this study helps readers to have a deeper understanding of the positive significance contained in the white paper. To a certain extent, it enables readers at home and abroad to understand China's stance on energy issues and the positive image of China in energy ecology. It also awakes readers' awareness of environmental protection and acquires good habits of resource conservation to be in harmony between human and nature for sustainable development.

Keywords: transitivity, Ecological discourse analysis, Energy in China's new era

Introduction

In the past hundreds of years, human beings have been developing economy in order to pursue a better and more advanced life. However, in recent years, more and more countries, groups and individuals have begun to pay attention to the negative impact of development on other aspects. Among them, ecological issues undoubtedly stand at the forefront of the discussion, and based on the background of people's increasing attention to ecological issues, many interdisciplinary disciplines related to ecological fields have emerged in all walks of life. Among them, ecolinguistics, which focuses on the study of language and ecological issues, has gradually entered the field of vision of linguists. The main research method of ecolinguistics is ecological discourse analysis. By exploring the surface linguistic features, ecological discourse analysis explains the deep ecological thoughts behind language, that is, how discourse influences and destroys the relationship between people and the natural ecology through language. There are three general models of ecolinguistics: Hauge's model (Metaphorical model), Halliday's model (Non-metaphorical model) and cognitive model. At present, most studies on ecolinguistics focus on news, advertising, slogans and other discourses, and pay more attention to destructive ecological discourses, which shows that the promotion of beneficial ecological discourses in

SHAN Ting, Postgraduate, School of Humanities, Tianjin University of Finance and Economics, Tianjin, China.
WANG Yu, Associate Professor, School of Humanities, Tianjin University of Finance and Economics, Tianjin, China.

ecological discourses is rarely involved. Therefore, this study aims to promote beneficial ecological discourse, adopt Halliday model from the perspective of systemic functional linguistics transitivity, and select the *Energy in China's New Era* as the corpus to analyze ecological discourse, and explore the transitivity characteristics of ecological beneficial discourse.

Literature Review

Ecological Discourse Analysis

Ecological discourse analysis is the main approach of ecolinguistic research from the socio-cultural perspective (Lei, 2020). The view of ecolinguistics is generally regarded as the existing linguistic ecology, which gradually evolved into ecolinguistics later on. As Huang Guowen (2016) said, according to Eliasson (2015), British scholar John Trim (1959) used the term *linguistic ecology* when discussing language variation, but this view did not arouse much response due to the influence of language society at that time. However, it is believed that there are two major models of ecolinguistic research, namely Hauge's model and Halliday's model. The non-metaphorical viewpoint represented by Halliday holds that human beings themselves are an indispensable part of the ecosystem of nature, and what human beings do and think is determined by the man-man relations and between man-nature relations, and human beings cannot survive without the natural environment. The metaphorical view represented by Hauge advocates the analogy between the relationship between language and its environment and the relationship between biology and the natural environment. Ecological discourse analysis is the main research method of ecolinguistics. Ecological discourse analysis mainly refers to the analysis of the ecological orientation of various types of discourse based on specific ecological philosophical views and linguistic theories. Its main purpose is to explore the relationship and interaction between language and ecology, and reveal the influence of language on various ecological relations. Ecological discourse analysis of different scholars will adopt different analytical paths, mainly including critical discourse analysis, positive discourse analysis and multimodal discourse analysis. Stibbe divides ecological discourse into three categories: (1) beneficial discourse; (2) destructive discourse; (3) ambivalent discourse. It is also pointed out that the judgment of which class a particular discourse belongs to is mainly based on the eco-philosophy view observed by the analyst. The purpose of ecological discourse analysis is to advocate and encourage beneficial discourse, criticize and resist destructive discourse, and actively promote the transformation of neutral discourse into beneficial discourse.

Transitivity

Halliday proposed three metafunctions of language, namely conceptual function, interpersonal function and textual function. In the conceptual function, language is used to convey new information, including content unknown to the listener; Interpersonal function mainly embodies all the uses of language in expressing social and personal relationships; Discourse function refers to the mechanism by which language can turn any spoken or written passage into a coherent text that distinguishes it from a random string of sentences. Among them, the transitive system can best embody the conceptual function of language. Its role is to divide what human beings do, see and think in the real world into several types of processes. In essence, it summarizes experience of human beings in the world with language grammar, and its center is the process verb and the participants in the process. In terms of process, Halliday believes that according to human experience, transitive systems can be divided into

six different processes: material process, mental process, relational process, behavioral process, verbal process, and existential process. Therefore, in order to explore the transitivity characteristics of *Energy in China's New Era*, this paper will also use UAM for statistics and analysis of these six processes.

