
RESEARCH ARTICLE

Patterns of Thematic Progression Analysis of Abstracts in Cognitive Linguistics Journals

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ABSTRACT

Thematic progression pattern is an important part of discourse linguistics. In journal papers, an abstract is a mandatory part to explain the main body and views of the paper, and it also becomes the key for readers to decide whether they are willing to read the paper or not. Analyzing the abstracts of papers published in the international journal Cognitive Linguistics from the perspective of thematic progression patterns can effectively improve researchers' understanding of the semantic construction and information transmission of the abstracts of cognitive linguistics. This will not only help them understand cognitive linguistics more accurately and quickly and obtain important information but also help authors write high-quality papers with clear context and clear coherence. According to research, in the abstracts of cognitive linguistics papers, simple linear models and the constant theme models are used more frequently than centralized models.

KEYWORDS

Journal paper; abstract; thematic progression pattern.

ARTICLE INFORMATION

ACCEPTED: 01 July 2024

PUBLISHED: 26 July 2024

DOI: 10.32996/jpbs.2024.4.2.1

1. Introduction

The concept of theme and rheme was introduced by Matthews in his book *Functional Sentence Perspective*, and then, the thematic progression pattern came into the view of scholars. The thematic progression pattern is important for the study of the way in which semantics develop in a discourse and the way in which theme-rheme are linked topically and logically. The abstract of a dissertation is the condensation and core of a paper, which mainly includes a summary of the research background, research aims, methods, results, and conclusions. It is vital for the author of a dissertation to ensure that the reader gets as much of the main information reflected in the abstract as possible while ensuring that the abstract is readable. To do this, the writer must first rationalize the content to be expressed. From paragraphs to sentences, the semantic distribution must be well organized. Cognitive linguistics, as part of linguistics, is a language that focuses on the interaction of human cognitive processes with language. In recent years, cognitive linguistics has attracted a great deal of scholarly research. The corpus in this thesis has been chosen primarily for its abstracts on the human brain and language. Research in this area involves experimental designs, and abstracts in cognitive linguistics may differ from the types of abstracts in other aspects of linguistics. However, very little research has been done on the primary position structure of abstracts. Therefore, the purpose of this paper is to explain which thematic progression pattern is mainly used in cognitive linguistics journal papers and what role this pattern plays in the abstract.

2. Literature Review

Regarding the analysis of the thematic progression pattern in the abstract, there are many domestic and foreign scholars in this research; this paper mainly selects four papers, including three Chinese and one foreign paper.

Jiang Meng built his own small corpus in 2022 with the aim of comparing whether and why there are differences in the thematic progression pattern in undergraduate, master's, and doctoral dissertation abstracts between Chinese and foreign linguistics students. The corpus consists of 30 abstracts of Chinese undergraduate and master's degree dissertations in English and 10

abstracts of foreign linguistics-oriented dissertations. The results show that, due to the linguistic characteristics of the dissertation abstracts, unmarked single-item primes are widely used; secondly, learners in China tend to use the pronominal continuation mode than the linear continuation mode commonly used by foreign learners, which may be due to the influence of the requirements of writing dissertation abstracts in China and the migration of Chinese thinking; again, as learners acquire and master the means of chapter semantic coherence, their dissertation abstracts are gradual. This may be due to the influence of the requirements of writing abstracts in China and the migration of Chinese thinking.

In 2021, Pigeon Dance briefly introduced Danes' three thematic progression patterns, using Hanley and Danes' concept of thematic progression as a theoretical framework. This essay also focuses on Danes' theoretical model as a study. The linguistic material was mainly worked on a corpus of ten abstracts taken from the prestigious journal *Applied Linguistics*. The results show that the continuous developmental type was the most widely used in the abstracts of the journal papers, at 61.8%, followed by the simple linear developmental type at 37.5%. The derived developmental type, on the other hand, does not appear in the corpus. The authors' explanation for this result is that a simple linear model allows for an effective connection between old and new information, interlocking allows for better extension and development of content, and continuous development type coordinates the entire article, allowing for multiple perspectives on the topic and a clearer understanding of the article's theme by the reader.

Cao Zhihong explored the thematic progression pattern of paper abstracts in *Nature* in 2015. She first divided the main positions of 50 papers published in *Nature* and then analyzed their thematic progression patterns. The analysis showed that the short form principal position appeared 60% of the time and that all of the appearances in the abstracts were unmarked principal positions. In terms of the thematic progression pattern, the simple linear model and the constant theme pattern appear relatively more often. This form can effectively improve researchers' understanding of scientific and technical paper abstracts.