Ecological Philosophy of Diversity & Harmony, Interaction & Co-existence

The concept of ecological philosophy was first proposed by A. Naess in 1973, which provides a reference standard for judging whether the ideology constructed by discourse meets the requirements of sustainable development of ecosystem (Lei, 2020). In recent years, many Chinese scholars have tried to combine ecological concepts in traditional Chinese theories. The ecological philosophy used in this paper is constructed by He Wei and Wei Rong in the study of international ecological discourse by combining traditional Chinese philosophy and diplomatic concepts. *Diversity & harmony* should be reflected in international relations, and the diversity of world civilizations should be respected. Establish the idea of harmonious coexistence of this and that. "Interactive symbiosis" is a dynamic concept, emphasizing that countries communicate and coexist harmoniously with each other, jointly maintain the ecological environment and create a harmonious ecological environment. This ecological philosophy is not only applicable to natural ecosystem, but also reflects the characteristics of social ecosystem operation mechanism.

Many researchers pointed out that the methodology and content of ecological discourse research should be interdisciplinary and diversified, and energy discourse analysis, as an important part of it, also needs interdisciplinary and multi-field collaboration. In previous studies, researchers tend to combine the content of critical discourse analysis with ecological discourse analysis. This paper tries to combine transitivity analysis with it, and regards our state as an subject to respond positively to the energy issue. It also takes the ecological philosophy view with Chinese characteristics as the guidance, integrates Chinese traditional philosophy and diplomatic ideas, and explores the positive role played by China as a responsible major country in energy development and ecological construction.

Research Methods

This paper mainly adopts the method of quantitative and qualitative analysis. First of all, the quantitative part mainly uses the transitivity annotation software UAM Corpus Tool 3.3x to conduct automatic annotation and manual assisted annotation check on the white paper, and then statistics the distribution and proportion of the six transitivity processes in the paper, and analyzes the distribution characteristics. Secondly, the qualitative part mainly analyzes the distribution features and the role of the six processes of transitivity characteristics of the *China Energy White Paper* with examples, and analyzes how China promotes the world's energy and ecological development with its own actions, and what kind of ecological energy outlook China conveys.

Transitivity Process Analysis

Overall Distribution Characteristics of Transitivity

Based on the transitivity labeling software UAM Corpus Tool 3.3, this study conducted automatic labeling, classification and manual verification of six processes in the transitivity system of *the Energy in China's New Era*, and obtained the distribution of each transitivity process in the white paper as shown in Figure 1:

Table 1
General Distribution Characteristics of Transitivity

Process	Material Process	Mental Process	Relational Process	Verbal Process	Behavioral Process	Existential Process	Total
Number	264	6	10	0	0	4	284
Percentage	93%	2.1%	3.5%	0%	0%	1.4%	100%

As can be seen from the table above, there are still significant gaps between the six processes. Among them, the number of material process is 264, accounting for 93%, mainly describing the measures and achievements of China and the energy industry. The number of relationship processes is 10, accounting for 3.5%. Due to the subjectivity of mental process, the number is relatively small, with a total of 6, accounting for 2.1%. Overall, physical processes, relational processes, and mental processes rank in the top three, with a higher proportion in this energy white paper. Because the energy white paper has become an internationally recognized official document representing the position of the government, it is a typical official political discourse that embodies the attitude and stance of a country.

Table 1 shows us that material accounts for the largest proportion, followed by relational, mental, and existential. However, verbal process and behavioral behavior are not present in this selection. In Halliday's definition, behavioral processes are those related to mental and physiological activities. Process verbs such as cry, smile and breath are usually used to describe the speech process, while the speech process is the process of speaking and the process of exchanging meaning, reflecting the speaker's opinions and attitudes. Since *the Energy in China's New Era* is a government article, and the writing process of the article has strong objectivity and formal characteristics, the above two are not distributed in the article. The following analysis will carry out a detailed analysis of the four processes that appear in the article.

Material Processes

In Halliday's theory, material processes are interpreted as action processes, that is, processes of doing, occurring, or changing. Each process has two main actors which mainly bring about the process development, and goal, which mainly refers to the goal of the process.

Example (1)

*Green development of the energy sector has **played** an important role in reducing carbon emissions.*

Example (2)

*China has **sped up** the transformation to low-carbon industry, and implemented green manufacturing on all fronts.*

As the examples above show, this paper makes more use of the material process, the main reason is to communicate to the public China's efforts and actions in energy development and the goals achieved, to show the public what kind of achievements China has made in energy development. And material process can also make this energy paper more objective and formal.

Another reason that material processes occupy a large part of transitive processes is mainly because material process clauses are series clauses that refer to things that have been done or happened. By analyzing the material process, what people do or what they do, readers can understand what specific measures China has taken to

develop renewable resources for green development in the white paper, and better see the ecological outlook conveyed by China and the efforts made for the development of ecological energy in the world.

Relational Process

The relational process, which occupies the second place in this paper. It is a process of being and having which indicates the relationships which named between two entities.

Example (3)

*All entities in Chinese society **are actively engaged** in scientific and technological innovation.*

Example (4)

*Energy **is** a driving force for economic development, and also an important impetus for poverty alleviation.*

We can see that the relational process in this paper is mainly identifying this type. Similar expressions are used to identify the new changes and features of the current energy structure, so that the public can feel the changes more directly and continue to trust and support the government's work.

Mental Process

Mental processes are processes of consciousness. A mental process includes two important participants. The participant that is “‘seeing’, ‘feeling’ or knowing ‘in a mental process clause is referred to as the Sensor. The sensor is narrower than either Actor or Goal: not only must be a ‘thing’ it must be human or endowed with human-like consciousness. The phenomenon refers to the perceived object in the process. The phenomenon is broader than either Actor or Goal: not only it not be human-- it need not even breathing but can be a fact or a report” (Halliday & Webster, 2014).

Example (5)

*China **perseveres** with its fundamental national policy of conserving resources and protecting the environment.*

Example (6)

*Now, in a better business environment and a more viable market, market entities and individuals **enjoy** more convenient services....*

The participants in the first sentence are “China” and the participants in the second sentence are “market entities and individuals”. However, as mentioned above, the participants in the mental processes are the things that people live and have human will, but “China” in the first sentence is clearly not people. In this article, “China” is used as a sensor, which means that the noun is used as a conscious person to represent all the Chinese people. Such expression can better narrow the experience of the people, as if they have actually experienced this change, which makes the communication of the article more accurate.

Existential Process

Existential process indicates that something exists or occurs, and is usually used to state a fact or phenomenon that already exists. And in every process there is a “being.” Words often used in this process include be, exist, arise, etc.

Example (7)

*As of the end of 2019, **there were** 1.2 million electric-vehicle charging stations nationwide, constituting the largest charging network in the world*

Example (8)

***There have been** no incidents or accidents of level 2 or above on the International Nuclear and Radiological Event Scale.*

As mentioned above, the existence process means the existence of phenomena or facts, so the article chooses similar expressions to indicate the existence of energy facilities, which further indicates that China's achievements in energy development are real and effective and exist in fact. This also helps to improve the credibility of the article, better enhance the authority of the government, and enable the public to have a real sense of achievement.

Conclusion

This study combines transitive systems with He's ecological philosophy, examines energy white papers, and explores ecological thought and wisdom. This paper mainly analyzes the language features of the text from the six processes of transitivity, and analyzes how different processes play their roles in the discourse. Through analysis, we can see that in the relationship process of this white paper, the material process accounts for the largest proportion, followed by the relationship process, psychological process and existence process. On the one hand, since the release of the official white paper text is mainly to publicize and publicize the national energy development strategy and achievements, the author must be careful to use a large number of material processes to highlight the implementation results of the specific actions and measures of the government. It is also because popular support and government authority are built through action. In addition, the relationship process and existence process are properly used to clarify the relationships in the process of energy development and the concrete results after the implementation of energy strategy. At the same time, we can also find that discourse is not entirely organized according to material and relational processes, but uses a limited number of mental processes. Therefore, we can conclude that in the process of writing such political texts, psychological processes can also be used to narrow the psychological distance between the state and the public when necessary, and make up for the lack of soft effects in the strong hardening of language.

Secondly, the white paper also mainly introduces the measures and achievements China has taken in the development of renewable energy. The relationship process emphasizes the importance of energy and the status quo of clean energy; the psychological process reflects China's firm belief and confidence in promoting green development, energy conservation and emission reduction; the relationship process shows that China advocates close cooperation among countries to achieve green development and jointly deal with energy crisis; the existential process shows that China actively supports coexistence with the world.

Finally, through the analysis, it is not difficult to see that the publication of the energy white paper follows the ecological philosophy of "diversity and harmony, interaction and symbiosis", reflecting the ecological concept of harmony, cooperation and people-oriented. While adhering to the principle that energy development depends on the people, enabling the people to build a beautiful, clean and livable home, and safeguarding its own energy ecological environment, China is constantly propagating its own ecological energy concept to other

countries, advocating energy cooperation with other countries, sharing responsibilities, and jointly promoting the world's energy and ecological protection cause to a brighter future.

References

- Halliday, M. A. K. (1994). An introduction to functional grammar. London: Arnold/Beijing: Foreign Language Teaching and Research Press.
- He, W., & Liu, J. H. (2020). Diversity and harmony, interaction and co-existence: Construction and development of ecosophy. *Shandong Foreign Languages Teaching Journal*, (1).
- He, W., & Wei, R. (2018). Diversity and harmony, interaction and co-existence—Ecosophy for international ecological discourse analysis. *Foreign Language Research*, (6), 28-33.
- Huang, G. W., & Li, W. P. (2021). Ecolinguistics as applied linguistics. *Modern Foreign Languages*, 44(5), 592-601.
- Lei, L., & Miao, X. -W. (2020). The study of ecosophy in ecological discourse analysis. *Foreign Language Research*, (3), 120-123.
- Stubbe, A. (2015). *Ecolinguistics: Language, ecology and the stories we live by*. London: Routledge.