In order to investigate and compare the thematic markers and promotion models that serve as the source of cohesive information in the abstracts of second language humanities papers, Tolulope 2019 selected 30 humanities and 30 science abstracts, respectively, by using quantitative and qualitative analysis methods. The thematic progression pattern of Danes is used as the theoretical framework to analyze the mode of the abstract. Preliminary analysis of themes among the two types of choices: unmarked themes are the most popular. In terms of thematic progression pattern, the constant theme is the most important mode, followed by the simple linear mode, the derived themes, and the split themes. The analysis and the results presented here can enhance the understanding of text organizations in L2 science and humanities academic writing.

3. Methodology

3.1 Measures

3.1.1 The theory of thematic progression pattern

V. Mathesius, the founder of the Prague School, in his discussion of functional sentence perspective, proposed to first cut the actual semantics of the sentence and introduce the concepts of theme, rheme, and transition. The subject refers to the point of departure of the discourse, i.e., the known information of the speaker and the addressee. The rheme, on the other hand, refers to the goal of the discourse, which is the narration, description, and illustration of the subject, while the transition is the transitional component from the subject to the rheme. In 1969, the Czech linguist F. Danes also referred to the complex subject relations in discourse as 'thematic progression.' Danes, through his extensive study of Czech materials, proposed five thematic progression patterns, namely simple linear thematic progression, continuous thematic progression, derived thematic progression, split thematic progression, and jump thematic progression. Xu Shenghuan used English sentences as an example to explore the problem of subject position exposition and proposed four development patterns of sentence combination: parallel pattern, concentrated constant theme pattern, and crossed pattern. Huang Yan proposes seven modes of theme: parallel, continuation, concentration, cross pattern, derivation, jump, and no mode. Huang Guowen, in 1997, proposed six types: parallel, continuation, concentration cross pattern, juxtaposition, and the derived pattern. According to Hu Zhuanglin, there are three main types of thematic progression patterns: T1 -----T2 type; R1 -----T2 type; T1+R1 ---T2 type; Zhu Yongsheng summarizes four thematic progression patterns: simple linear model; the constant theme model; the derived model; the split model.

3.1.2 Thematic progression patterns

Although the classification of thematic progression patterns varies, they are mostly the result of reasoning and deduction based on the five models originally proposed by Danes and have similarities. The paper summarizes four thematic progression patterns: the simple linear model and the constant theme model by Danes, the derived theme and jumping forward model by Zhu Yongsheng, the crossed pattern by Huang Yan, the centralized and parallel model by Huang Guowen, and T1+R1 --- T2 (inductive model) by Hu Zhuanglin. The eight propulsion models are used as a theoretical framework for analysis:

1. Simple linear model

The main position of the first sentence leads to a statement position, which (or part of it) acts as the main position of the second

sentence, which in turn leads to the statement position of the second sentence, which in turn acts as the main position of the third sentence. continues in this linear way, allowing the development of the message to continue. The expression is (T for the subject position, R for the statement position, and the number on the right for the hierarchy)

$$\begin{array}{l} T1 \rightarrow R1 \\ \downarrow \\ T2 (=R1) \rightarrow R2 \\ \downarrow \\ T3 (=R2) \rightarrow R3 \end{array}$$

2. The constant theme model

In short, the main position of each sentence is the same, but the expository position is different. The main position of the first sentence is used as the starting point, and the subsequent sentences are developed in this way, leading to different expository positions and analyzing and elaborating on the same main position from different perspectives. The expressions are:

$$\begin{array}{l} T1 \rightarrow R1 \\ T1 \rightarrow R2 \\ T1 \rightarrow R3 \\ \text{and} \\ T1 \rightarrow R1 \\ T(1) \rightarrow R2 \\ T(1) \rightarrow R3 \end{array}$$

3. The derived rheme model

The main position of the first sentence leads to the expository position, and the main position of each subsequent sentence is filled by some part of that expository position. In other words, it is derived from the expository position of the first sentence. The expression is:

$$\begin{array}{l} T1 \rightarrow R1 \\ \downarrow \\ T2 (=R1) \rightarrow R2 \\ \downarrow \\ T3 (= R1) \rightarrow R3 \end{array}$$

4. The Crossed pattern

The crossed progression pattern is characterized by the fact that the subject of the first sentence becomes the expository position of the second sentence, and the subject of the second sentence becomes the expository position of the third sentence.

The crossed progression continues in this way. The expression is

$$\begin{array}{l} T1 \leftarrow R1 \\ T2 \leftarrow R2 \\ T3 \leftarrow R3 \end{array}$$

5. Contralised pattern

The various different sentences, although using different primes, state the same narrative (or part of a narrative) and can be centrally grouped into the same narrative. The expressions are

$$\begin{array}{l} T1 \\ T2 \quad R1 \\ T3 \end{array}$$

6. Parallel pattern

This pattern is mostly used in discourses that represent contrasts. It is characterized by odd-numbered sentences sharing one main position or different aspects of one main position and even-numbered sentences sharing another main position or different aspects of another main position, but the expository positions of each sentence are not the same. The expression is given by

T1→R1
T2→R2
T1→R3
T2→R4

7. Jumping forward pattern

The jump-type propulsion pattern is called a jump-type propulsion pattern because it does not continue uninterruptedly but has a break in the hierarchy. This type of thematic progression pattern can be further divided into four types: two main-position jump types and two expository jump types of reasoning patterns, which are expressed as follows:

(1) The subject position of the first sentence as the subject position of the nth sentence

T1→R1

↓

Tn(=T1)→Rn

(2) The subject position of the first sentence as the statement position of the nth sentence

T1→R1

Tn→Rn (=T1)

(3) The first sentence's dative is used as the subject of the nth sentence

T1→R1

↓

Tn (=R1) → Rn

(4) The expository position of the first sentence is used as the expository position of the nth sentence

T1→R1

↓

Tn→Rn (=R1)

8. Inductive pattern

The main position and the expository position of the preceding sentence or the main position and the expository position of the preceding sentences are combined to become the main position of the following sentence. The expression is.

T (n-1) → R (n-1)

↓

Tn (=Tn-1+Rn-1)→Rn

It is important to note that (1) the division of the main and expository positions is made at the sentence level, i.e., semantics are sliced and diced on a sentence-by-sentence basis. (2) In the thematic progression pattern, when referring to the main-descriptive position of each clause being the same, it does not mean that they are absolutely the same but also includes components that have a contextual relationship or components that are similar in meaning or have some relevance.

3.2 Procedure

3.2.1 Corpus collection

A total of 30 papers in the field of cognitive linguistics were collected from journals on language analysis of the visually impaired, mainly from the Internet and Web of Science websites, and their abstracts were analyzed. The articles were selected from well-known scholars in order to enhance the professional relevance of the findings and research. Of these, 30 abstracts were randomly selected, summing up 30 paragraphs and 224 sentences. Each paragraph averaged 7.47 sentences and 158 words. The results were then analyzed sentence by sentence, paragraph by paragraph, in terms of patterns of thematic progression, and the results were tallied.

3.2.2 Analysis of the corpus and research questions

This study is divided into three steps: firstly, the 30 abstracts are analyzed, the main position and narrative position structures in the corpus are marked at the sentence level, and the thematic progression patterns between sentences are classified and marked according to the eight thematic progression patterns summarized in this paper, and their frequencies and proportions are counted; finally, the data results are compared and analyzed. Based on the thematic progression pattern and the journal abstract corpus, the specific research questions are to illustrate which thematic progression model will be used primarily in cognitive linguistics journal papers and what effect it will have. The following are the types of thematic progression models that appear in abstracts about cognitive linguistics.

1. Simple linear model

This paper(T1) reports an experimental study on the impact of time-compressed speech on the acceptability and intelligibility of utterances in Brazilian Portuguese(R1). (2)For the experiments(T2), short audio sentences containing warning messages were used as stimuli(R2). (3)These sentences(T3) were recorded in a natural speech rate and then digitally manipulated to faster rates in a scalar fashion (from 9 to 19 syllables per second)(R3).

T1-----R1 T2(=R1)-----R2 T3(=R2)-----R3

2. The constant theme model

This study(T1) examines the electrical brain activity of visually impaired individuals(R1). (2)Its aim(T2) is to identify differences in latency and signal amplitude between visually and non-visually impaired individuals in order to improve the school experience of students with visual impairment(R2). (3)The experiment(T3) included five visually impaired and five non-visually impaired subjects(R3).

T1-----R1 T2(=T1)-----R2 T3(=T1)-----R3

3. The derived rheme model

Blind people(T1)use auditory information to locate sound sources and sound-reflecting objects (echolocation). (R1) (2)Sound source localization(T2) benefits from the hearing system's ability to suppress distracting sound reflections (R2)(3), whereas echolocation(T3)would benefit from "unsuppressing" these reflections. (R3)

T1-----R1 T2(=R1)-----R2 T3(=R1)-----R3

4. The crossed pattern

In early blindness, the primary visual area (PVA)(T1) loses the ability to process visual information and shifts to working on the processing of somatosensory input, auditory input, and some higher level cognitive functions(R1). (2)It has not yet been investigated whether such functional changes(T2) can lead to alterations of the functional connectivity between the PVA and other brain areas in the resting state(R2).

T1-----R1 T2(=R1)-----R2(=T1)

5. Contralised pattern

6. Parallel pattern

(1)How do we(T1) represent information without sensory features(R1)? (2)How are abstract concepts(T2) like "freedom," devoid of external perceptible referents, represented in the brain(R2)? (3)Here, to address the role of sensory information in the neural representation of concepts, we(T3) used fMRI to investigate how people born blind process concepts whose referents are imperceptible to them because of their visual nature ("rainbow," "red")(R3). (4)Activity for these concepts(T4) was compared to that of sensorially-perceptible referents ("rain"), classical abstract concepts("justice"), and concrete concepts ("cup"), providing a gradient between fully concrete and fully abstract concepts in the blind(R4).

T1-----R1 T2-----R2 T3(=T1)-----R3 T4(=T2)-----R4

7. Jumping forward pattern

On-arbitrary sound-shape correspondences (SSC), such as the "bouba-kiki" effect(T1), have been consistently observed across languages and, together with other sound-symbolic phenomena, challenge the classic linguistic dictum of the arbitrariness of the sign(R1). (2)Yet, it is unclear what(T2) makes a sound "round" or "spiky" to the human mind(R2). (3)Here, we(T3) tested the hypothesis that visual experience is necessary for the emergence of SSC, supported by empirical evidence showing reduced SSC in visually impaired people(R3).

T1-----R1 T2-----R2(=T1) T3-----R3(T1)

8. Inductive pattern

(5)The present paper(T5) describes the experimental methods and results of virtual sound localization by blind people through the use of a simple electronic travel aid based on an infrared laser pulse and the time of flight distance measurement principle(R5). (6)The lack of vision (T6)is often compensated by other perceptual abilities, such as tactile or hearing ability(R6). (7)The results(T7) show that blind people easily perceive and localize binaural sounds and assimilate them with sounds from the environment(R7).

T5-----R5 T6----R6 T7(T5+R5, T6+R6)-----R7

4. Results and Discussion

The inter-sentence semantic links in the discourse are mainly based on various patterns of thematic progression, and the analysis of the use of thematic progression patterns in the discourse can help investigate how the discourse of dissertation abstracts achieves structural and semantic articulation and coherence. Table 1 shows that in the abstracts of journal papers in cognitive linguistics, the simple linear model is most frequently used, followed by the same model of main position and the jumping forward model, and least frequently by the parallel model, while the concentrated model is not used.

Thematic Progression Pattern	Occurrence	Percentage %
Simple linear model	20	23.5
The constant theme model	17	20
Jumping forward pattern	17	20
Inductive pattern	14	16.5
The derived rheme model	9	10.6
The crossed pattern	5	5.9
Parallel pattern	3	3.5
Contralised pattern	0	0.0
Total	85	100

Table 1 Various patterns of thematic progression in the abstracts of journal papers in cognitive linguistics

The abstract of cognitive linguistics has a whole-part structure, but because of the particularity of each article, the thematic progression pattern of each article is different. However, it has inherent logic and coherence. The promotion of a simple linear model can realize the effective connection between new and old information, and the interlocking can make the content extend and develop better. The constant theme model can coordinate the whole article, and the theme can be elaborated from multiple angles so that readers can understand the theme of the article more clearly. Because of the particularity of the experimental part in the abstract of cognitive linguistics, the jumping forward model has been widely used recently. Because of our conversational habits and the brevity required by the abstract, we will not repeat our words to elicit new information in the writing process, so the centralized thematic progression model is not commonly used. This paper mainly studies the abstract of papers in cognitive linguistics. With the acquisition and mastery of the means of textual semantic coherence, learners can use a variety of thematic progression models to write the abstract of papers later so as to improve the readability of the text.

5. Conclusion

It is clear from this experiment that the discourse markers of the simple linear model (also known as discourse tokens) play a crucial role when writing abstracts for neurolinguistic papers. Firstly, this form of discourse markers not only provides a simple structural framework for the abstract, helping readers to quickly understand the main content and organisation of the literature, but also clearly identifies the sections of background, methods, results, and conclusions. Discourse markers enable readers to quickly locate and assess the relevance and contribution of the literature. Secondly, other different forms of discourse markers help to accurately communicate the focus and key messages of a study. Within a limited word count, the precise selection and use of discourse markers can make abstracts more information dense, avoiding redundancy and unnecessary detail whilst ensuring that the core findings are clearly communicated, as well as increasing the diversity of abstract writing and giving effective support to postgraduate student dissertation writing.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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